Section 15.3
Traffic Impact Analysis

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OLD TOWN YUCCA VALLEY SPECIFIC PLAN
CMP TRAFFIC IMPACT ANALYSIS
TOWN OF YUCCA VALLEY, CALIFORNIA

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1.0 INTRODUCTION

The purpose of this traffic impact analysis is to evaluate the Old Town Yucca Valley Specific Plan development from a traffic circulation standpoint. The proposed Old Town Specific Plan is intended to provide a vehicle for revitalizing the Old Town area in the Town of Yucca Valley. The Old Town Specific Plan area is generally located between Katje Way and Cholla Avenue, south of Sunland Drive and north of Onaga Trail in the Town of Yucca Valley. The proposed land use plan for the Old Town Specific Plan includes a total of 1,116 residential dwelling units and 2,900,604 square feet of commercial, office, and light industrial non-residential uses. The general location of the project site is presented on Exhibit 1-A.

The preparation of this traffic impact analysis is in conformance with the requirements of the San Bernardino County Congestion Management Program (CMP). Exhibit 1-B depicts the CMP roadway network and potential study area limits. The CMP requires no analysis further than 5 miles from the project site or where fewer than 50 peak hour project trips are added to a CMP intersection or fewer than 100 peak hour project trips (two-way) are added to freeway links. The CMP requires both an Interim Year analysis and a CMP Horizon Year analysis. However, as this project is a Specific Plan amendment to the currently adopted General Plan, the CMP Horizon Year also serves as the project Opening Year (Interim Year).

The introduction to this report presents an overview of the project and provides a brief description of the study area. The analysis methodologies used to evaluate the impacts of the project are described and the definitions of roadway system deficiencies and significant project impacts are presented in the context of the CMP and California Environmental Quality Act (CEQA) requirements.

EXHIBIT 1-A

LOCATION MAP

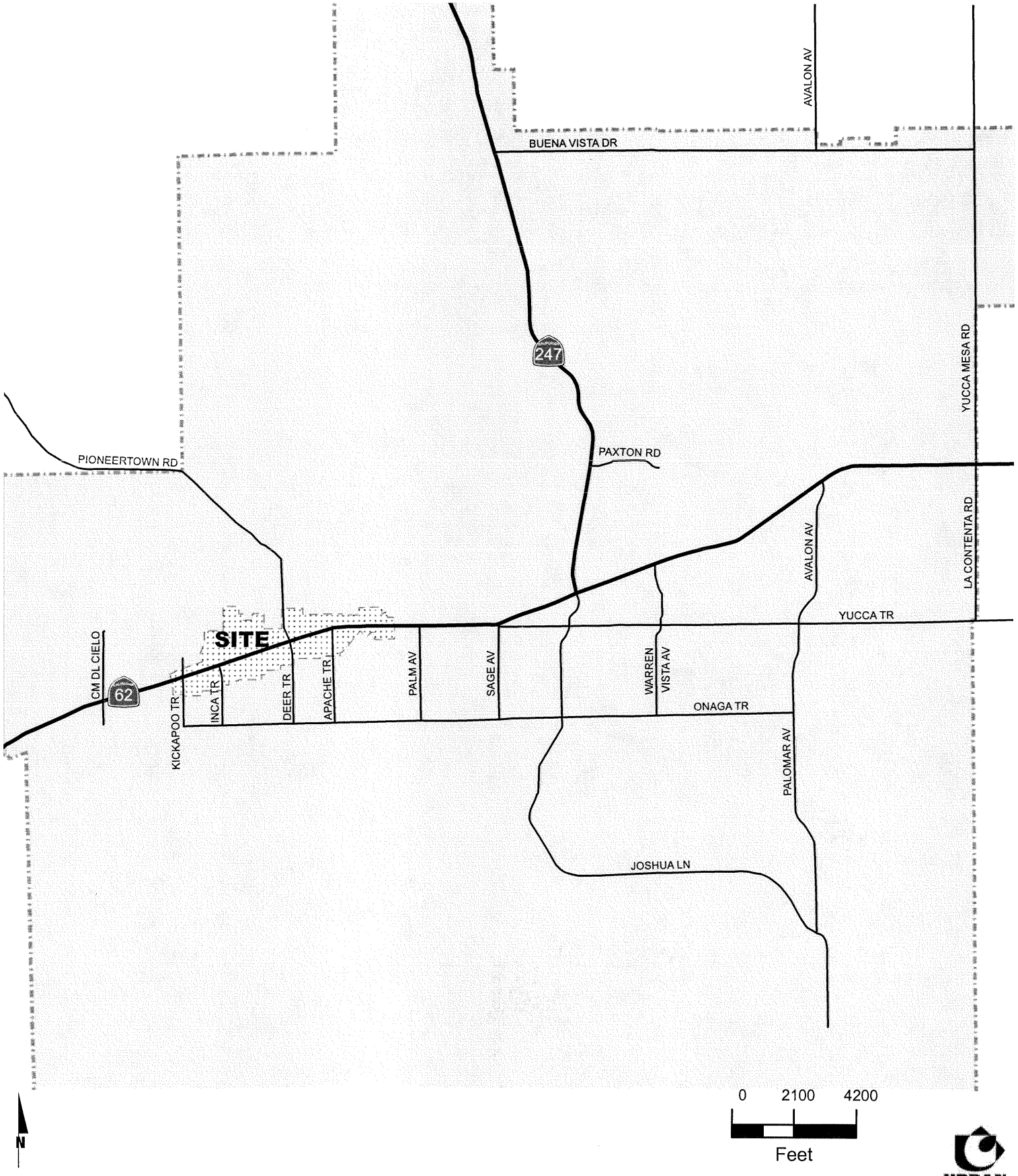
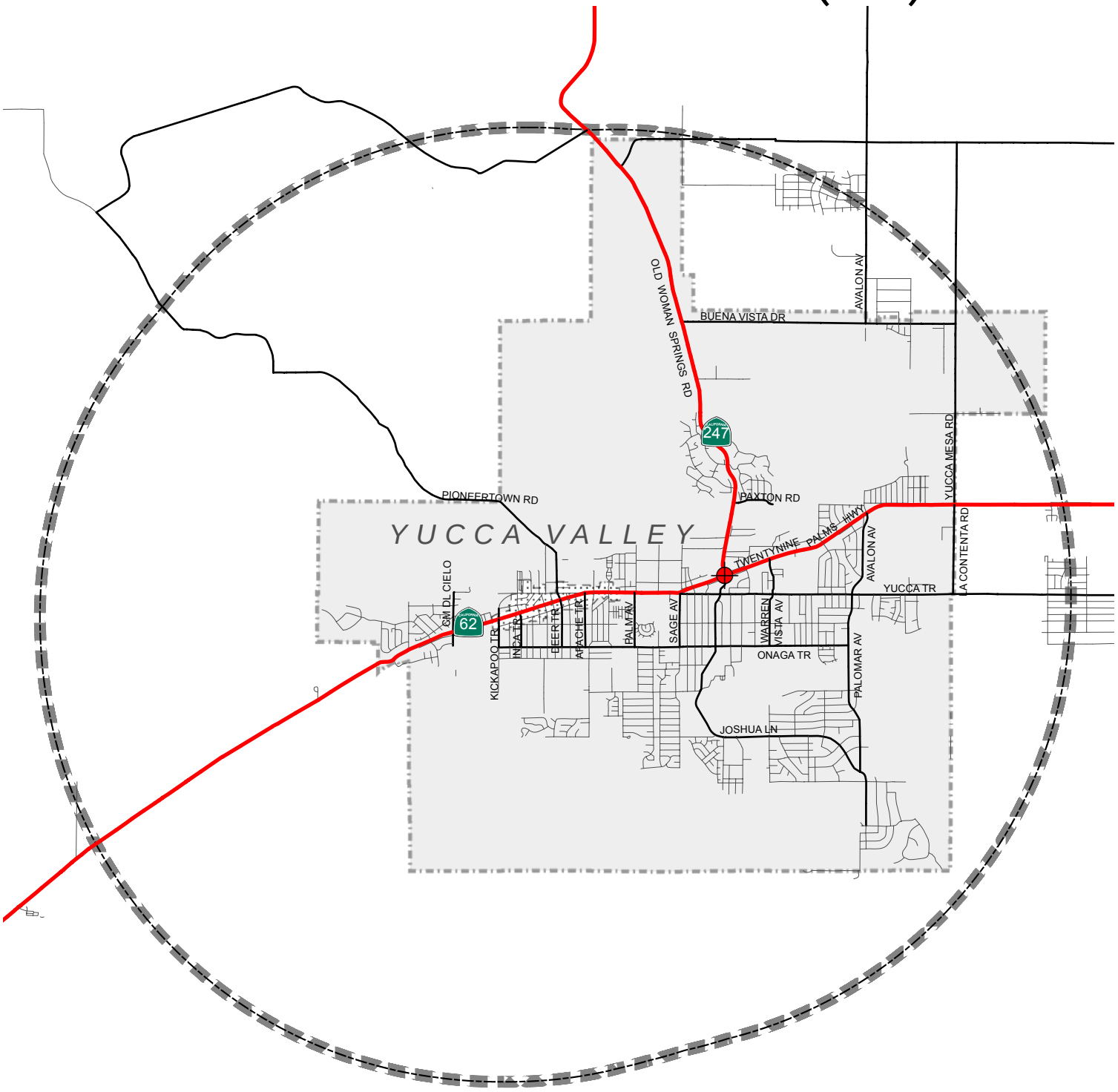


EXHIBIT 1-B

SAN BERNARDINO COUNTY
CONGESTION MANAGEMENT PROGRAM (CMP) NETWORK



LEGEND:

- CMP INTERSECTION
- CMP ROADWAY
- 5-MILE RADIUS
- SITE

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0 4100 8200

Feet

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Subsequent sections of the report will describe the project in detail and provide a complete description of existing and projected traffic conditions within the study area.

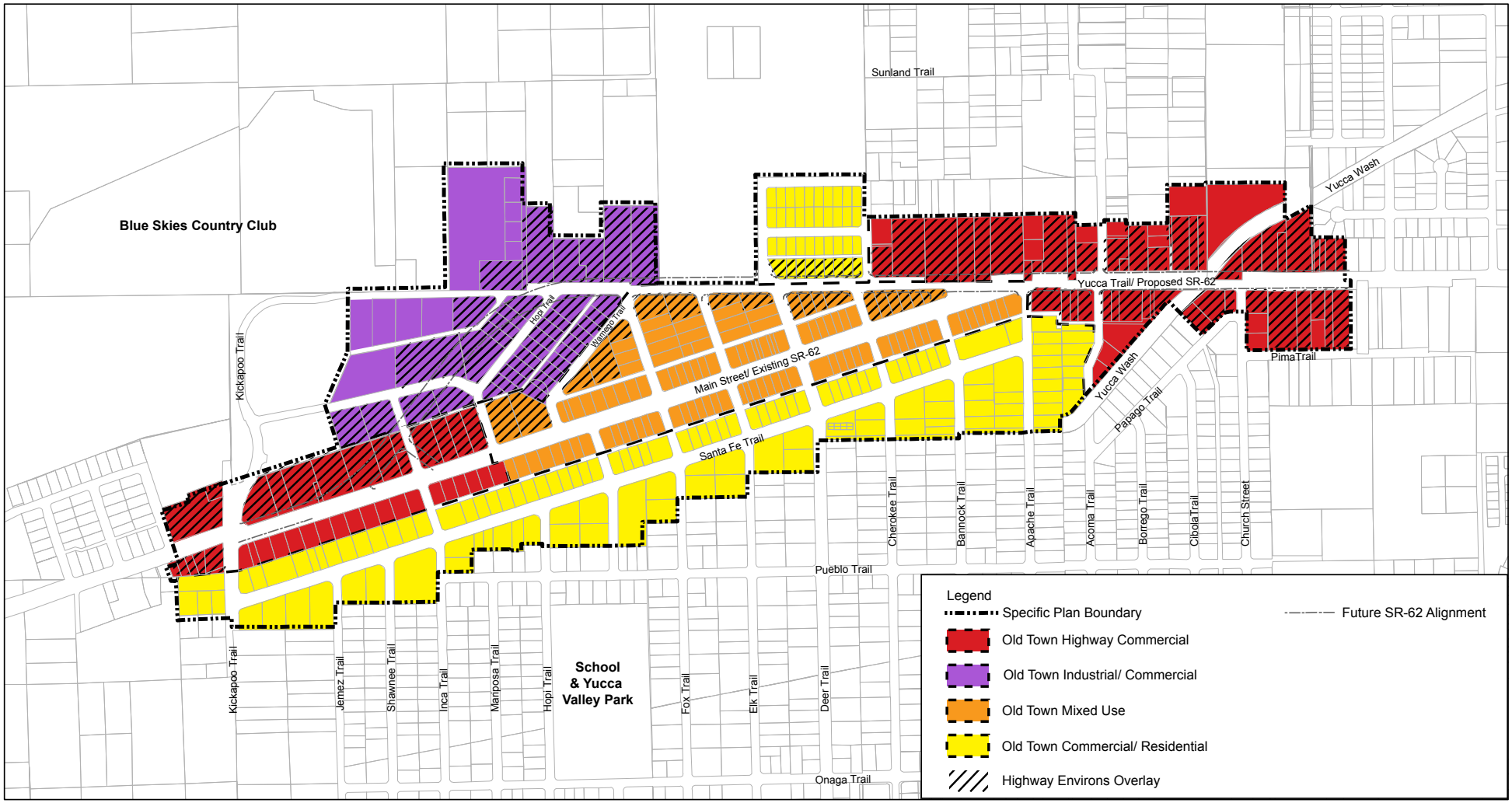
1.1 Project Overview

The Old Town Specific Plan includes four distinct districts that provide for a mix of complementary uses that will encourage compact, vertical development, resulting in a street-oriented, pedestrian friendly environment. The proposed land use plan for the Old Town Specific Plan includes a total of 1,116 residential dwelling units and 2,900,604 square feet of commercial, office, and light industrial non-residential uses. The net change from the currently adopted General Plan land uses for the Old Town Specific Plan area is an increase of 1,089 dwelling units and a decrease of 478,435 square feet of non-residential uses. The Old Town Specific Plan area is generally located between Katje Way and Cholla Avenue, south of Sunland Drive and north of Onaga Trail in the Town of Yucca Valley. The site plan/land use map for the Old Town Specific Plan development is illustrated on Exhibit 1-C.

The Old Town Specific Plan includes the proposed realignment of State Route (SR-) 62 in order to allow through traffic along the highway to bypass the Old Town area, thus promoting a more pedestrian-oriented environment. The preferred realignment alternative (California Department of Transportation (Caltrans) Alternative D) transitions SR-62 to the north, east of Kickapoo Trail, and onto the existing Yucca Trail alignment, in the vicinity of Fox Trail. The Old Town Specific Plan includes a highway environs overlay intended to address redevelopment in the context of the proposed future realignment. The existing alignment of SR-62 through the Specific Plan area will be reconstituted as a "Main Street" design feature that incorporates enhanced gateways for access to/from SR-62 and traffic calming measures to enhance pedestrian safety, reduce traffic speeds, and promote walkability within the area.

EXHIBIT 1-C

SITE PLAN/LAND USE MAP



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OLD TOWN YUCCA VALLEY SPECIFIC PLAN CMP TIA, Yucca Valley, California - 03653: site-lu.dwg

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Additional detailed discussion of the roadway network features of the project and its traffic generation characteristics will be provided in subsequent sections of this report.

1.2 Study Area

The overall study area evaluated in this traffic impact analysis was previously presented on Exhibit 1-B, which also identified all CMP roadways within the study area. The roadway elements which must be analyzed in accordance with CMP requirements are dependent on both the analysis year (project Interim Year or CMP Horizon Year) and project generated traffic volumes.

Regional access to the site is provided by Twentynine Palms Highway (SR-62) and Old Woman Springs Road (SR-247). Local access is provided by various arterial roadways in the vicinity of the project site. The local arterials which will be most affected by the proposed development include Yucca Trail, Pioneertown Road/Deer Trail, Santa Fe Trail, Kickapoo Trail, and Acoma Trail.

A series of scoping discussions were conducted with Town of Yucca Valley staff in order to define the desired (local agency required) analysis locations for existing and future analysis conditions. The 2030 Horizon Year analysis locations required by the CMP can only be determined once the projected 2030 project-related traffic volumes have been developed. This information will be presented in subsequent sections of this report.

1.3 Analysis Methodologies

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with the San Bernardino County Congestion Management Program. The following analysis timeframes are considered in this study:

- 2006 Existing Conditions
- 2030 Horizon Year Without Project Conditions (w/o SR-62 Realignment)
- 2030 Horizon Year With Project Conditions (w/SR-62 Realignment)

Both the overall methodologies used to develop future traffic volume forecasts, and the explicit traffic operations analysis methodologies are summarized herein. The primary section of interest to the non-technically oriented reviewer is Section 1.4.2 (Definition of Significant Impact).

1.3.1 Overall Analysis Methodology

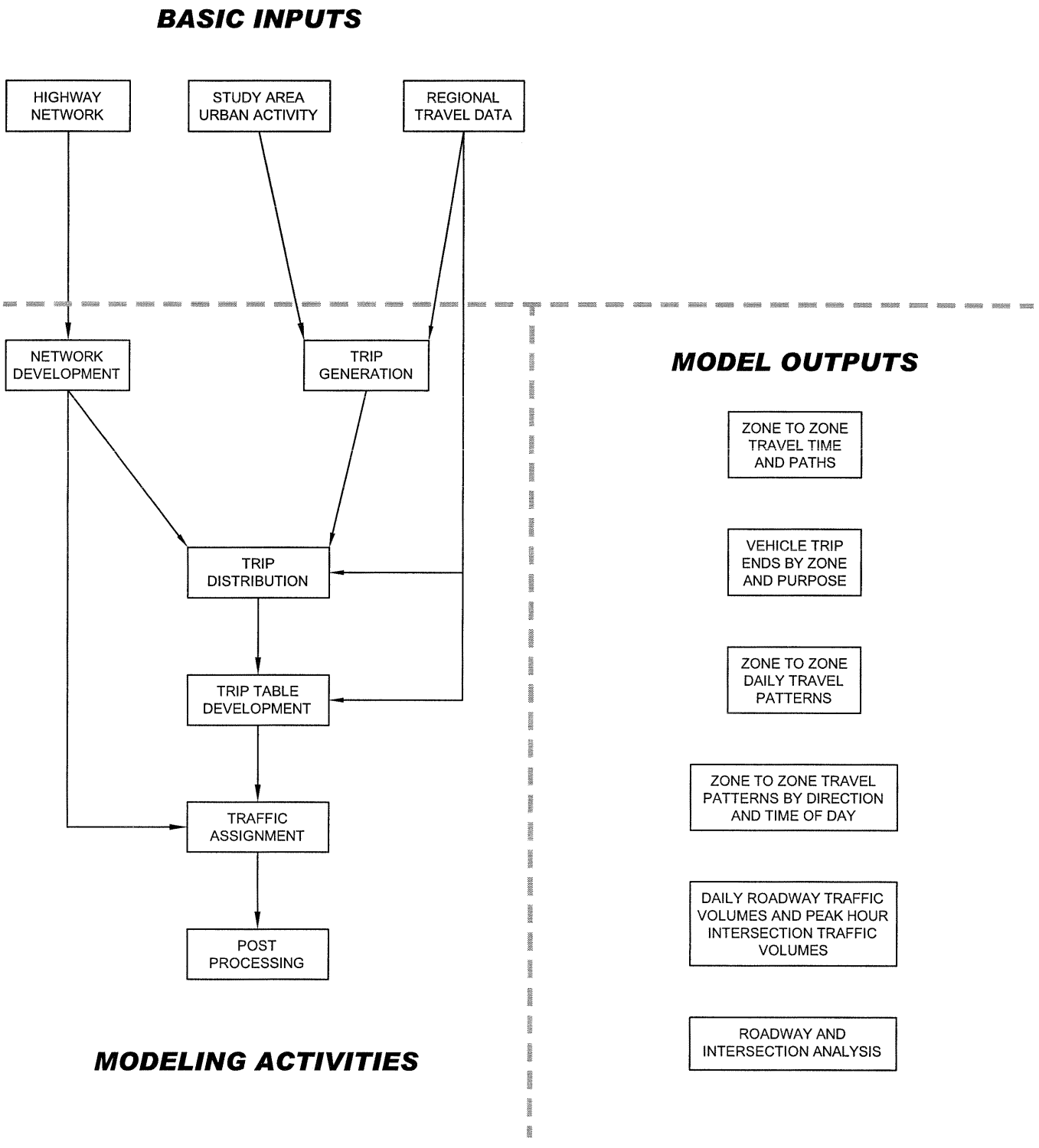
As described previously, traffic conditions are evaluated in this report for both existing conditions and two future horizon year conditions. Urban Crossroads, Inc. conducted the actual traffic counts to quantify existing traffic conditions. At the direction of the CMP, the analysis considers the weekday AM and PM peak hours of traffic.

The 2030 Horizon Year without and with project traffic volumes have been derived from the subregional travel demand model currently being used for long range planning in the Morongo Basin. The RSA 33 - Morongo Basin Transportation Model (MBTM) was developed by Urban Crossroads, Inc. staff in 1997. Exhibit 1-D illustrates the general MBTM modeling process.

The MBTM has a base (validation) year of 1994 and a horizon (future forecast) year of 2020. The difference in model volumes (2020 – 1994) defines the growth in traffic over the 26 year period. Since the existing conditions traffic count data was collected in 2006, the overall model growth needs only to reflect the growth from 2006 to 2030 (24 years). A factor of 0.92 (24/26) would typically be applied to the overall model growth to determine the incremental growth to be added to the existing count data to determine the refined 2030 roadway segment daily and peak hour

EXHIBIT 1-D

GENERAL MBTM MODELING PROCESS



approach and departure traffic volumes. However, based on discussions with staff at the San Bernardino Associated Governments (SANBAG), it was decided to use the model growth as it stands (the full 26 years). A comparison between the data included in the model and San Bernardino County 2030 socio-economic data (SED) indicated that the two are fairly similar, and for the most part the model data was a little higher (and therefore conservative).

The refined future peak hour forecasts are developed in a manner consistent with the National Cooperative Highway Research Program (NCHRP Report 255), using the collected existing peak hour data. The recommended post processing procedure can be described in three very broad steps:

Step 1: Perform additive incremental adjustment to future model forecasts to account for differences between the existing conditions model and actual traffic count data.

Step 2: Verify reasonableness of relationship between peak hour forecasts and daily traffic volumes forecasts. Adjust growth if necessary.

Step 3: Review resulting forecasts for conservation of flow, or other factors such as anticipated development patterns, etc. Adjust forecast to provide reasonable conservation of flow, etc., as necessary.

The MBTM has been reviewed to evaluate the representation of other planned development projects within the Town of Yucca Valley. The other development projects include the Mountain Vista at Western Hills Ranch residential development, the Yucca Valley Retail Center, the K-Mart Reuse project, the Home Depot project, and several other projects. The complete list of other developments has been included in Section 4 of this report.

The growth in SED between the baseline and forecast years for the traffic analysis zones (TAZs) containing these respective projects was assessed and modified to ensure proper representation of the planned development projects in the MBTM.

The TAZ structure for the MBTM has been reviewed within the Old Town Specific Plan area. The initial TAZ structure for the MBTM has the same TAZ boundaries as the current SANBAG model. Under the initial structure, a total of 10 TAZs comprise the Old Town Specific Plan area (as well as a portion of the surrounding area). These TAZs have been subdivided into 52 TAZs, 44 of which represent the Old Town Specific Plan area in its entirety, to better represent the proposed land use patterns and circulation features (including the SR-62 realignment) for the proposed project under 2030 Horizon Year with project conditions. This refined TAZ structure was then adopted for both the Existing (baseline) and 2030 Horizon Year without project conditions, so that a comparison of the Old Town Specific Plan area traffic characteristics across analysis conditions would yield meaningful results.

The Old Town Yucca Valley Specific Plan project only traffic volumes for the 2030 CMP Horizon Year with project condition projections were estimated via the MBTM. Given that there are existing land uses in the Old Town Specific Plan area which generate traffic, the proposed Old Town Specific Plan area project trips are not the total trips resulting from the planned land uses, but rather the difference between the future trips and the existing trips. The net project trips have been calculated by subtracting the trips generated in the Specific Plan area under Existing (baseline) conditions from the trips projected to be generated by the Specific Plan area under 2030 Horizon Year with project conditions. A select zone (trip distribution) analysis for the proposed Specific Plan development was then performed using the MBTM under 2030 Horizon Year with project conditions. The

project only traffic forecasts have been generated by applying the net project trip generation, distribution and traffic assignment calculations.

The 2030 Horizon Year without project traffic volumes have also been derived from the MBTM. As stated previously, the TAZ structure for the Old Town Specific Plan area has been subdivided in the same manner for all analysis conditions. The land uses proposed in the currently adopted Town of Yucca Valley General Plan for the area were used to replace the regional SED presently included in the model. The roadway network structure, however, was not changed to include the realignment of SR-62, and therefore is the same as the structure under Existing (baseline) conditions.

Flow conservation checks and forecast adjustments were performed as necessary to ensure that all future 2030 CMP Horizon Year traffic volume forecasts are reasonable. The result of this traffic forecasting procedure is a series of traffic volumes suitable for traffic operations analysis.

1.3.2 Traffic Operations Analysis

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

The definitions of level of service for uninterrupted flow (flow unrestrained by the existence of traffic control devices) are:

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

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

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

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

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

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

Uninterrupted flow is generally found only on limited access (freeway) facilities in urban areas.

The definitions of level of service for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The level of service is typically dependent on the quality of traffic flow at the intersections along a roadway. The HCM methodology expresses the level of service at an intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control. The levels of service determined in this study are calculated using the HCM methodology.

For signalized intersections, average stopped delay per vehicle for the overall intersection is used to determine level of service. Levels of service at signalized study intersections have been evaluated using an HCM intersection analysis program.

For all way stop (AWS) controlled intersections, the ability of vehicles to enter the intersection is not controlled by the occurrence of gaps in the traffic flow along the major street. The AWS controlled intersection has been evaluated using the HCM methodology for this type of multi-way stop controlled intersection configuration. The level of service for this type of intersection analysis is also based on average stopped delay per vehicle for the overall intersection.

Study area intersections which are stop sign controlled with stop-control on the minor street only (cross street stop (CSS)) have been analyzed using the two-way stop-controlled unsignalized intersection methodology of the HCM. For these intersections, the calculation of level of service is dependent on the occurrence of gaps occurring in the traffic flow along the major street.

The level of service has been calculated using data collected describing the intersection configuration and traffic volumes at signalized locations to calculate average intersection delay. The level of service for unsignalized intersections with stop control on the minor street is based on the stopped delay per vehicle for the worst minor street movement(s).

The levels of service are defined in terms of average delay for the intersection analysis methodology as follows:

LEVEL OF SERVICE	AVERAGE TOTAL DELAY PER VEHICLE (SECONDS)	
	SIGNALIZED	UNSIGNALIZED
A	0 to 10.00	0 to 10.00
B	10.01 to 20.00	10.01 to 15.00
C	20.01 to 35.00	15.01 to 25.00
D	35.01 to 55.00	25.01 to 35.00
E	55.01 to 80.00	35.01 to 50.00
F	80.01 and up	50.01 and up

Per CMP guidelines, signalized intersections are considered deficient (LOS "F") if the overall intersection critical volume-to-capacity (V/C) ratio exceeds 1.0, even if the level of service defined by the delay value is below the defined LOS standard. The V/C ratio is defined as the critical volumes divided by the intersection capacity. A V/C ratio greater than 1.0 implies an infinite queue.

A level of service analysis must be conducted on all existing segments and intersections on the CMP network potentially impacted by the project or plan (as defined by the thresholds in Section 1B of the 2005 San Bernardino CMP). Urban segments (i.e., segments on roadways that are

generally signalized) do not require segment analysis. Segment requirements can normally be determined by the analysis of lane requirements at intersections.

The LOS analysis for signalized intersections has been performed using optimized signal timing. This analysis has included an assumed lost time of two seconds per phase in accordance with San Bernardino CMP recommended default values. Signal timing optimization has considered pedestrian safety and signal coordination requirements. Appropriate time for pedestrian crossings has also been considered in the signalized intersection analysis.

The following formula has been used to calculate the pedestrian minimum times for all HCM runs, pursuant to the 2003 Manual of Uniform Traffic Control Devices (MUTCD):

[(Curb-to-Curb distance) / (4 feet/second)] + 5 seconds

Saturation flow rates of 1,800 vehicles per hour of green (vphg) for through and right-turn lanes and 1,700 vphg for single left-turn lanes, 1,600 vphg per lane for dual left-turn lanes, and 1,500 vphg per lane for triple left-turn lanes have been assumed for all capacity analysis under 2006 Existing conditions. Under 2030 Horizon Year conditions, saturation flow rates of 1,900 vphg for through and right-turn lanes and 1,800 vphg for single left-turn lanes, 1,700 vphg per lane for dual left-turn lanes, and 1,600 vphg per lane for triple left-turn lanes have been assumed. These are the default values recommended by the CMP guidelines.

As required by the San Bernardino CMP, the peak hour traffic volumes have been adjusted to peak 15 minute volumes for analysis purposes using the existing observed peak 15 minute to peak hour factors for all scenarios analyzed. Where feasible improvements, in accordance with

the local jurisdiction's General Plan, which result in acceptable operations cannot be identified, the 2030 peak hour factor has been adjusted upwards to 0.95. This is specifically allowed in the San Bernardino CMP guidelines to account for the effects of congestion on peak spreading under future year conditions. Peak spreading refers to the tendency of traffic to spread more evenly across time as congestion increases.

1.4 Definition of Deficiency and Significant Impact

The following definitions of deficiencies and significant impacts have been developed in accordance with the Town of Yucca Valley and County of San Bernardino CMP requirements.

1.4.1 Definition of Deficiency

The definition of an intersection deficiency for intersections in the Town of Yucca Valley sphere of influence has been obtained from the Town of Yucca Valley General Plan. The General Plan states that peak hour intersection operations of LOS "D" or better are considered acceptable. Therefore, any Town of Yucca Valley intersection operating at LOS "E" or LOS "F" will be considered deficient. Per CMP and CALTRANS direction, state controlled facilities (state highways, freeway ramp intersection, etc.) are subject to local jurisdiction traffic operations requirements, with no greater than a 45 second average stopped delay per vehicle during peak hour operations (middle of LOS "D").

The identification of a CMP deficiency requires further analysis in satisfaction of CMP requirements, including:

- Evaluation of the improvement measures required to restore traffic operations to an acceptable level of service with respect to CMP and local jurisdiction LOS standards.

- Calculation of the project share of new traffic on the impacted CMP facility during peak hours of traffic.

- Estimation of the cost required to implement the improvements required to restore traffic operations to an acceptable level of service as described above.

This study incorporates each of these aspects for all locations where a CMP deficiency is identified.

1.4.2 Definition of Significant Impact

The identification of significant impacts is a requirement of the California Environmental Quality Act (CEQA), and is not directly addressed in the CMP document. The Town of Yucca Valley General Plan and Circulation Element have been adopted in accordance with CEQA requirements, and any roadway improvements within the Town of Yucca Valley which are consistent with these documents are not considered a significant impact, so long as the project contributes its "fair share" funding for improvements.

A traffic impact is considered significant and immitigable if the project both: i) contributes measurable traffic to and ii) substantially and adversely changes the level of service at any off-site location projected to experience deficient operations under foreseeable cumulative conditions, where feasible improvements consistent with the Town of Yucca Valley General Plan cannot be constructed.

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2.0 PROJECT DESCRIPTION AND CMP TRAFFIC CONTRIBUTION TEST

This section describes the proposed Old Town Specific Plan development land uses and traffic characteristics for each of the future horizon year conditions analyzed. The CMP traffic contribution test used to determine the CMP Horizon Year (2030) analysis locations is also presented in this section.

2.1 Project Description

The Old Town Specific Plan includes four distinct districts that provide for a mix of complementary uses that will encourage compact, vertical development, resulting in a street-oriented, pedestrian friendly environment. The proposed land use plan for the Old Town Specific Plan includes a total of 1,116 residential dwelling units and 2,900,604 square feet of commercial, office, and light industrial non-residential uses. Table 2-1 provides a comparison of currently adopted General Plan and Specific Plan land use patterns for the Old Town Specific Plan area. The net change from the currently adopted General Plan land uses for the Old Town Specific Plan area is an increase of 1,089 dwelling units and a decrease of 478,435 square feet of non-residential uses. The Old Town Specific Plan area is generally located between Katje Way and Cholla Avenue, south of Sunland Drive and north of Onaga Trail in the Town of Yucca Valley. The site plan/land use map for the Old Town Specific Plan development was previously presented on Exhibit 1-C.

The Old Town Specific Plan includes the proposed realignment of State Route (SR-) 62 in order to allow through traffic along the highway to bypass the Old Town area, thus promoting a more pedestrian-oriented environment. The preferred realignment alternative (California Department of Transportation (Caltrans) Alternative D) transitions SR-62 to the north, east of Kickapoo Trail, and onto the existing Yucca Trail alignment, in the vicinity of Fox Trail. The Old town Specific Plan includes a highway environs overlay intended to address

TABLE 2-1

OLD TOWN SPECIFIC PLAN AREA LAND USE PLAN BUILDOUT COMPARISON[1]

District	General Plan Buildout		Specific Plan Buildout		Difference (SP - GP)		Percent Difference	
	DU	SF	DU	SF	DU	SF	DU	SF
OLD TOWN MIXED-USE Commercial/Retail (up to 1.00 FAR)[2] Residential (up to 40 DU/AC)	0	208,812	465	759,317	465	550,505	--[3]	263.64%
OLD TOWN COMMERCIAL/RESIDENTIAL Commercial (up to 0.40 FAR) Residential (up to 24 DU/AC)	11	1,113,542	413	699,769	402	-413,773	3654.55%	-37.16%
OLD TOWN INDUSTRIAL/COMMERCIAL Industrial/Commercial (up to 0.40 FAR) Residential (up to 30 DU/AC)	0	862,241	238	551,834	238	-310,407	--[3]	-36.00%
OLD TOWN HIGHWAY COMMERCIAL Commercial/Retail (up to 0.35 FAR) Residential (none)	16	1,194,444	0	889,684	-16	-304,760	-100.00%	-25.51%
TOTAL	**27**	**3,379,039**	**1,116**	**2,900,604**	**1,089**	**-478,435**	**4033.33%**	**-14.16%**

[1] Units: DU = Dwelling Units; SF = Square Feet; AC = Acres.

[2] FAR = Floor-to-Area ratio.

[3] Can not divide by zero.

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redevelopment in the context of the proposed future realignment. The existing alignment of SR-62 through the Specific Plan area will be reconstituted as a "Main Street" design feature that incorporates enhanced gateways for access to/from SR-62 and traffic calming measures to enhance pedestrian safety, reduce traffic speeds, and promote walkability within the area. The preferred alignment alternative is depicted on Exhibit 2-A.

Caltrans SR-62 Realignment Alternatives A through C provide very different alignments for SR-62. Alternative A maintained the existing SR-62 alignment through the Old Town Specific Plan area. Alternative B separated the east and westbound directions of travel along SR-62, maintaining the eastbound lanes along the existing SR-62 alignment and transitioning the westbound lanes to the north and onto the existing Yucca Trail alignment. Alternative C also separated the east and westbound directions of travel along SR-62, with the eastbound lanes transitioning to the south and onto the existing Santa Fe Trail alignment and the westbound lanes transitioning to the north and onto the existing Yucca Trail alignment.

2.2 Project Model Representation

In order to determine the traffic characteristics of the proposed Old Town Specific Plan development, especially in relation to the existing and currently adopted General Plan land uses, it is necessary to understand how the Old Town area is represented in the Morongo Basin Transportation Model (MBTM).

The TAZ structure for the MBTM has been reviewed within the Old Town Specific Plan area. The initial TAZ structure for the MBTM has the same TAZ boundaries as the current SANBAG model. Under the initial structure, a total of 10 TAZs comprise the Old Town Specific Plan area (as well as a portion of the surrounding area). The initial MBTM TAZ structure is illustrated on Exhibit 2-B. These TAZs have been subdivided into 52 TAZs, 44 of which constitute the Old Town Specific Plan area in its entirety, to better represent the proposed land use patterns and

EXHIBIT 2-A

STATE ROUTE 62 PREFERRED REALIGNMENT ALTERNATIVE (CALTRANS ALTERNATIVE D)

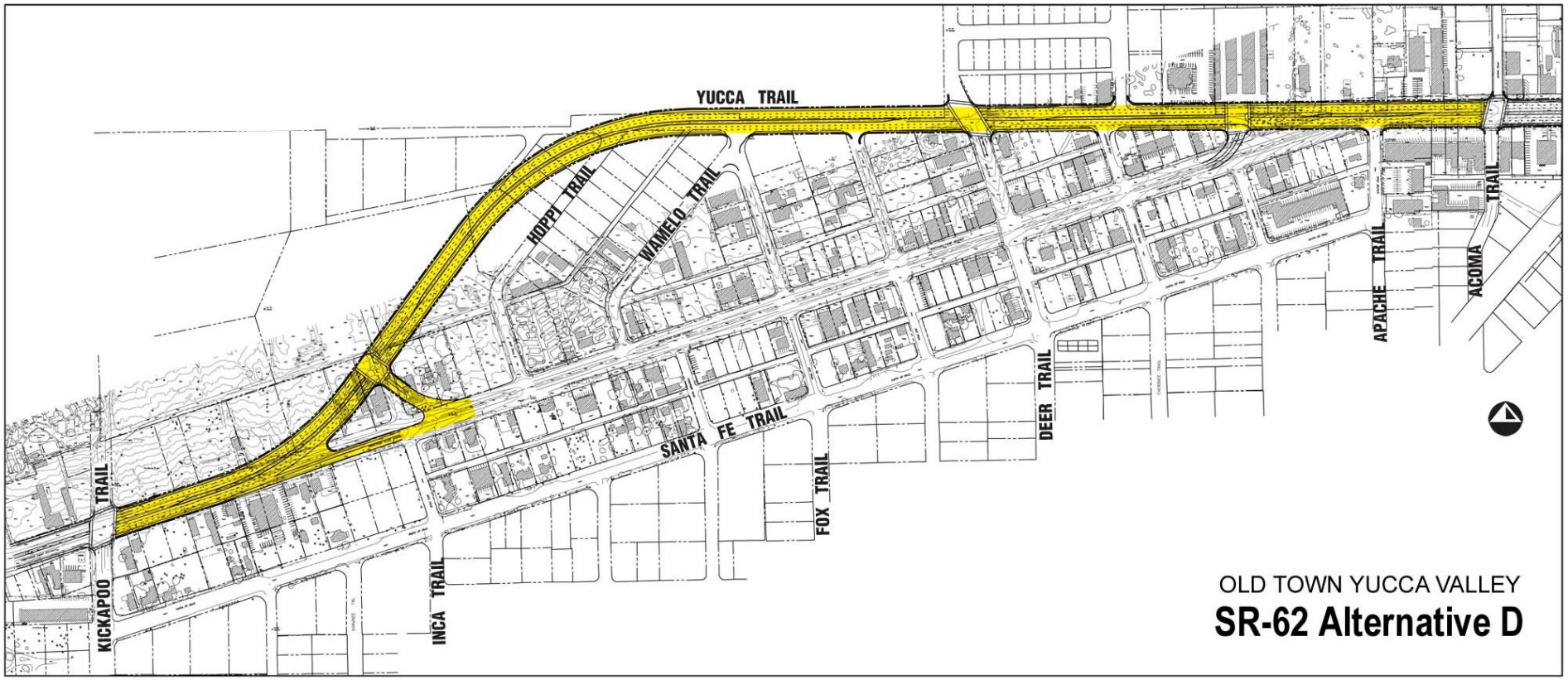

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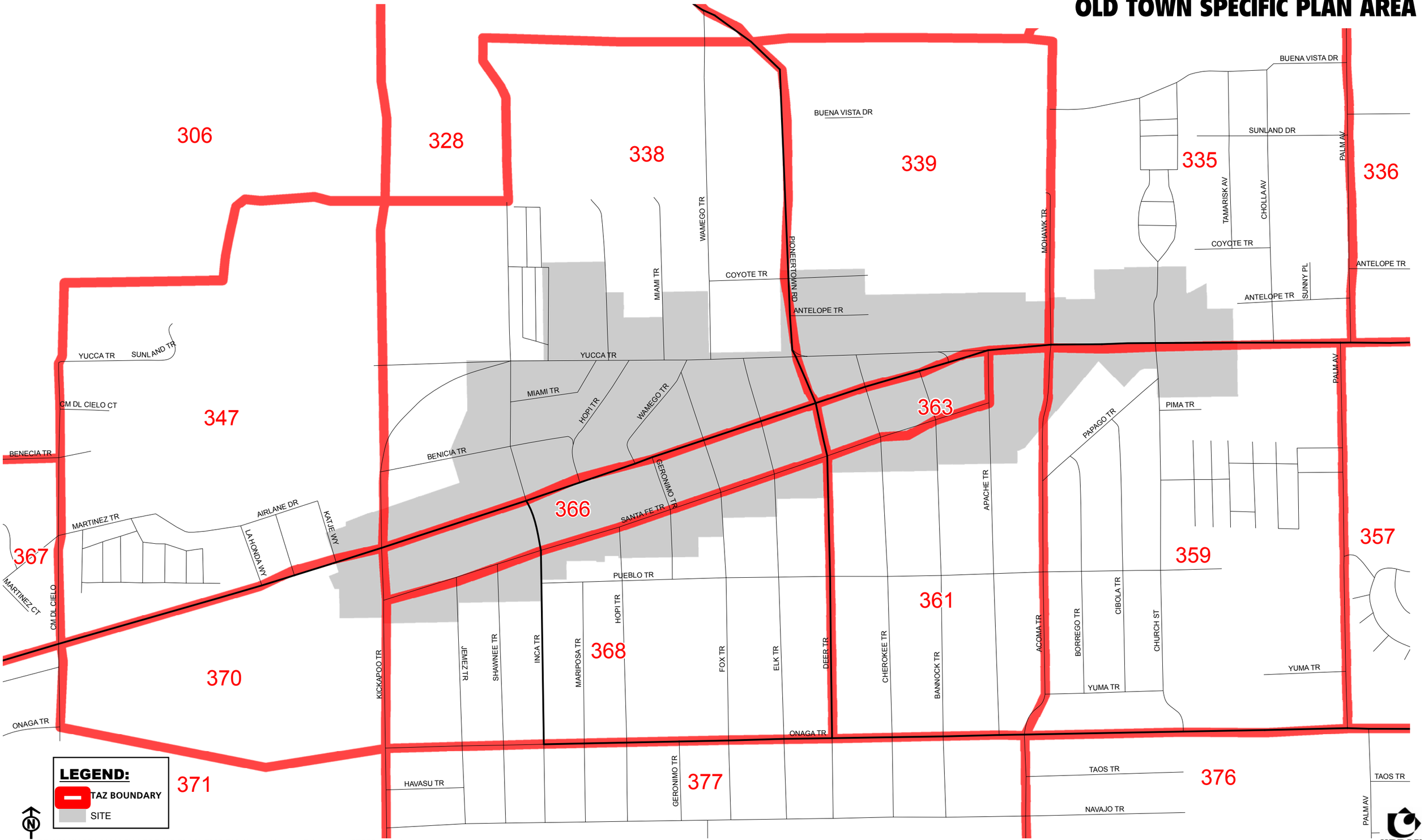
EXHIBIT 2-B

INITIAL MBTM TRAFFIC ANALYSIS ZONE (TAZ) STRUCTURE
OLD TOWN SPECIFIC PLAN AREA



circulation features (including the SR-62 realignment) for the proposed project under 2030 Horizon Year with project conditions. The refined MBTM TAZ structure is depicted on Exhibit 2-C. This refined TAZ structure was then used for both the Existing (baseline) and 2030 Horizon Year without project conditions, so that a comparison of the Old Town Specific Plan area traffic characteristics across analysis conditions would yield comparable results.

The Old Town Specific Plan area, with the refined TAZ structure, has been defined within the model in terms of socio-economic data (SED) for all conditions. SED by TAZ for 1994 and 2020 was provided by the Southern California Association of Governments (SCAG) during the MBTM development project completed by Urban Crossroads, Inc. staff in 1994. The SED was refined during the original model development effort to incorporate additional knowledge regarding housing and employment in the Morongo Basin. Final SED by TAZ used in the original version of the MBTM is included in Appendix D. Current regional SED forecasts have been obtained from SANBAG for the entire Morongo Basin area. Based on comparisons of the new regional data to the old MBTM data under Base Year conditions and Horizon Year conditions, the data in the MBTM is fairly similar and for the most part a little higher (and therefore conservative) than the current regional forecasts. The baseline SED from the MBTM was, therefore, used to develop the traffic characteristics of the existing land uses occupying the Old Town Specific Plan area.

Within the Old Town Specific Plan area, land use data has been provided for both the currently adopted General Plan and the proposed Specific Plan buildout conditions. For the modeling process, this land use data will be converted into SED. Land Use-to-SED conversion factors have been developed for this task, and are included in Table 2-2. Based on the housing densities (dwelling units per acre) established for the residential portions of the General Plan and proposed Specific Plan land use plans, it has been assumed that all residential portions will be multi-family dwelling units.

EXHIBIT 2-C

REFINED MBTM TRAFFIC ANALYSIS ZONE (TAZ) STRUCTURE
OLD TOWN SPECIFIC PLAN AREA

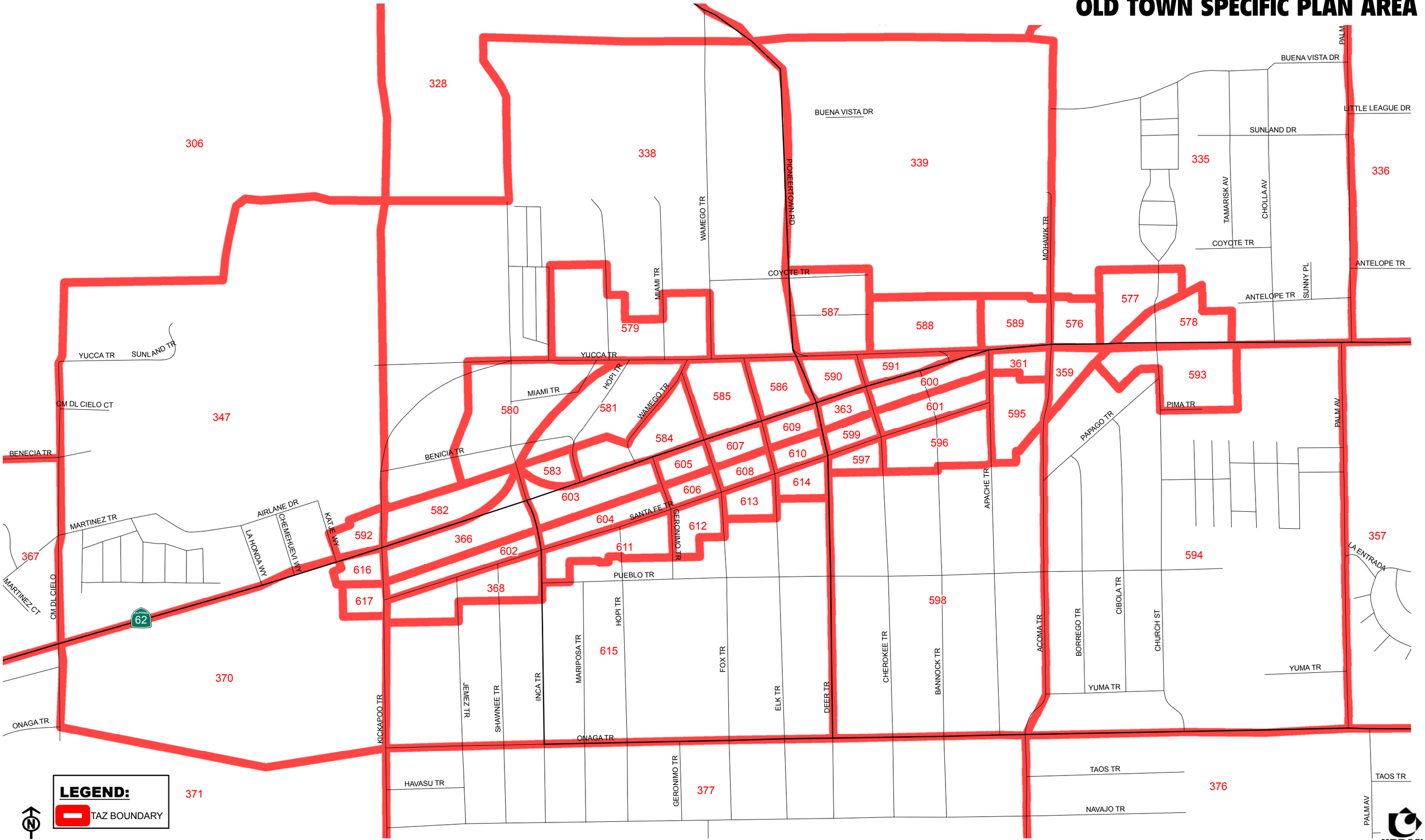


TABLE 2-2

LAND USE TO SOCIO-ECONOMIC DATA CONVERSION FACTORS

LAND USE CODE	LAND USE DESCRIPTION	UNITS	SFDU[1]	MFDU[2]	POP[3]	RE[4]	SE[5]	OE[6]	TE[7]
1	Single Family Residential	DU	1.000		3.170				
2	Multi Family Residential	DU		1.000	2.700				
3	Commercial	TSF				1.700	0.450	0.150	2.300
4	Community Industrial	TSF						1.000	1.000
5	Office Commercial	TSF					1.047	2.953	4.000
6	Open Space Recreation	AC				0.311	1.866		2.177
7	General Open Space	AC						0.004	0.004
8	Public	TSF						1.000	1.000
9	Apartment	DU		1.000	1.700	0.000	0.020	0.010	0.030
10	Hotel	RM				0.100	1.200	0.500	1.800

[1] Single Family Dwelling Unit (SFDU)

[2] Multi Family Dwelling Unit (MFDU)

[3] Population (POP)

[4] Retail Employment (RE)

[5] Service Employment (SE)

[6] Other Employment (OE)

[7] Total Employment (TE)

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Using the conversion factors shown in Table 2-2, the total General Plan and proposed Specific Plan SED for the Old Town area have been produced. Table 2-3 contains the results of this analysis, broken out by district. As expected, the proposed Specific Plan residential SED is generally higher, and non-residential SED generally lower, than the currently adopted General Plan SED.

Table 2-4 provides a comparison of the total Old Town area SED for existing, General Plan, and Specific Plan conditions. The Old Town Specific Plan results in a net increase of approximately 1,000 dwelling units, and an accompanying decrease in employment of around 1,000 employees. Retail employment is relatively unchanged, with a decrease of around 200 service employment and the remaining difference in the other employment category.

2.3 Project Traffic

The traffic related to the project has been calculated in accordance with the following accepted procedural steps:

- Trip Generation
- Trip Distribution
- Traffic Assignment

These steps are described in detail below.

2.3.1 Project Trip Generation

Trip generation has been calculated for the project by the Morongo Basin Transportation Model. Table 2-5 contains the results of this analysis. The project is projected to generate a net increase over existing 2005 conditions of 6,144 AM peak hour trips, 9,970 PM peak hour trips, and 107,463 daily trips. No credit has been taken in this calculation for the mixed-use nature of the development.

TABLE 2-3

SOCIO-ECONOMIC DATA (SED) SUMMARY

Old Town Specific Plan Area

OLD TOWN MIXED-USE DISTRICT SED VARIABLE	GENERAL PLAN QUANTITY	SPECIFIC PLAN QUANTITY	DIFFERENCE (SP-GP)	PERCENT CHANGE
Single Family Residential Dwelling Units	0	0	0	--[1]
Multiple Family Residential Dwelling Units	0	465	465	--[1]
Total Dwelling Units	0	465	465	--[1]
Other Employment	32	113	81	253%
Service Employment	95	342	247	260%
Retail Employment	357	1,291	934	262%
Total Employment	484	1,746	1,262	261%

OLD TOWN COMMERCIAL/RESIDENTIAL DISTRICT SED VARIABLE	GENERAL PLAN QUANTITY	SPECIFIC PLAN QUANTITY	DIFFERENCE (SP-GP)	PERCENT CHANGE
Single Family Residential Dwelling Units	0	0	0	--[1]
Multiple Family Residential Dwelling Units	11	413	402	3655%
Total Dwelling Units	11	413	402	3655%
Other Employment	1,726	1,086	-640	-37%
Service Employment	831	523	-308	-37%
Retail Employment	945	594	-351	-37%
Total Employment	3,502	2,203	-1,299	-37%

OLD TOWN INDUSTRIAL/COMMERCIAL DISTRICT SED VARIABLE	GENERAL PLAN QUANTITY	SPECIFIC PLAN QUANTITY	DIFFERENCE (SP-GP)	PERCENT CHANGE
Single Family Residential Dwelling Units	0	0	0	--[1]
Multiple Family Residential Dwelling Units	0	238	238	--[1]
Total Dwelling Units	0	238	238	--[1]
Other Employment	862	552	-310	-36%
Service Employment	0	0	0	--[1]
Retail Employment	0	0	0	--[1]
Total Employment	862	552	-310	-36%

OLD TOWN HIGHWAY COMMERCIAL SED VARIABLE	GENERAL PLAN QUANTITY	SPECIFIC PLAN QUANTITY	DIFFERENCE (SP-GP)	PERCENT CHANGE
Single Family Residential Dwelling Units	0	0	0	--[1]
Multiple Family Residential Dwelling Units	16	0	-16	-100%
Total Dwelling Units	16	0	-16	-100%
Other Employment	178	134	-44	-25%
Service Employment	537	399	-138	-26%
Retail Employment	2,029	1,513	-516	-25%
Total Employment	2,744	2,046	-698	-25%

[1] Can not divide by zero.

U:\UcJobs_03600-04000_03600\03653\Excel\[03653-03.xls]T 2-3

TABLE 2-4

OLD TOWN AREA SOCIO-ECONOMIC DATA (SED) COMPARISON

Buildout vs. Existing Conditions

SED VARIABLE	EXISTING QUANTITY	GENERAL PLAN			SPECIFIC PLAN		
		QUANTITY	DIFFERENCE (GP - EX)	PERCENT CHANGE	QUANTITY	DIFFERENCE (SP - EX)	PERCENT CHANGE
Single Family Residential Dwelling Units	155	0	-155	-100%	0	-155	-100%
Multiple Family Residential Dwelling Units	171	27	-144	-84%	1,116	945	553%
Total Dwelling Units	326	27	-299	-92%	1,116	790	242%
Other Employment	156	2,798	2,642	1694%	1,885	1,729	1108%
Service Employment	351	1,463	1,112	317%	1,264	913	260%
Retail Employment	153	3,331	3,178	2077%	3,398	3,245	2121%
Total Employment	660	7,592	6,932	1050%	6,547	5,887	892%

TABLE 2-5

OLD TOWN AREA TRIP GENERATION SUMMARY

SCENARIO	AM PEAK HOUR			PM PEAK HOUR			DAILY TRIPS
	INBOUND	OUTBOUND	TOTAL	INBOUND	OUTBOUND	TOTAL	
EXISTING	537	309	846	603	757	1,360	14,681
GENERAL PLAN WITH PROJECT	4,870	2,120	6,990	4,748	6,581	11,329	122,144
PROJECT ONLY	4,333	1,811	6,144	4,145	5,824	9,969	107,463
% GROWTH	807%	586%	726%	687%	769%	733%	732%

U:\UcJobs_03600-04000_03600\03653\Excel\[TGsummary.xls]Sheet1

Internal capture rates for the project have been extracted directly from the model for the AM peak hour, PM peak hour, and daily timeframes are 22.8%, 24.2%, and 24.3%, respectively. The pedestrian-friendly environment is expected to further reduce vehicle traffic, but no additional reduction has been assumed in this analysis.

2.3.2 Project Trip Distribution and Assignment

The 2030 Horizon Year project trip distribution and assignment process represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of surrounding uses, and the proximity to the regional highway/freeway system. The RSA 33 - Morongo Basin Transportation Model (MBTM) has been used to evaluate the distribution and likely travel routes of the local traffic. A select zone (trip distribution) analysis for the Old Town Yucca Valley Specific Plan development was performed using the model for the Horizon Year.

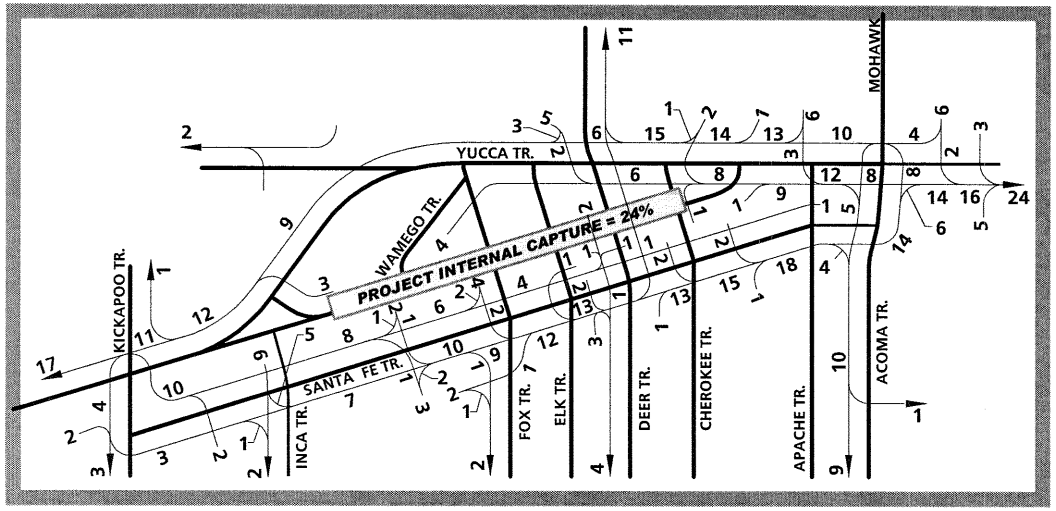
The project traffic distribution pattern is shown on Exhibit 2-D. As illustrated on Exhibit 2-D, approximately 17 percent of the project-related traffic will be distributed to/from the west of the site via SR-62, with 11 percent oriented to/from the north on Pioneertown Road, 24 percent to/from the east on Yucca Trail, 1 percent to/from the north on Kickapoo Trail, 2 percent to/from the west on Yucca Trail, 3 percent to/from the south on Kickapoo Trail, 2 percent to/from the south on Fox Trail and on Inca Trail, 4 percent to/from the south on Deer Trail, and 10 percent to/from the south on Acoma Trail.

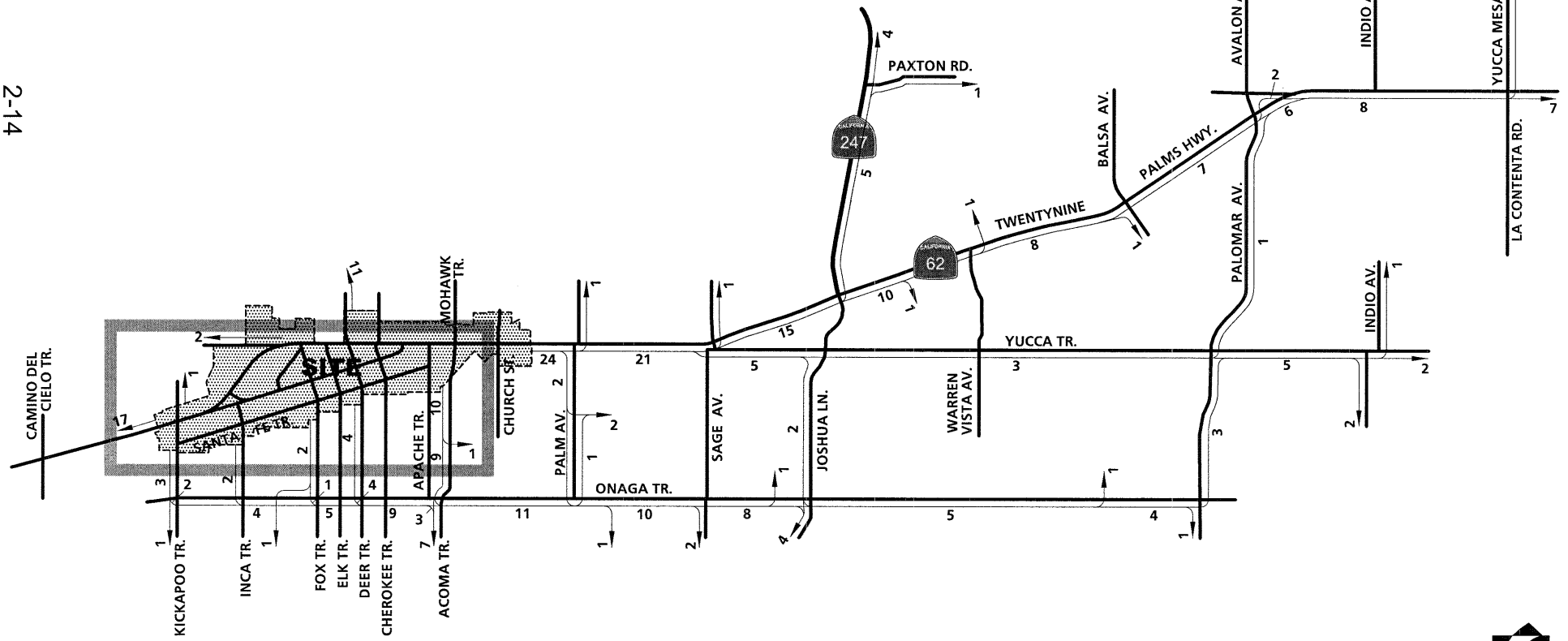
2.3.3 Project Only Traffic Volume Forecasts

The Old Town Yucca Valley Specific Plan project only traffic forecasts have been generated by calculating the difference between future with project

EXHIBIT 2-D

BUILDOUT PROJECT TRIP DISTRIBUTION





N

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forecast volumes and existing model volumes. The project traffic volumes are the criteria determining the limits of the required CMP Horizon Year (2030) analysis. The CMP states that any CMP roadway link carrying 50 or more two-way project trips or any CMP freeway link carrying 100 or more two-way project trips during the AM or PM peak hour must be analyzed to ensure that no CMP deficiencies are anticipated within the study area.

Exhibit 2-E illustrates the 2030 CMP project only traffic contribution test volumes (PM peak hour) for the proposed mixed-use project. Due to the fact that the project PM peak hour trip generation is higher than the project AM peak hour trip generation, only the PM peak hour volumes have been examined for the CMP test. The only CMP intersection within 5 miles of the project is Old Woman Springs Road (SR-247) at Twentynine Palms Highway (SR-62). The CMP criterion is satisfied at this location, so it has been analyzed. Additional intersections have been analyzed pursuant to direction from Town of Yucca Valley staff. The additional analysis locations along SR-62 and SR-247 (CMP roadways), has also been completed in lieu of segment level analysis, consistent with CMP guidelines. Exhibit 2-F depicts the resulting intersection analysis locations, based upon the CMP analysis and Town of Yucca Valley staff direction. The intersection analysis locations include the following:

Camino del Cielo Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Kickapoo Trail (NS) at:

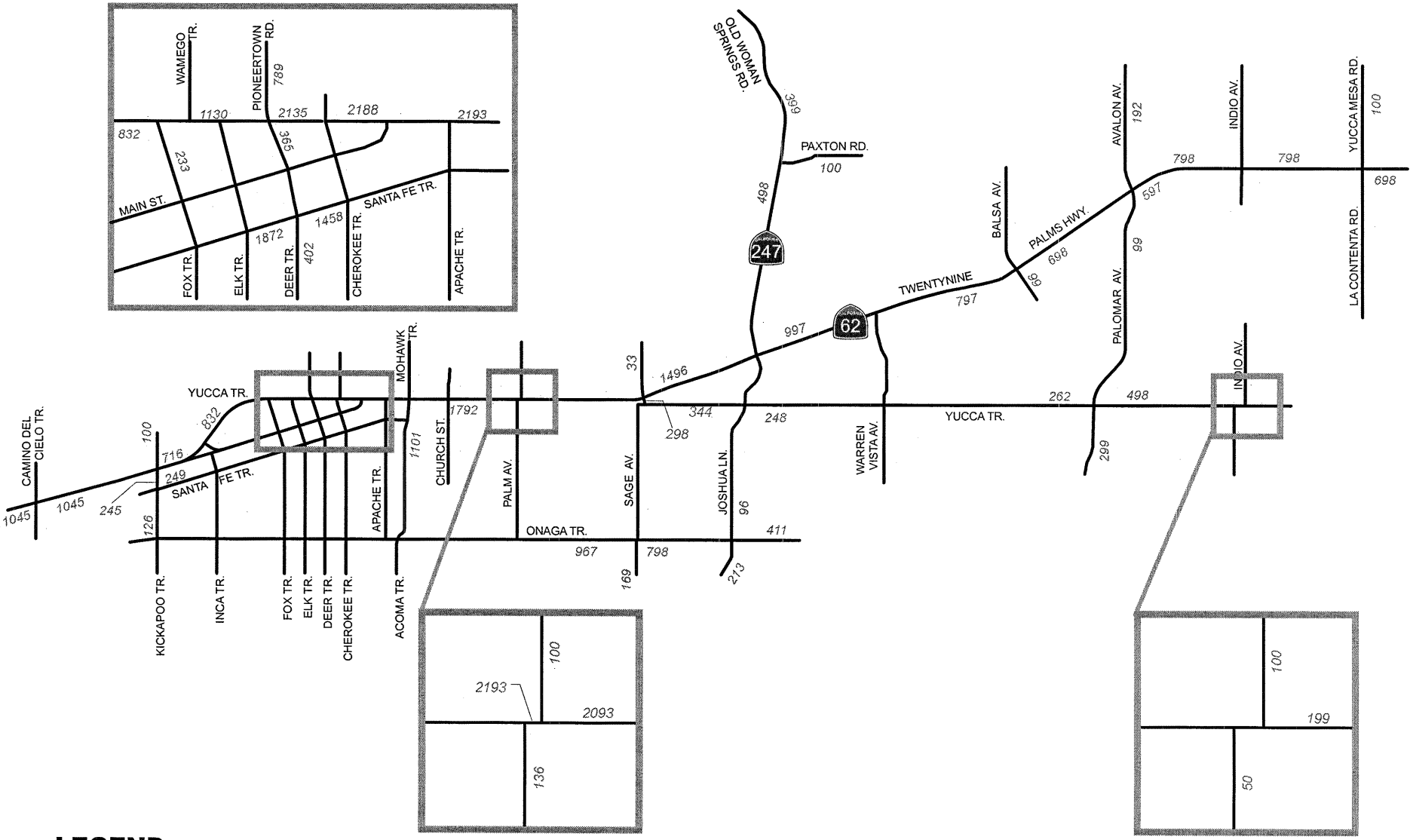
- Twentynine Palms Highway (SR-62) (EW)
- Santa Fe Trail (EW)

Inca Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

EXHIBIT 2-E

2030 HORIZON YEAR CMP PROJECT ONLY
TRAFFIC CONTRIBUTION TEST VOLUMES (PM PEAK HOUR)



LEGEND:

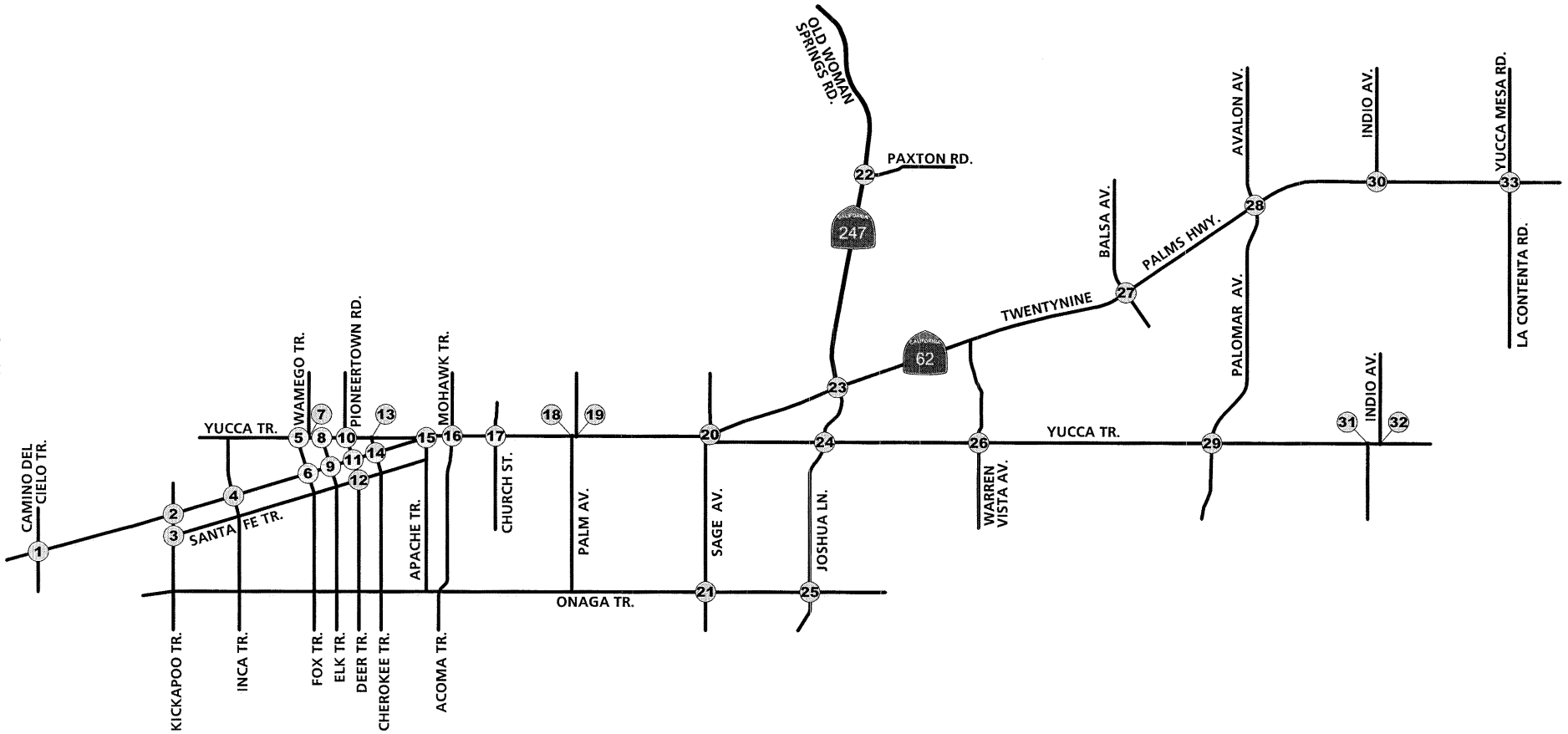
100 = VEHICLES PER DAY

N

URBAN CROSSROADS

EXHIBIT 2-F

INTERSECTION ANALYSIS LOCATIONS



LEGEND:

(33) = INTERSECTION ANALYSIS LOCATION

N

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Fox Trail (NS) at:

- Yucca Trail (EW)
- Twentynine Palms Highway (SR-62) (EW)

Wamego Trail (NS) at:

- Yucca Trail (EW)

Elk Trail (NS) at:

- Yucca Trail (EW)
- Twentynine Palms Highway (SR-62) (EW)

Pioneertown Road (NS) at:

- Yucca Trail (EW)

Pioneertown Road/Deer Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Deer Trail (NS) at:

- Santa Fe Trail (EW)

Cherokee Trail (South) (NS) at:

- Yucca Trail (EW)

Cherokee Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Apache Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Acoma Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Church Street (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Palm Avenue (South) (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Palm Avenue (North) (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Sage Avenue (NS) at:

- Twentynine Palms Highway (SR-62) (EW)
- Onaga Trail (EW)

Old Woman Springs Road (SR-247) (NS) at:

- Paxton Road (EW)

Old Woman Springs Road (SR-247)/Joshua Lane (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Joshua Lane (NS) at:

- Yucca Trail (EW)
- Onaga Trail (EW)

Warren Vista Avenue (NS) at:

- Yucca Trail (EW)

Balsa Avenue (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Avalon Avenue (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Palomar Avenue (NS) at:

- Yucca Trail (EW)

Indio Avenue (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Indio Avenue (South) (NS) at:

- Yucca Trail (EW)

Indio Avenue (North) (NS) at:

- Yucca Trail (EW)

Yucca Mesa Road/La Contenta Road (NS) at:

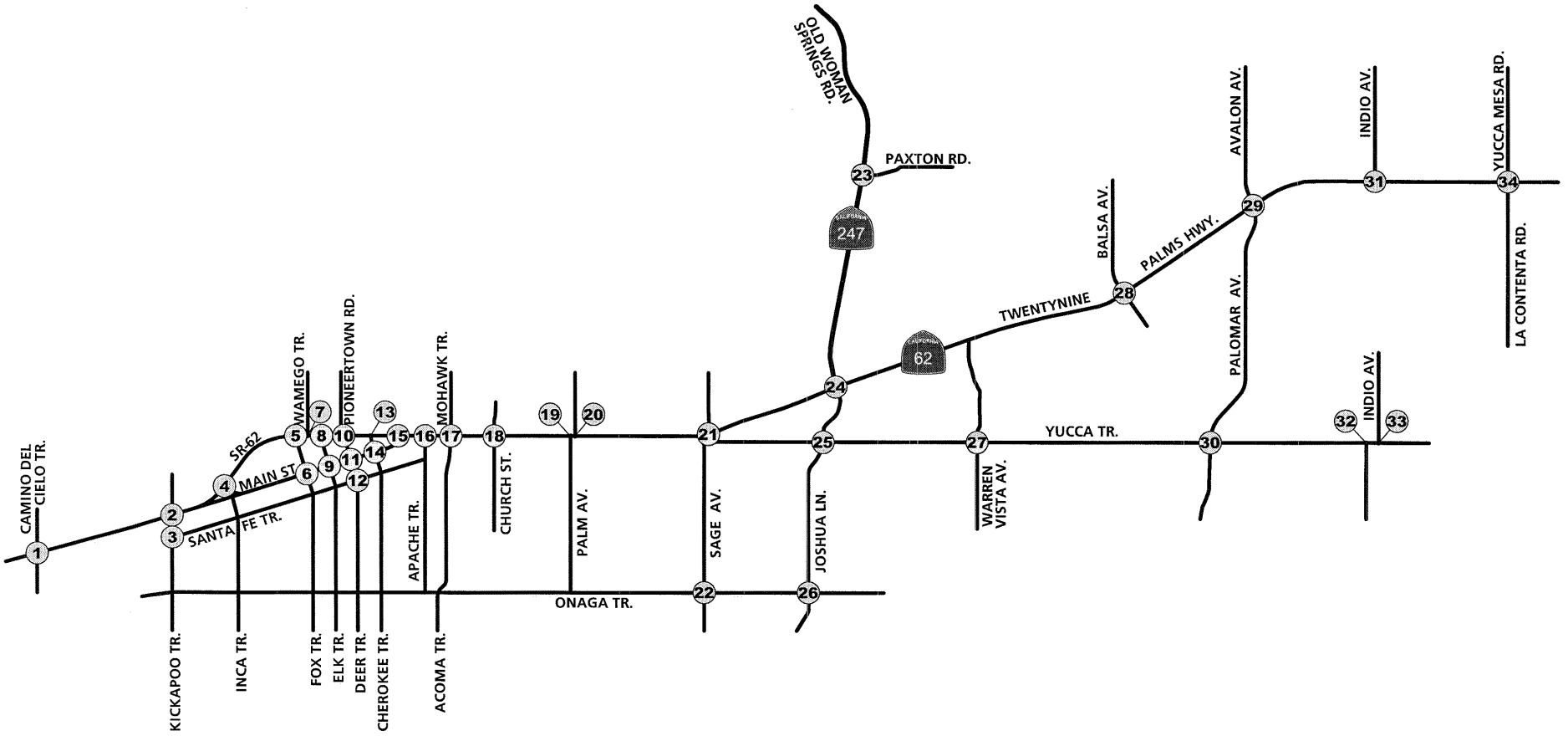
- Twentynine Palms Highway (SR-62) (EW)

Exhibit 2-G depicts the resulting intersection analysis location with the proposed SR-62 realignment. Due to the realignment and the proposed Old Town Yucca Valley Specific Plan, name and geometry changes are assumed for intersections within the Old Town area. The intersection of Inca Trail at Main Street has been removed, as it is no longer a primary access location for the Old Town area. The intersection of Main Street (Western Gateway and Eastern Gateway) with SR-62 have been added, resulting in a total of 34 intersection analysis locations under 2030 Horizon Year with project conditions.

The 2030 Horizon Year project only ADT volumes are presented on Exhibit 2-H. The 2030 Horizon Year project only AM and PM peak hour intersection turning movement volumes are depicted on Exhibits 2-I and 2-J, respectively.

EXHIBIT 2-G

INTERSECTION ANALYSIS LOCATIONS WITH PROPOSED STATE ROUTE 62 REALIGNMENT



LEGEND:

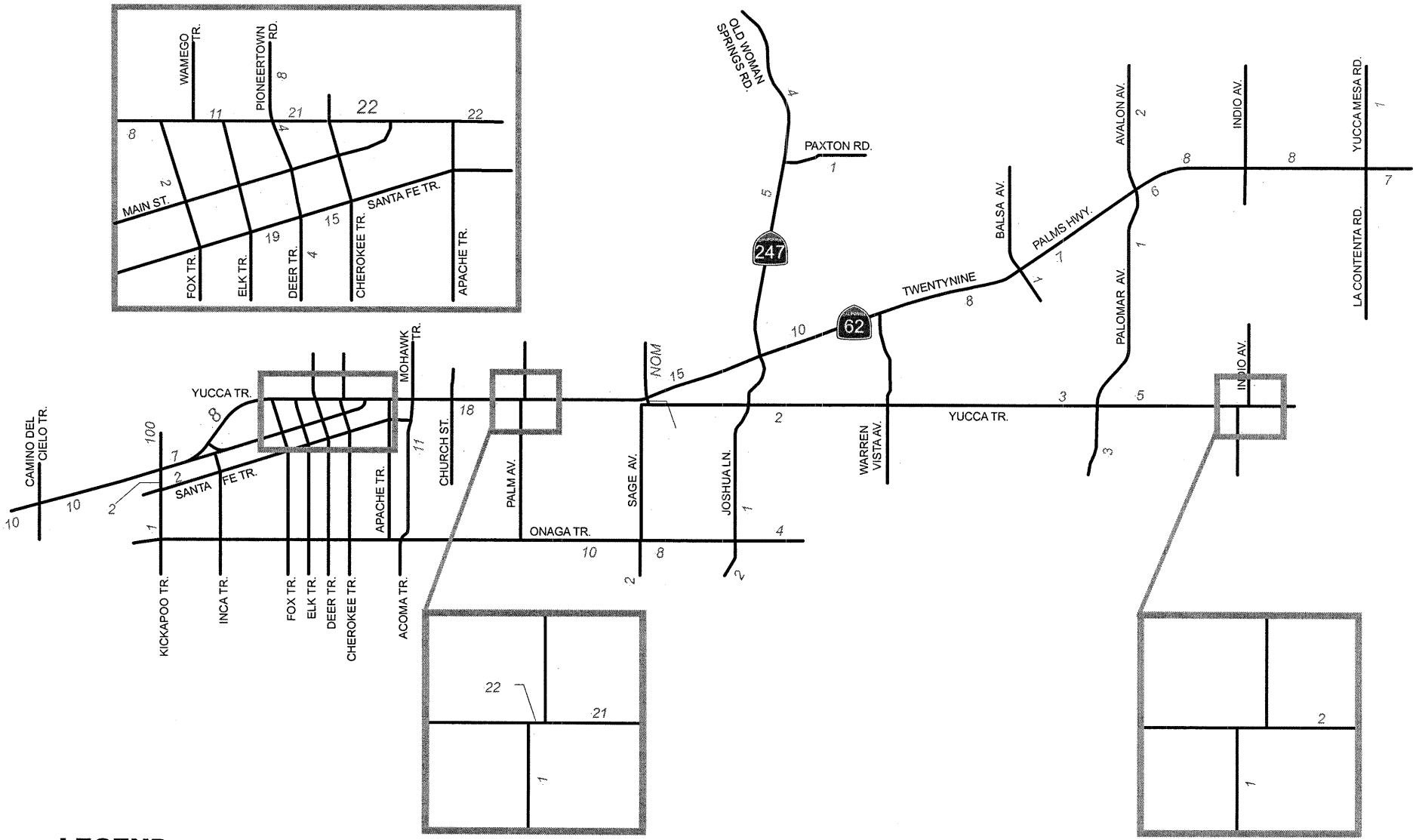
34 = INTERSECTION ANALYSIS LOCATION

N

URBAN CROSSROADS

EXHIBIT 2-H

PROJECT ONLY
AVERAGE DAILY TRAFFIC (ADT)



LEGEND:

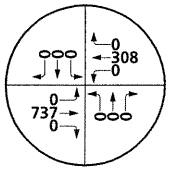
10 = VEHICLES PER DAY (1000's)
NOM = LESS THAN 500

N

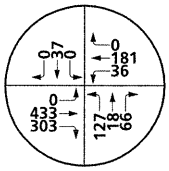
URBAN CROSSROADS

EXHIBIT 2-I

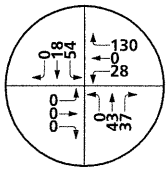
PROJECT ONLY
AM PEAK HOUR INTERSECTION VOLUMES



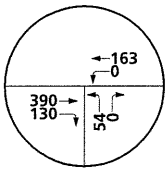
1
CAMINO DEL CIELO TR. & SR-62



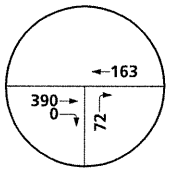
2
KICKAPOO TR. & SR-62



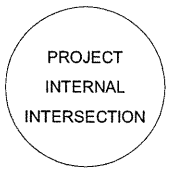
3
KICKAPOO TR. & SANTA FE TR.



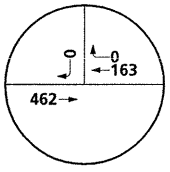
4
MAIN ST. (WESTERN GATEWAY) & SR-62



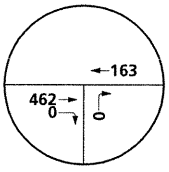
5
FOX TR. & SR-62



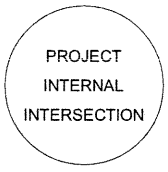
6
FOX TR. & MAIN ST.



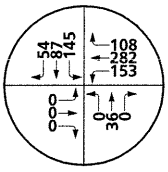
7
WAMEGO TR. & SR-62



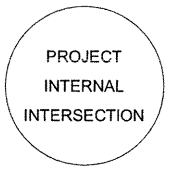
8
ELK TR. & SR-62



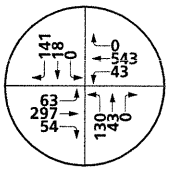
9
ELK TR. & MAIN ST.



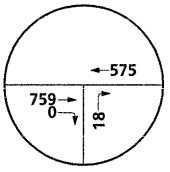
10
PIONEERTOWN RD. & SR-62



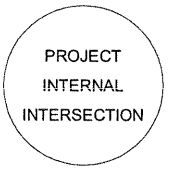
11
PIONEERTOWN RD./ DEER TR. & MAIN ST.



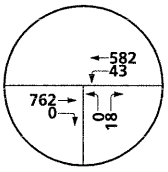
12
DEER TR. & SANTA FE TR.



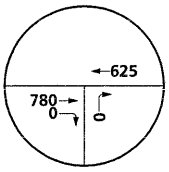
13
CHEROKEE TR. (SOUTH) & SR-62



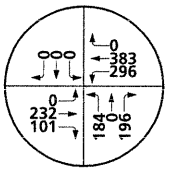
14
CHEROKEE TR. & MAIN ST.



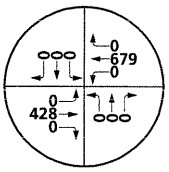
15
MAIN ST. (EASTERN GATEWAY) & SR-62



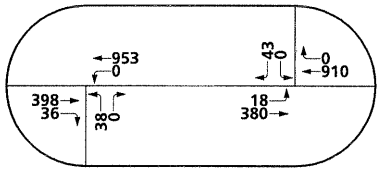
16
APACHE TR. & SR-62



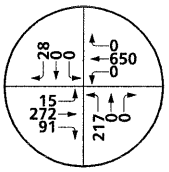
17
MOHAWK TR./ ACOMA TR. & SR-62



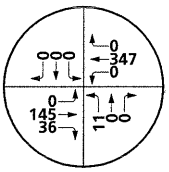
18
CHURCH ST. & SR-62



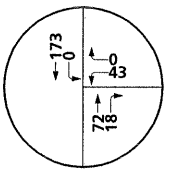
19, 20
PALM AV. (SOUTH AND NORTH) & SR-62



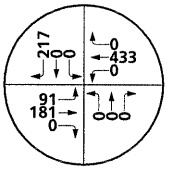
21
SAGE AV. & SR-62



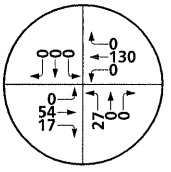
22
SAGE AV. & ONAGA TR.



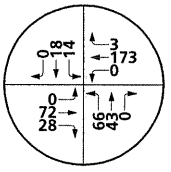
23
OLD WOMAN SPRINGS RD. (SR-247) & PAXTON RD.



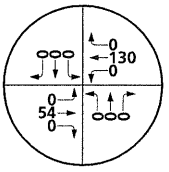
24
OLD WOMAN SPRINGS RD. (SR-247)/JOSHUA LN. & SR-62



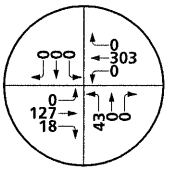
25
JOSHUA LN. & YUCCA TR.



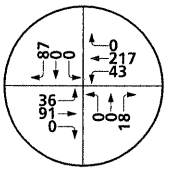
26
JOSHUA LN. & ONAGA TR.



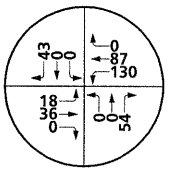
27
WARREN VISTA AV. & YUCCA TR.



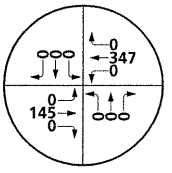
28
BALSA AV. & SR-62



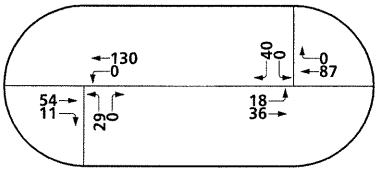
29
AVALON AV. & SR-62



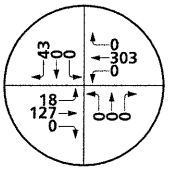
30
PALOMAR AV. & YUCCA TR.



31
INDIO AV. & SR-62



32, 33
INDIO AV. (SOUTH AND NORTH) & YUCCA TR.



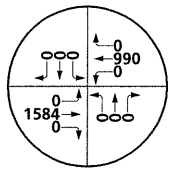
34
YUCCA MESA RD./LA CONTENTA RD. & SR-62

N

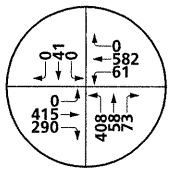
URBAN CROSSROADS

EXHIBIT 2-J

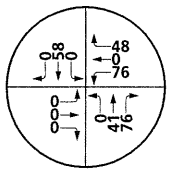
PROJECT ONLY
PM PEAK HOUR INTERSECTION VOLUMES



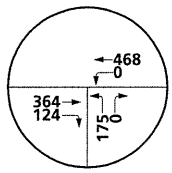
1
CAMINO DEL CIELO TR. & SR-62



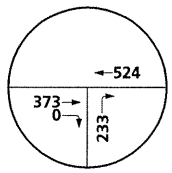
2
KICKAPOO TR. & SR-62



3
KICKAPOO TR. & SANTA FE TR.



4
MAIN ST. (WESTERN GATEWAY) & SR-62



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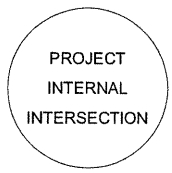
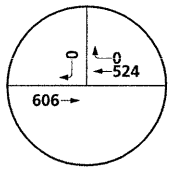
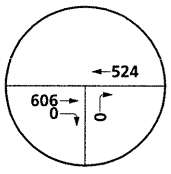
FOX TR. & SR-62



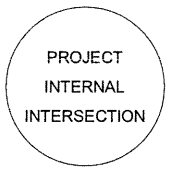
6
FOX TR. & MAIN ST.



7
WAMEGO TR. & SR-62



8
ELK TR. & SR-62



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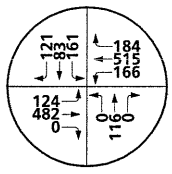
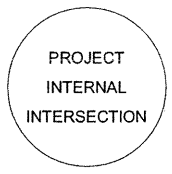
ELK TR. & MAIN ST.



10
PIONEERTOWN RD. & SR-62



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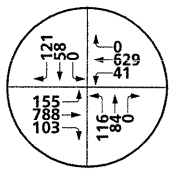
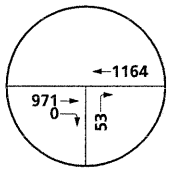
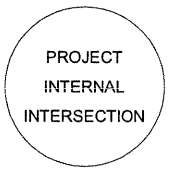
PIONEERTOWN RD./ DEER TR. & MAIN ST.



12
DEER TR. & SANTA FE TR.



13
CHEROKEE TR. (SOUTH) & SR-62



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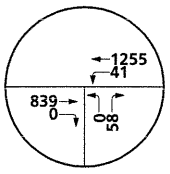
CHEROKEE TR. & MAIN ST.



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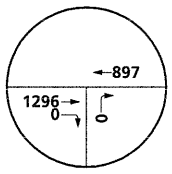
MAIN ST. (EASTERN GATEWAY) & SR-62



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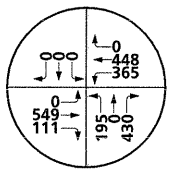
APACHE TR. & SR-62



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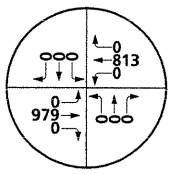
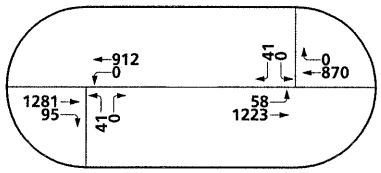
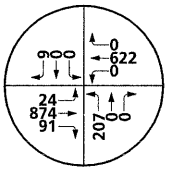
MOHAWK TR./ ACOMA TR. & SR-62



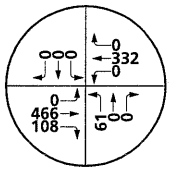
18
CHURCH ST. & SR-62



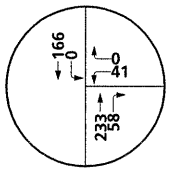
19, 20
PALM AV. (SOUTH AND NORTH) & SR-62



21
SAGE AV. & SR-62



22
SAGE AV. & ONAGA TR.



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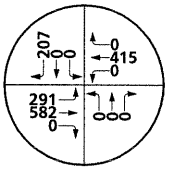
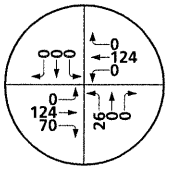
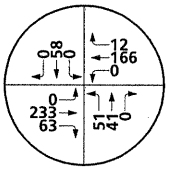
OLD WOMAN SPRINGS RD. (SR-247) & PAXTON RD.



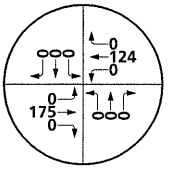
24
OLD WOMAN SPRINGS RD. (SR-247)/JOSHUA LN. & SR-62



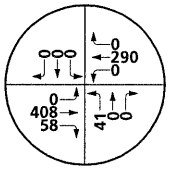
25
JOSHUA LN. & YUCCA TR.



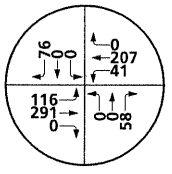
26
JOSHUA LN. & ONAGA TR.



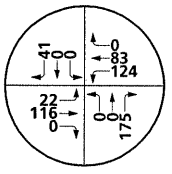
27
WARREN VISTA AV. & YUCCA TR.



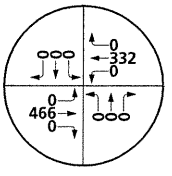
28
BALSA AV. & SR-62



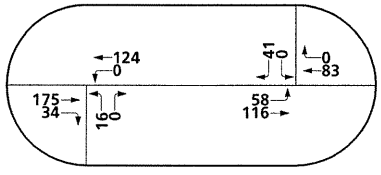
29
AVALON AV. & SR-62



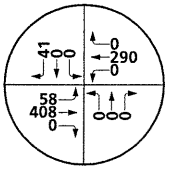
30
PALOMAR AV. & YUCCA TR.



31
INDIO AV. & SR-62



32, 33
INDIO AV. (SOUTH AND NORTH) & YUCCA TR.



34
YUCCA MESA RD./LA CONTENTA RD. & SR-62

N

3.0 EXISTING CONDITIONS

This section of the report summarizes existing roadway and traffic conditions in the study area. All CMP Horizon Year (2030) analysis locations which exist today have been analyzed. The number of through travel lanes for existing roadways and intersection controls are presented, along with existing traffic count data collected for this study. This data was used to analyze existing traffic operations in the study area. Existing plans for roadway improvements are also described in this section.

3.1 Existing Roadway System and Daily Traffic Volumes

The number of through travel lanes for existing roadways and existing intersection controls within the study area are presented on Exhibit 3-A. Roadway median treatments are also depicted on Exhibit 3-A. A divided roadway has a median that is either painted or physically separated (raised concrete island or curbs). Exhibit 3-B depicts the current average daily traffic (ADT) volumes in the study area. Existing ADT volumes have been obtained from the latest automatic traffic recorder counts (see Appendix A) or have been estimated by factoring up peak hour counts conducted for Urban Crossroads, Inc. using the following formula for each intersection leg:

(AM Peak Hour + PM Peak Hour Intersection Leg Volumes) / (6.2% + 7.9%) = Daily Leg Volume

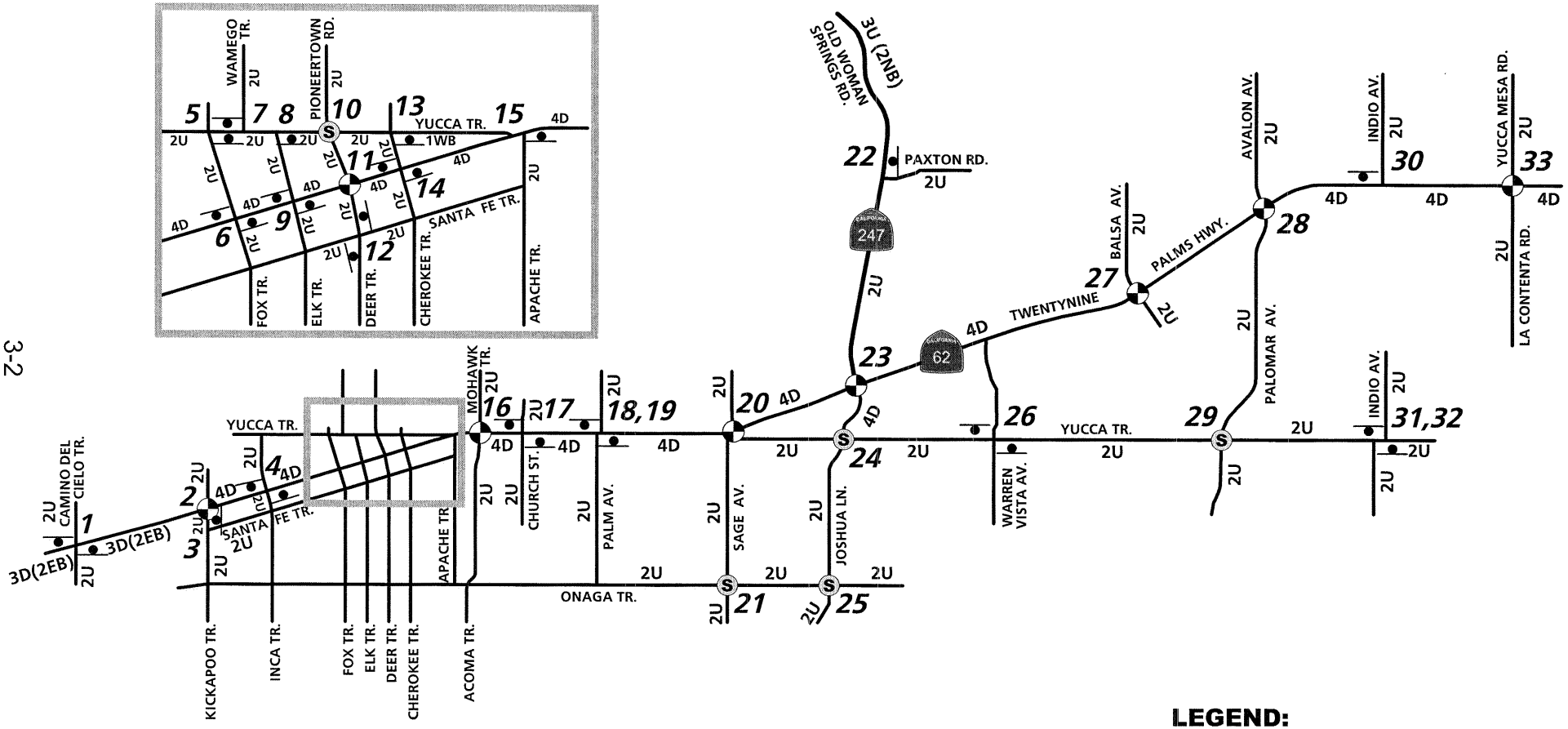
In the above formula, the constants of 6.2% and 7.9% are calculated AM and PM Peak Hour to ADT ratios based on the actual count data collected and included in Appendix A.

3.2 Existing Peak Hour Traffic Volumes

The existing AM and PM peak hour intersection turning movement volumes are presented on Exhibits 3-C and 3-D, respectively. Existing intersection level of

EXHIBIT 3-A

EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS (PAGE 1 OF 2)



LEGEND:

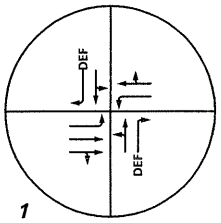
- = TRAFFIC SIGNAL
- (S) = ALL WAY STOP
- = STOP SIGN
- 4 = NUMBER OF LANES
- D = DIVIDED
- U = UNDIVIDED
- 33 = INTERSECTION NUMBER

N

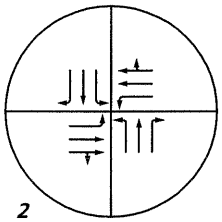
URBAN CROSSROADS

EXHIBIT 3-A

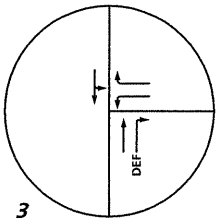
EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS (PAGE 2 OF 2)



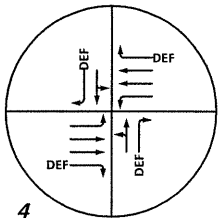
1
CAMINO DEL CIELO TR. & TWENTYNINE PALMS HWY. (SR-62)



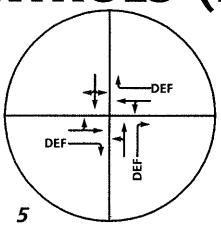
2
KICKAPOO TR. & TWENTYNINE PALMS HWY. (SR-62)



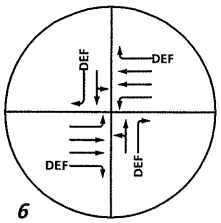
3
KICKAPOO TR. & SANTA FE TR.



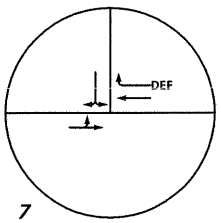
4
INCA TR. & TWENTYNINE PALMS HWY. (SR-62)



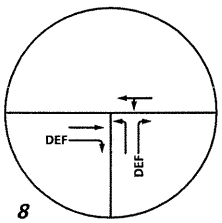
5
FOX TR. & YUCCA TR.



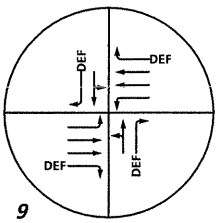
6
FOX TR. & TWENTYNINE PALMS HWY. (SR-62)



7
WAMEGO TR. & YUCCA TR.



8
ELK TR. & YUCCA TR.



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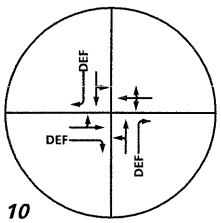
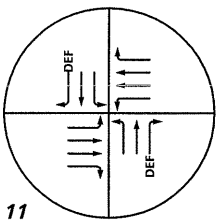
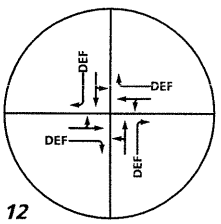
ELK TR. & TWENTYNINE PALMS HWY. (SR-62)



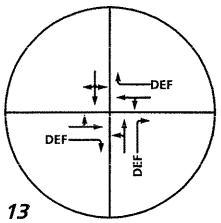
10
PIONEERTOWN RD. & YUCCA TR.



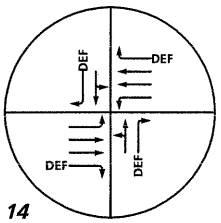
11
PIONEERTOWN RD./ DEER TR. & TWENTYNINE PALMS HWY. (SR-62)



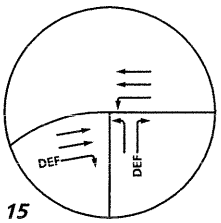
12
DEER TR. & SANTA FE TR.



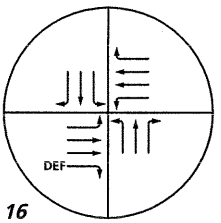
13
CHEROKEE TR. (SOUTH) & YUCCA TR.



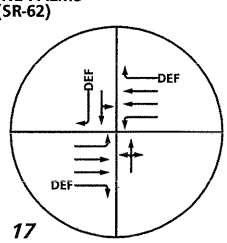
14
CHEROKEE TR. & TWENTYNINE PALMS HWY. (SR-62)



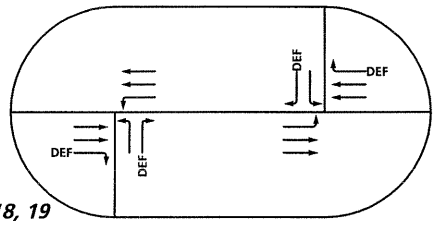
15
APACHE TR. & TWENTYNINE PALMS HWY. (SR-62)



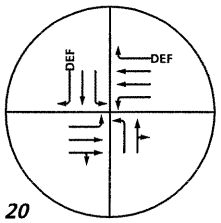
16
MOHAWK TR./ ACOMA TR. & TWENTYNINE PALMS HWY. (SR-62)



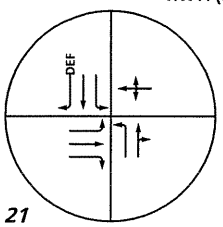
17
CHURCH ST. & TWENTYNINE PALMS HWY. (SR-62)



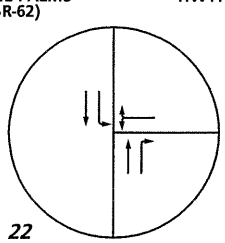
18, 19
PALM AV. (SOUTH AND NORTH) & TWENTYNINE PALMS HWY. (SR-62)



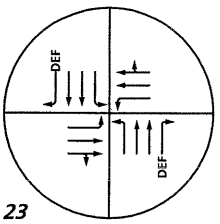
20
SAGE AV. & TWENTYNINE PALMS HWY. (SR-62)



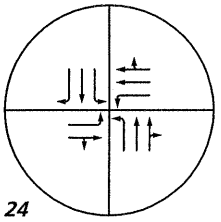
21
SAGE AV. & ONAGA TR.



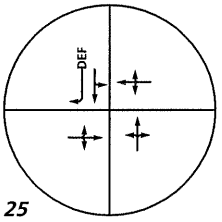
22
OLD WOMAN SPRINGS RD. (SR-247) & PAXTON RD.



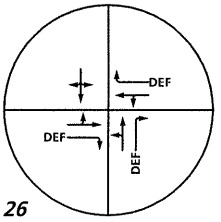
23
OLD WOMAN SPRINGS RD. (SR-247)/JOSHUA LN. & TWENTYNINE PALMS HWY. (SR-62)



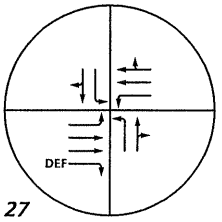
24
JOSHUA LN. & YUCCA TR.



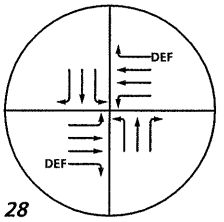
25
JOSHUA LN. & ONAGA TR.



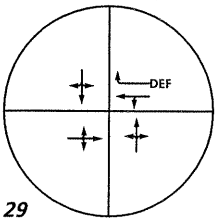
26
WARREN VISTA AV. & YUCCA TR.



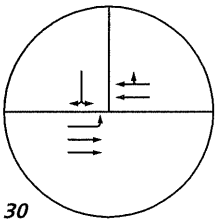
27
BALSA AV. & TWENTYNINE PALMS HWY. (SR-62)



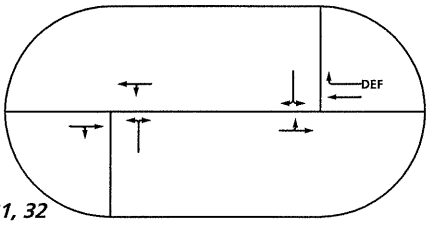
28
AVALON AV. & TWENTYNINE PALMS HWY. (SR-62)



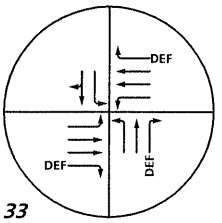
29
PALOMAR AV. & YUCCA TR.



30
INDIO AV. & TWENTYNINE PALMS HWY. (SR-62)



31, 32
INDIO AV. (SOUTH AND NORTH) & YUCCA TR.



33
YUCCA MESA RD./LA CONTENTA RD. & TWENTYNINE PALMS HWY. (SR-62)

LEGEND:

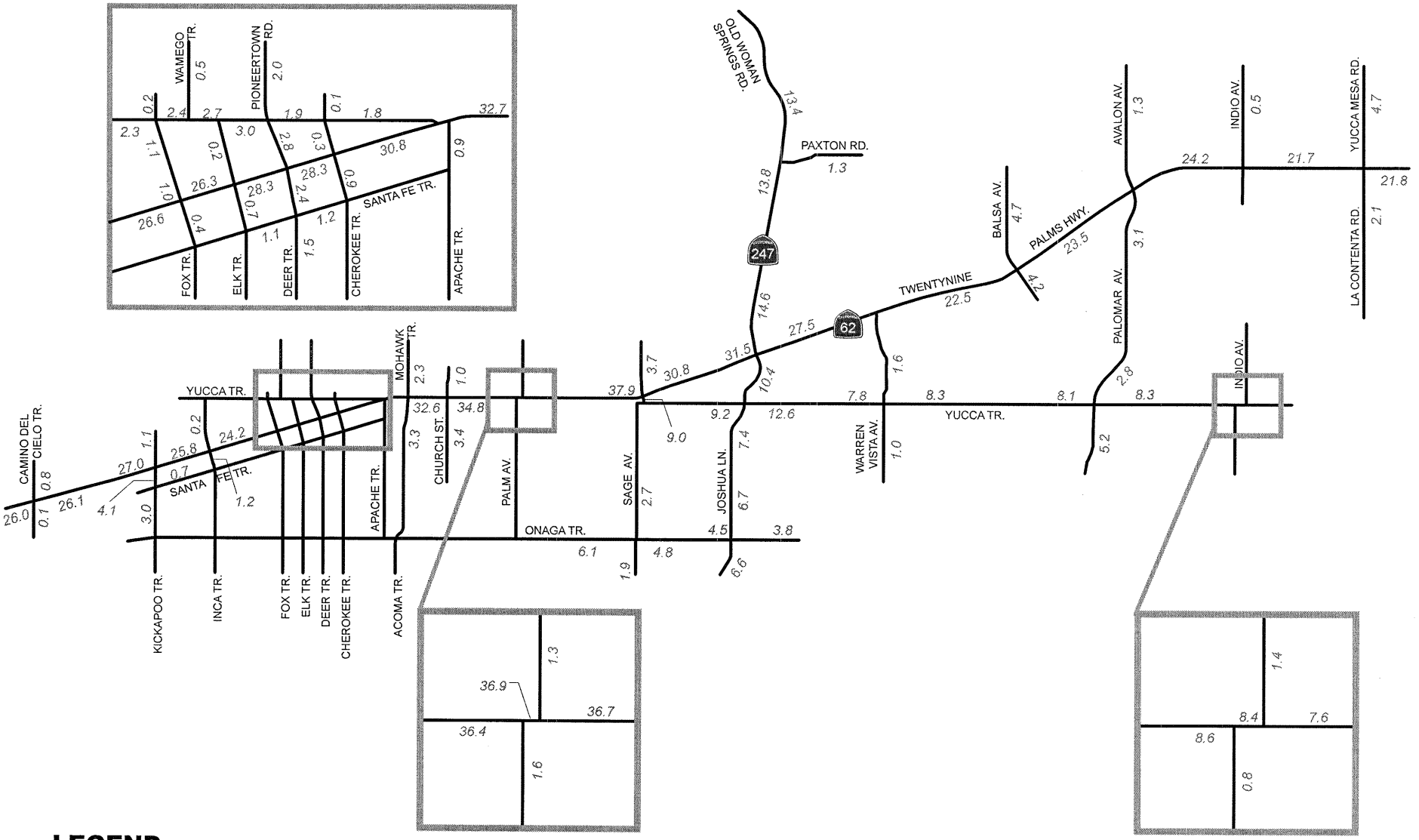
DEF = DEFACTO RIGHT TURN LANE

N

URBAN CROSSROADS

EXHIBIT 3-B

EXISTING AVERAGE DAILY TRAFFIC (ADT)



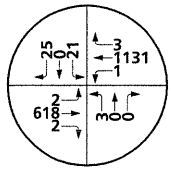
LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

URBAN CROSSROADS

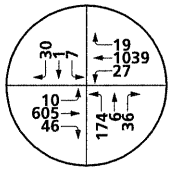
EXHIBIT 3-C

EXISTING AM PEAK HOUR INTERSECTION VOLUMES (PCEs)



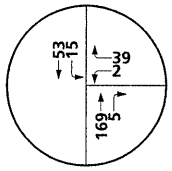
1

CAMINO DEL CIELO TR. & TWENTYNINE PALMS HWY. (SR-62)



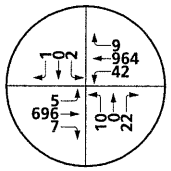
2

KICKAPOO TR. & TWENTYNINE PALMS HWY. (SR-62)



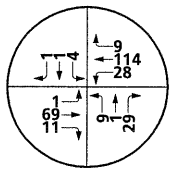
3

KICKAPOO TR. & SANTA FE TR.



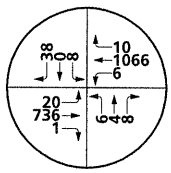
4

INCA TR. & TWENTYNINE PALMS HWY. (SR-62)



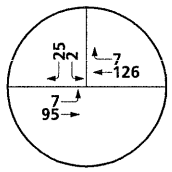
5

FOX TR. & YUCCA TR.



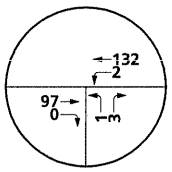
6

FOX TR. & TWENTYNINE PALMS HWY. (SR-62)



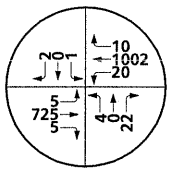
7

WAMEGO TR. & YUCCA TR.



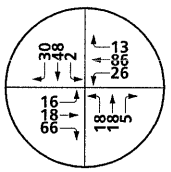
8

ELK TR. & YUCCA TR.



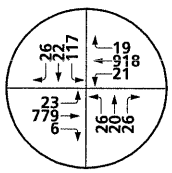
9

ELK TR. & TWENTYNINE PALMS HWY. (SR-62)



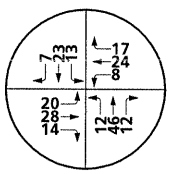
10

PIONEERTOWN RD. & YUCCA TR.



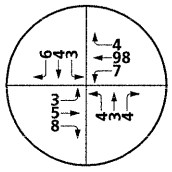
11

PIONEERTOWN RD./ DEER TR. & TWENTYNINE PALMS HWY. (SR-62)



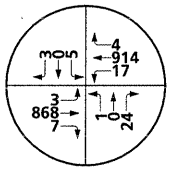
12

DEER TR. & SANTA FE TR.



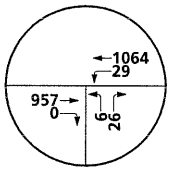
13

CHEROKEE TR. (SOUTH) & YUCCA TR.



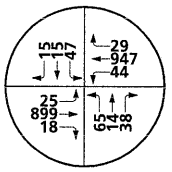
14

CHEROKEE TR. & TWENTYNINE PALMS HWY. (SR-62)



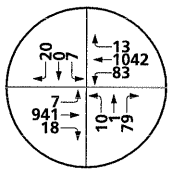
15

APACHE TR. & TWENTYNINE PALMS HWY. (SR-62)



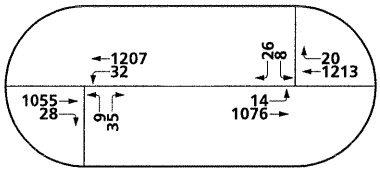
16

MOHAWK TR./ ACOMA TR. & TWENTYNINE PALMS HWY. (SR-62)



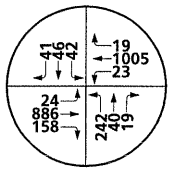
17

CHURCH ST. & TWENTYNINE PALMS HWY. (SR-62)



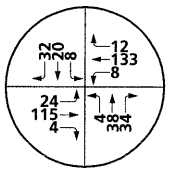
18, 19

PALM AV. (SOUTH AND NORTH) & TWENTYNINE PALMS HWY. (SR-62)



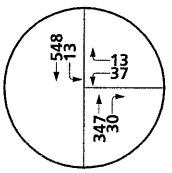
20

SAGE AV. & TWENTYNINE PALMS HWY. (SR-62)



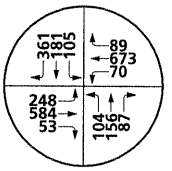
21

SAGE AV. & ONAGA TR.



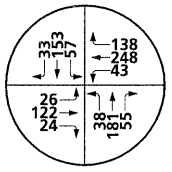
22

OLD WOMAN SPRINGS RD. (SR-247) & PAXTON RD.



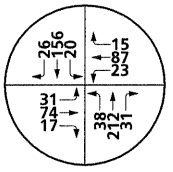
23

OLD WOMAN SPRINGS RD. (SR-247)/JOSHUA LN. & TWENTYNINE PALMS HWY. (SR-62)



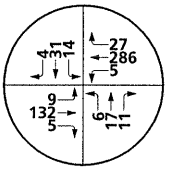
24

JOSHUA LN. & YUCCA TR.



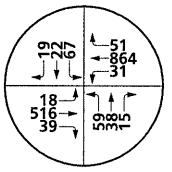
25

JOSHUA LN. & ONAGA TR.



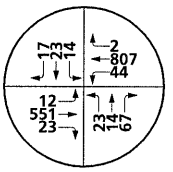
26

WARREN VISTA AV. & YUCCA TR.



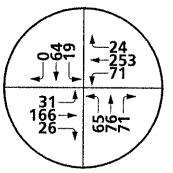
27

BALSA AV. & TWENTYNINE PALMS HWY. (SR-62)



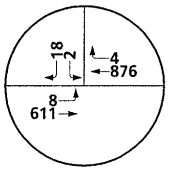
28

AVALON AV. & TWENTYNINE PALMS HWY. (SR-62)



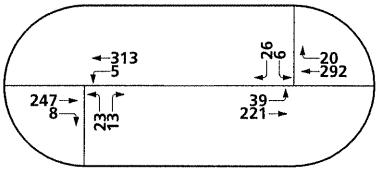
29

PALOMAR AV. & YUCCA TR.



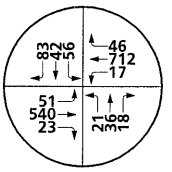
30

INDIO AV. & TWENTYNINE PALMS HWY. (SR-62)



31, 32

INDIO AV. (SOUTH AND NORTH) & YUCCA TR.



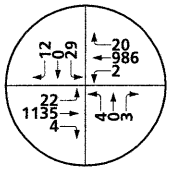
33

YUCCA MESA RD./LA CONTENTA RD. & TWENTYNINE PALMS HWY. (SR-62)

N

URBAN CROSSROADS

EXISTING PM PEAK HOUR INTERSECTION VOLUMES (PCEs)



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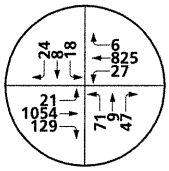

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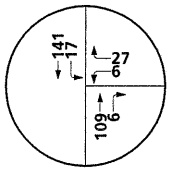
KICKAPOO TR. & TWENTYNINE PALMS HWY. (SR-62)



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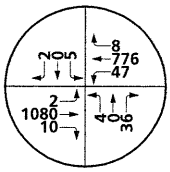
KICKAPOO TR. & SANTA FE TR.



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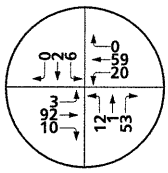

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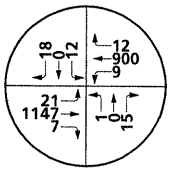
FOX TR. & YUCCA TR.



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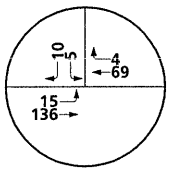
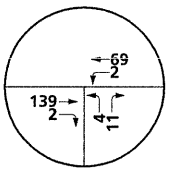


7
WAMEGO TR. & YUCCA TR.



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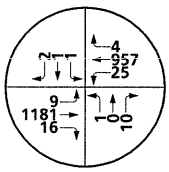
ELK TR. & YUCCA TR.



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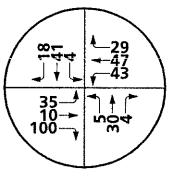
ELK TR. & TWENTYNINE PALMS HWY. (SR-62)



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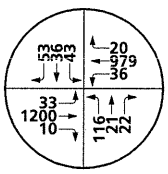
PIONEERTOWN RD. & YUCCA TR.



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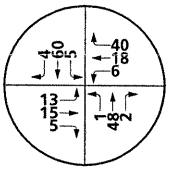
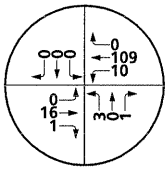
PIONEERTOWN RD./ DEER TR. & TWENTYNINE PALMS HWY. (SR-62)



12
DEER TR. & SANTA FE TR.



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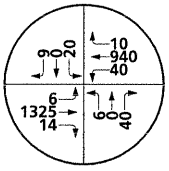
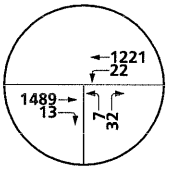
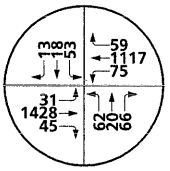
CHEROKEE TR. (SOUTH) & YUCCA TR.



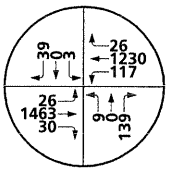
14
CHEROKEE TR. & TWENTYNINE PALMS HWY. (SR-62)



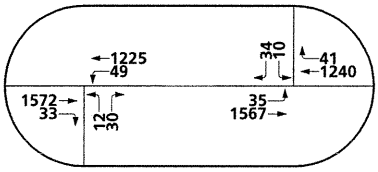
15
APACHE TR. & TWENTYNINE PALMS HWY. (SR-62)



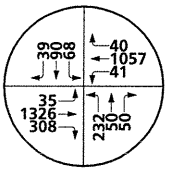
16
MOHAWK TR./ ACOMA TR. & TWENTYNINE PALMS HWY. (SR-62)



17
CHURCH ST. & TWENTYNINE PALMS HWY. (SR-62)



18, 19
PALM AV. (SOUTH AND NORTH) & TWENTYNINE PALMS HWY. (SR-62)



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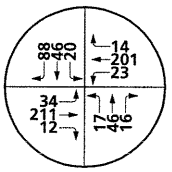
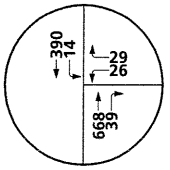
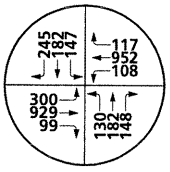
SAGE AV. & TWENTYNINE PALMS HWY. (SR-62)



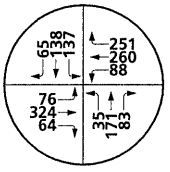
21
SAGE AV. & ONAGA TR.



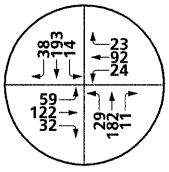
22
OLD WOMAN SPRINGS RD. (SR-247) & PAXTON RD.



23
OLD WOMAN SPRINGS RD. (SR-247)/JOSHUA LN. & TWENTYNINE PALMS HWY. (SR-62)



24
JOSHUA LN. & YUCCA TR.



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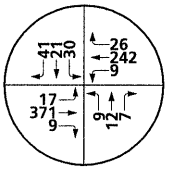
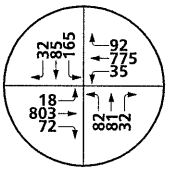
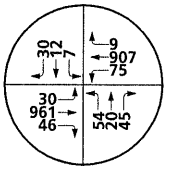
JOSHUA LN. & ONAGA TR.



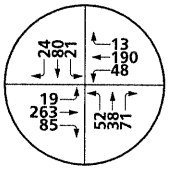
26
WARREN VISTA AV. & YUCCA TR.



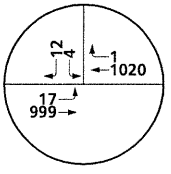
27
BALSA AV. & TWENTYNINE PALMS HWY. (SR-62)



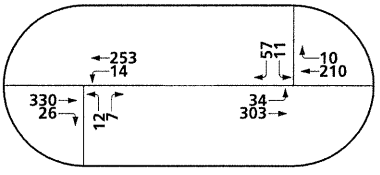
28
AVALON AV. & TWENTYNINE PALMS HWY. (SR-62)



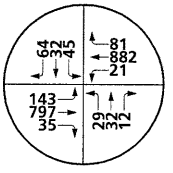
29
PALOMAR AV. & YUCCA TR.



30
INDIO AV. & TWENTYNINE PALMS HWY. (SR-62)



31, 32
INDIO AV. (SOUTH AND NORTH) & YUCCA TR.



33
YUCCA MESA RD./LA CONTENTA RD. & TWENTYNINE PALMS HWY. (SR-62)

N

URBAN CROSSROADS

service calculations are based upon manual AM and PM peak hour turning movement counts conducted specifically for Urban Crossroads, Inc. (traffic count worksheets are included in Appendix A). The AM peak hour traffic volumes were determined by counting the two-hour period from 7:00 to 9:00 AM on a typical weekday. Similarly, the PM peak hour traffic volumes were identified by counting the two-hour period from 4:00 to 6:00 PM on a typical weekday. Per Town direction, the counts include the vehicle classification as shown below per the requirements of SANBAG and the San Bernardino CMP.

- Passenger cars
- Buses/recreational vehicles (2-axle)
- 3-axle heavy vehicles
- 4+-axle heavy vehicles

The overall existing count volumes illustrated on the exhibits and used for the analysis for the study are calculated passenger car equivalent (PCE) volumes. Explicit peak hour factors have been calculated using the data collected for this effort as well.

3.3 Existing Traffic Operations

Existing peak hour traffic operations have been evaluated for both the AM and PM peak hours of traffic at the study area intersections. The results of this analysis are summarized in Table 3-1, along with the existing intersection geometrics and control devices at each analysis location. As indicated in Table 3-1, all of the study area intersections currently operate at acceptable levels of service during the peak hours except for the following intersections:

Camino del Cielo Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

TABLE 3-1 (Page 1 of 2)

INTERSECTION ANALYSIS SUMMARY FOR EXISTING CONDITIONS

INTERSECTION DESCRIPTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	Delay[2] (SEC) AM	PM	LEVEL OF SERVICE AM	PM
Camino del Cielo Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0.5	0.5	1	0.5	0.5	1	1	2	0	1	1	0	--[4]	--[4]	F	F
Kickapoo Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	1	1	1	1	1	2	0	1	2	0	19.5	18.2	B	B
• Sante Fe Tr. (EW)	CSS	0	1	1	0.5	0.5	0	0	0	0	1	0	1	10.3	10.7	B	B
Inca Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0.5	0.5	1	0.5	0.5	1	1	2	1	1	2	1	66.9	67.0	F	F
Fox Tr. (NS) at:																	
• Yucca Tr. (EW)	CSS	0.5	0.5	1	0	1	0	0.5	0.5	1	0.5	0.5	1	11.0	10.9	B	B
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0.5	0.5	1	0.5	0.5	1	1	2	1	1	2	1	96.5	76.6	F	F
Wamego Tr. (NS) at:																	
• Yucca Tr. (EW)	CSS	0	0	0	0.5	0	0.5	0.5	0.5	0	0	1	1	9.3	9.3	A	A
Elk Tr. (NS) at:																	
• Yucca Tr. (EW)	CSS	1	0	1	0	0	0	0	1	1	0.5	0.5	0	10.1	9.8	B	A
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0.5	0.5	1	0.5	0.5	1	1	2	1	1	2	1	53.4	--[4]	F	F
Pioneertown Rd. (NS) at:																	
• Yucca Tr. (EW)	AWS	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	0	1	0	8.5	8.5	A	A
Pioneertown Rd./Deer Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	1	1	1	1	1	2	1	1	2	1	9.7	10.6	A	B
Deer Tr. (NS) at:																	
• Sante Fe Tr. (EW)	CSS	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	10.2	10.3	B	B
Cherokee Tr. (South) (NS) at:																	
• Yucca Tr. (EW)	CSS	0.5	0.5	1	0	1	0	0.5	0.5	1	0.5	0.5	1	9.7	9.5	A	A
Cherokee Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0.5	0.5	1	0.5	0.5	1	1	2	1	1	2	1	55.2	--[4]	F	F
Apache Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	1	0	1	0	0	0	0	2	1	1	2	0	48.6	--[4]	F	F
Mohawk Tr./Acoma Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	1	1	1	1	1	2	1	1	1	1	17.7	19.6	B	B
Church St. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0	1	0	0.5	0.5	1	1	2	1	1	2	1	--[4]	--[4]	F	F
Palm Av. (South) (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	1	0	1	0	0	0	0	2	1	1	2	0	81.0	--[4]	F	F
Palm Av. (North) (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0	0	0	1	0	1	1	2	0	0	2	1	76.8	--[4]	F	F
Sage Av. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	0	1	1	1	1	2	0	1	2	1	12.5	12.6	B	B
• Onaga Tr. (EW)	AWS	1	1	0	1	1	1	1	1	1	0	1	0	8.9	11.2	A	B
Old Woman Springs Rd. (SR-247) (NS) at:																	
• Paxton Rd. (EW)	CSS	0	1	1	1	1	0	0	0	0	0.5	0	0.5	20.1	20.6	C	C
Old Woman Springs Rd. (SR-247)/Joshua Ln. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	2	1	1	2	1	1	2	0	1	2	0	24.0	26.5	C	C
Joshua Ln. (NS) at:																	
• Yucca Tr. (EW)	AWS	1	2	0	1	1	1	1	1	0	1	2	0	13.7	32.8	B	D
• Onaga Tr. (EW)	AWS	0	1	0	0.5	0.5	1	0	1	0	0	1	0	12.2	11.2	B	B
Warren Vista Av. (NS) :																	
• Yucca Tr. (EW)	CSS	0.5	0.5	1	0	1	0	0.5	0.5	1	0.5	0.5	1	15.8	17.3	C	C
Balsa Av. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	0	1	1	0	1	2	1	1	2	0	19.4	20.5	B	C
Avalon Av. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	1	1	1	1	1	2	1	1	2	1	19.7	20.3	B	C
Palomar Av. (NS) at:																	
• Yucca Tr. (EW)	AWS	0	1	0	0	1	0	0	1	0	0.5	0.5	1	15.7	13.1	C	B
Indio Av. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0	0	0	0.5	0	0.5	1	2	0	0	2	0	14.0	23.0	B	C
Indio Av. (South) (NS) at:																	
• Yucca Tr. (EW)	CSS	0.5	0	0.5	0	0	0	0	1	0	0.5	0.5	0	14.0	14.5	B	B

TABLE 3-1 (Page 2 of 2)

INTERSECTION ANALYSIS SUMMARY FOR EXISTING CONDITIONS

INTERSECTION DESCRIPTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1]												Delay[2] (SEC)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Indio Av. (North) (NS) at: • Yucca Tr. (EW)	CSS	0	0	0	0.5	0	0.5	0.5	0.5	0	0	1	1	11.9	11.5	B	B
Yucca Mesa Rd./La Contenta Rd. (NS) at: • Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	1	1	1	0	1	2	1	1	2	1	17.7	19.4	B	B

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

L = Left; T = Through; R = Right; >> = Free Right Turn; > = Right Turn Overlap.

[2] Delay and level of service calculated using the following analysis software: Traffix, Version 7.8 R2 (2006). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3] CSS = Cross Street Stop; TS = Traffic Signal; AWS = All-Way Stop.

[4] -- = Delay High or V/C Ratio exceeding 1.0, Intersection Unstable, Level of Service "F".

U:\UcJobs_03600-04000_03600\03653\Excel\[03653-03.xls]T 3-1

Inca Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Fox Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Elk Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Cherokee Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Apache Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Church Street (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Palm Avenue (South) (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Palm Avenue (North) (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

The operations analysis worksheets for existing conditions are included in Appendix B. In general, existing traffic operations deficiencies occur at full access intersections with cross street STOP control along SR-62 in the vicinity of the downtown area.

Traffic signal warrant analysis indicates that the following intersections appear to currently warrant a traffic signal (see Appendix C):

Inca Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Cherokee Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Church Street (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Palm Avenue (South) (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Palm Avenue (North) (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Joshua Lane (NS) at:

- Yucca Trail (EW)

Palomar Avenue (NS) at:

- Yucca Trail (EW)

Additional signal warrant analysis (also included in Appendix C) has been conducted for intersections potentially requiring traffic signal installation. The additional analysis indicates that no other traffic signals are currently warranted. Traffic signals are warranted at many (but not all) of the intersections experiencing deficient operations, as well as at some other intersections currently under all-way stop control.

3.4 Planned Transportation Improvements and Relationships to General Plan

The long range transportation system within the study area is expected to undergo significant improvement as a result of work to be performed by the California Department of Transportation (Caltrans) and the Town of Yucca Valley. The Town of Yucca Valley General Plan Circulation Element and General Plan roadway cross-sections are shown on Exhibits 3-E and Exhibit 3-F, respectively. The currently adopted General Plan does not include the proposed

realignment of SR-62 along the existing Yucca Trail alignment and is used as the planned roadway system for the 2030 Horizon Year without project condition in this analysis. In the currently adopted General Plan, Kickapoo Trail, between Yucca Trail and Santa Fe Trail, is designated as a 2-lane Collector roadway, becoming a 4-lane Collector roadway between Santa Fe Trail and Onaga Trail. Pioneertown Road/Deer Trail are designated as 4-lane Collector roadways from the Town boundary to Onaga Trail. Acoma Trail, south of Twentynine Palms Highway (SR-62), is designated as a 4-lane Collector roadway. Yucca Trail, west of Twentynine Palms Highway (SR-62), is designated as a 2-Lane Industrial roadway. Twentynine Palms Highway (SR-62), throughout the Town of Yucca Valley, is designated as a 6-lane Divided Highway. Santa Fe Trail, between Kickapoo Trail and Acoma Trail, is designated as a 4-lane Collector roadway.

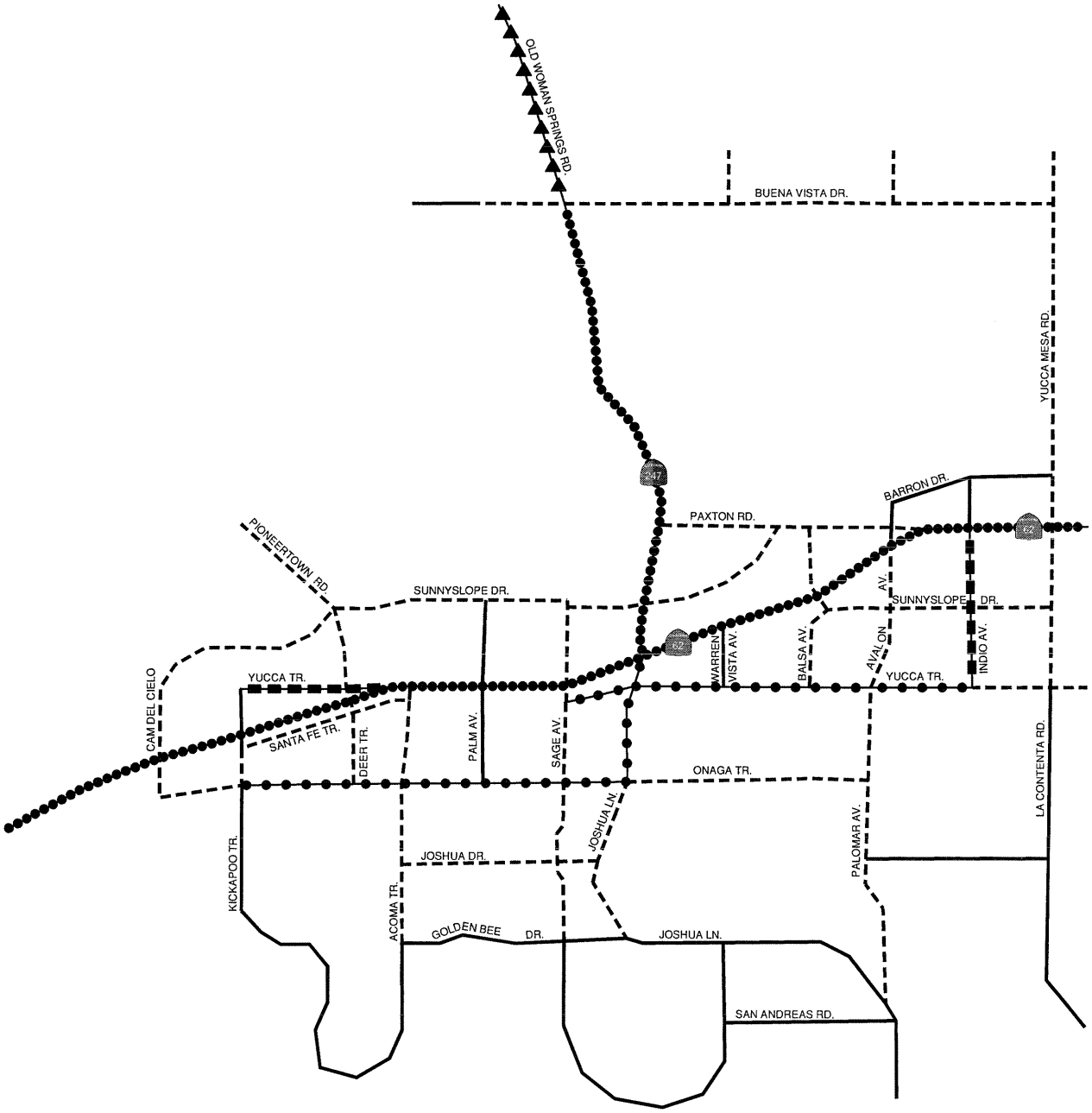
The County of San Bernardino General Plan Circulation Element and General Plan roadway cross-sections in the vicinity of the proposed project are depicted on Exhibits 3-G and 3-H, respectively. Pioneertown Road is the only roadway within the study area that is given a specific designation on the County plan (SR-62 and SR-247 are simply identified as "highways"). The County's designation of Pioneertown Road as a Secondary Highway is generally consistent with the Town of Yucca Valley's designation as a 4-lane Collector Roadway. Both classifications provide for a 4-lane, undivided roadway. The Town's designation provides for a right-of-way of 80 feet, while the County designation calls for an 88-foot right-of-way.

3.4.1 Funded Roadway Improvements

No committed sources of funding for additional improvements necessary to serve the increase in traffic other than the Town of Yucca Valley fee program or improvements that will occur in conjunction with other cumulative projects have been identified while conducting the study. A number of other known development projects are anticipated within the study area.

EXHIBIT 3-E

TOWN OF YUCCA VALLEY
GENERAL PLAN CIRCULATION ELEMENT



LEGEND:

- = HIGHWAY - 6 LANES DIVIDED (110')
- = HIGHWAY - 4 LANES DIVIDED (104')
- = ARTERIAL - 4 LANES DIVIDED (100')
- = COLLECTOR - 4 LANES (80')
- = COLLECTOR - 2 LANES (66')
- = INDUSTRIAL - 2 LANES (70')

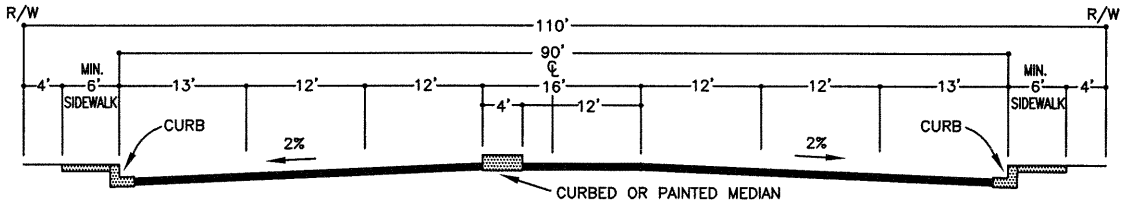
N

OLD TOWN YUCCA VALLEY SPECIFIC PLAN CMP TIA, Yucca Valley, California - 03653: 10.dwg

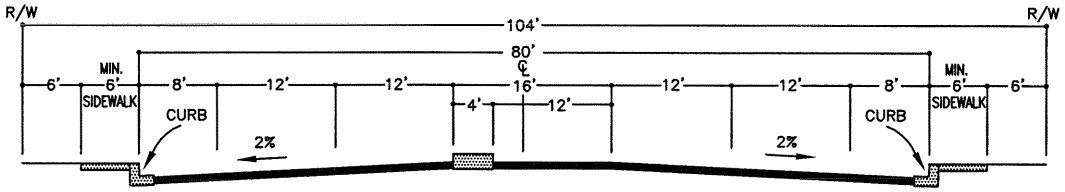
URBAN CROSSROADS

EXHIBIT 3-F

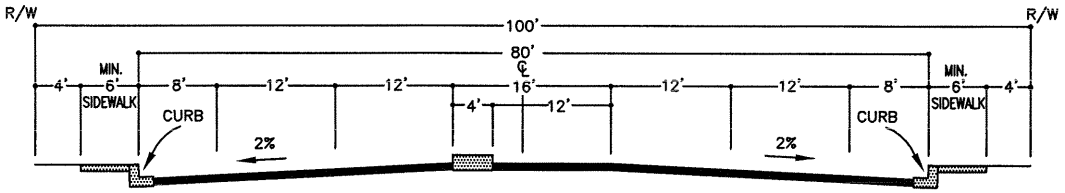
TOWN OF YUCCA VALLEY
GENERAL PLAN ROADWAY CROSS-SECTIONS



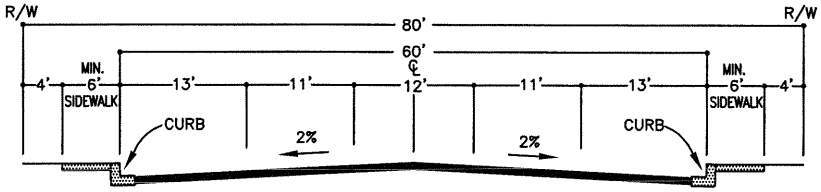
HIGHWAY - 6 LANES DIVIDED



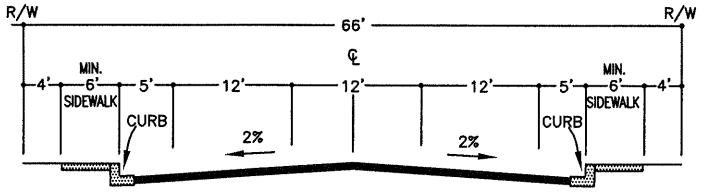
HIGHWAY - 4 LANES DIVIDED



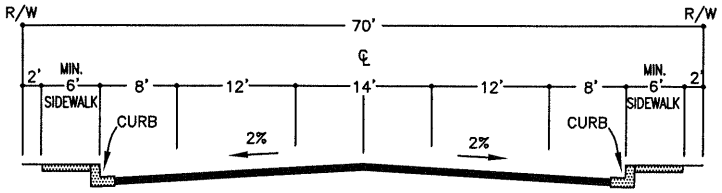
ARTERIAL - 4 LANES DIVIDED



COLLECTOR - 4 LANES (WITH OPTIONAL STRIPED MEDIAN LANE)



COLLECTOR - 2 LANES (WITH OPTIONAL STRIPED MEDIAN LANE)

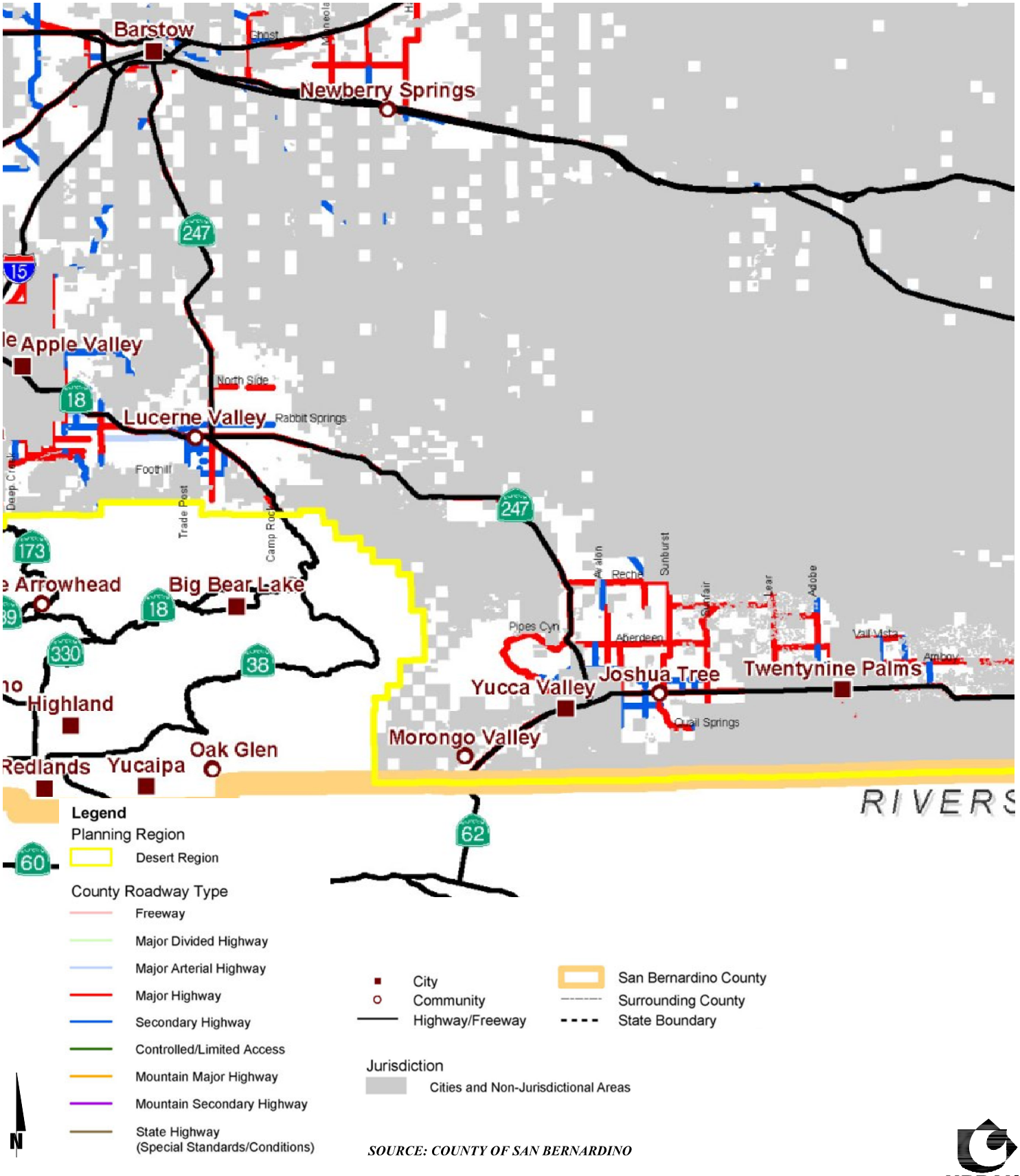


INDUSTRIAL - 2 LANES (WITH STRIPED MEDIAN LANE)

*PART WIDTH STREET SECTION FOR ALL COLLECTOR STREETS - 34' IMPROVEMENTS ON 48' R/W

EXHIBIT 3-G

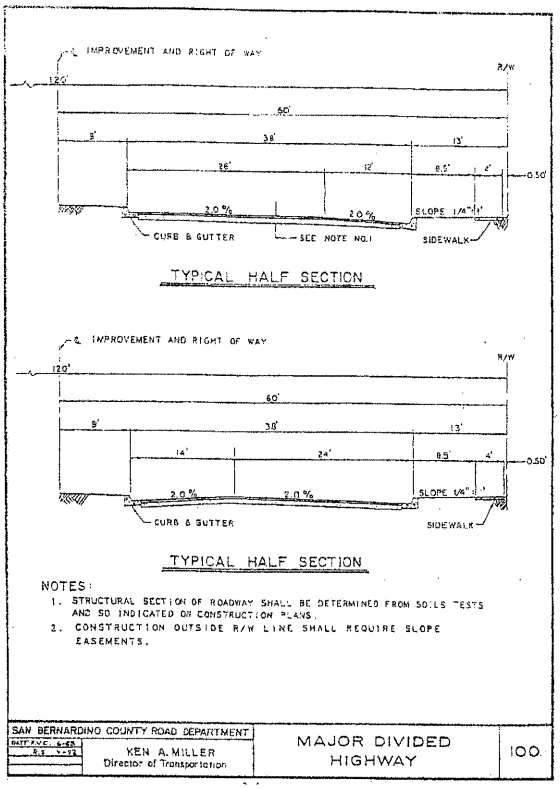
COUNTY OF SAN BERNARDINO GENERAL PLAN CIRCULATION ELEMENT



SOURCE: COUNTY OF SAN BERNARDINO

EXHIBIT 3-H

COUNTY OF SAN BERNARDINO GENERAL PLAN ROADWAY CROSS-SECTIONS (PAGE 1 OF 2)

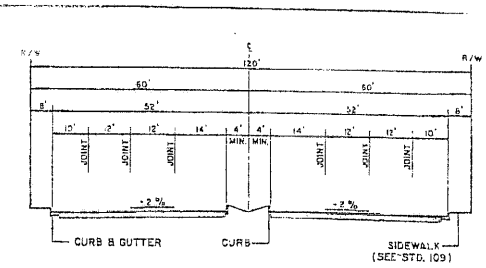


TYPICAL HALF SECTION

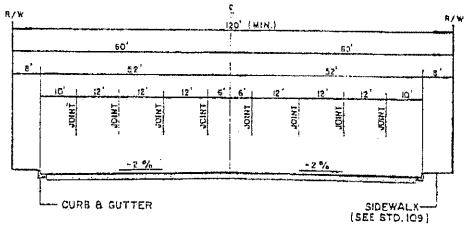
TYPICAL HALF SECTION

NOTES:
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.

SAN BERNARDINO COUNTY ROAD DEPARTMENT			
DATE P.W.C. 6-68 8.3 1-72	KEN A. MILLER Director of Transportation	MAJOR DIVIDED HIGHWAY	100



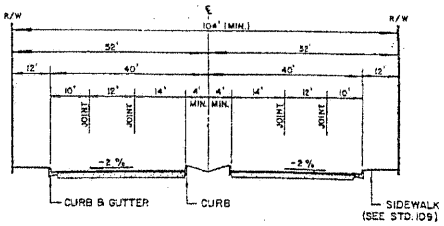
TYPICAL SECTION
WITH RAISED MEDIAN



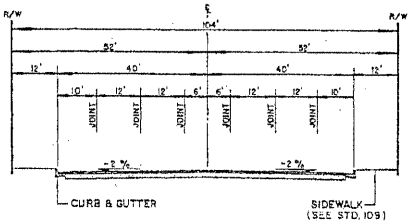
TYPICAL SECTION
WITH CONTINUOUS LEFT TURN LANE

NOTES:
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. DRAINAGE FACILITIES SHALL BE PROVIDED TO DEWATER RAISED MEDIAN AREAS.
3. 10' SHOULDER AREAS MAY BE DESIGNATED AS A BIKE LANE AND EMERGENCY PARKING ONLY.

SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT			
DATE 150 11 71	JOHN R. SHONE DIRECTOR OF TRANSPORTATION	MAJOR ARTERIAL	100 A



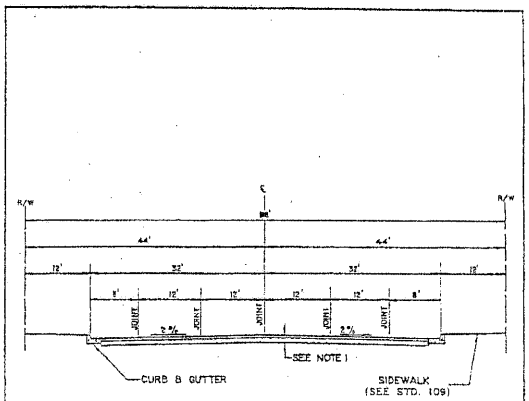
TYPICAL SECTION
WITH RAISED MEDIAN



TYPICAL SECTION
WITH CONTINUOUS LEFT TURN LANE

NOTES:
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. DRAINAGE FACILITIES SHALL BE PROVIDED TO DEWATER RAISED MEDIAN AREAS.
3. 10' SHOULDER AREAS MAY BE DESIGNATED AS A BIKE LANE AND EMERGENCY PARKING ONLY.

SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT			
DATE 150 11 71	JOHN R. SHONE DIRECTOR OF TRANSPORTATION	MAJOR HIGHWAY	101

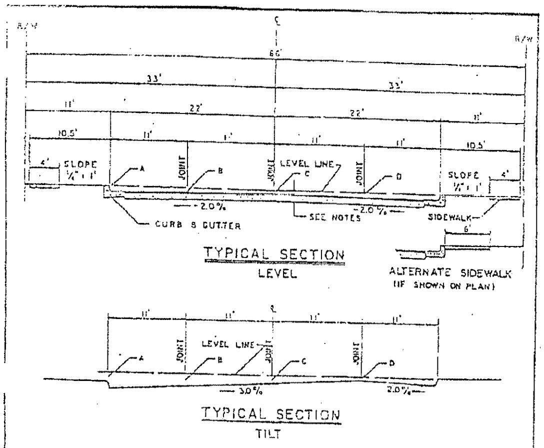


TYPICAL SECTION

NOTES:
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. 8' SHOULDER AREAS MAY BE DESIGNATED AS A BIKE LANE AND EMERGENCY PARKING ONLY.

SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT			
DATE APR 4 '72 REVISED	JOHN R. SHONE DIRECTOR OF TRANSPORTATION	SECONDARY HIGHWAY	102

COUNTY OF SAN BERNARDINO GENERAL PLAN ROADWAY CROSS-SECTIONS (PAGE 2 OF 2)



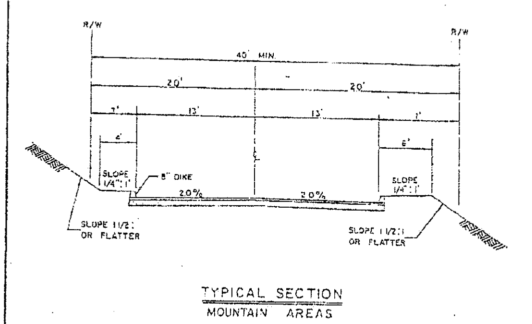
		A	B	C	D
8" CURB	LEVEL	0.00'	0.36'	0.14'	0.36'
	TILT	0.76'	1.02'	0.69'	0.36'
6" CURB	LEVEL	0.00'	0.19'	(0.03)	0.19'
	TILT	0.73'	0.85'	0.52'	0.15'

( ) INDICATES ABOVE LEVEL LINE

NOTE

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. MINIMUM DESIGN PAVING THICKNESS SHALL BE 0.25' ASPHALT CONCRETE.
3. CONSTRUCTION OUTSIDE R/W WILL REQUIRE SLOPE EASEMENTS.

SAN BERNARDINO COUNTY TRANS. DEPT. | KEN A. MILLER, Director of Transportation | CONTROLLED LIMITED ACCESS COLLECTOR | 103 A

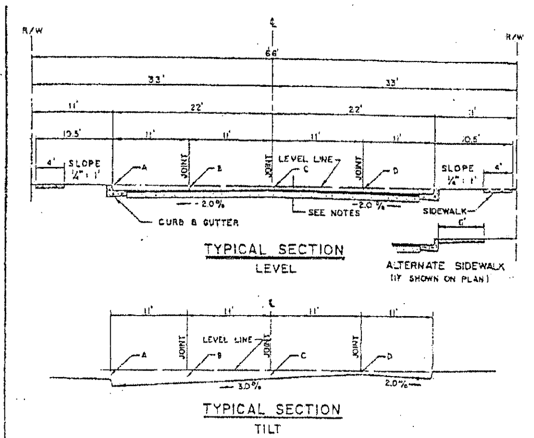


NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.
3. SLOPE REQUIREMENT MAY BE VARIED BY SUBMISSION OF SOILS REPORT.

SAN BERNARDINO COUNTY ROAD DEPARTMENT | DATE: J.E.M. 9-65 | PR 6-80 | A.I. 4-92 | KEN A. MILLER, Director of Transportation | MOUNTAIN LOCAL PAVED ROAD | 114b

3-11



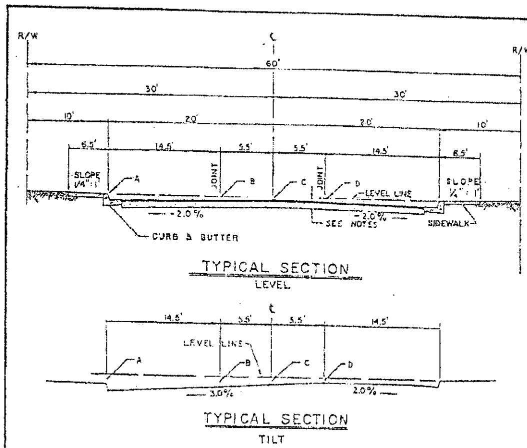
		A	B	C	D
8" CURB	LEVEL	0.00'	0.36'	0.14'	0.36'
	TILT	0.75'	1.02'	0.69'	0.36'
6" CURB	LEVEL	0.00'	0.19	(0.03)	0.19'
	TILT	0.76'	0.85'	0.52'	0.13'

( ) INDICATES ABOVE LEVEL LINE

NOTE

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. MINIMUM DESIGN PAVING THICKNESS SHALL BE 0.25' ASPHALT CONCRETE.
3. CONSTRUCTION OUTSIDE R/W WILL REQUIRE SLOPE EASEMENTS.

SAN BERNARDINO COUNTY ROAD DEPARTMENT | DATE: R.V.C. 9-65 | Rev. 5-74 | *John R. Shone*, COUNTY HIGHWAY ENGINEER | COLLECTOR STREET | 103



		A	B	C	D
8" CURB	LEVEL	0.00'	0.29'	0.18'	0.29'
	TILT	0.46'	0.62'	0.46'	0.29'
6" CURB	LEVEL	0.00	0.12'	0.01'	0.12'
	TILT	0.45'	0.45'	0.29'	0.12'

NOTE

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. MINIMUM DESIGN PAVING THICKNESS SHALL BE 0.25' ASPHALT CONCRETE.
3. CONSTRUCTION OUTSIDE R/W WILL REQUIRE SLOPE EASEMENTS
4. WHEN PREPARING SUBGRADE FOR PAVING CENTERLINE CROWN ON THE "LEVEL SECTION" SHALL BE RELOCATED EITHER LEFT OR RIGHT 0.50 TO MATCH CROWN BREAK IN PAVING MACHINE.

SAN BERNARDINO COUNTY TRANS. DEPT. | KEN A. MILLER, Director of Transportation | LOCAL STREET | 104 A

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4.0 FUTURE DAILY TRAFFIC CONDITIONS

This section of the report describes the development of the future year traffic volume forecasts and presents the resulting traffic volumes which will be used for traffic operations analysis. Future traffic conditions without the project are presented first, followed by the future with project traffic volumes. Traffic signal warrant analysis for future conditions has also been presented in this section.

4.1 Future Without and With Project Traffic Conditions

As described in Section 1.3.1, the 2030 Horizon Year ADT volume forecasts are developed using the long range volumes predicted by the RSA 33 - Morongo Basin Transportation Model (MBTM). For 2030 Horizon Year without project conditions, the Old Town Specific Plan area has been represented by the explicit land uses detailed in the currently adopted General Plan. Similarly, for 2030 Horizon Year with project conditions, the Old Town Specific Plan area has been represented by the land uses detailed in the proposed Specific Plan. The growth increment for both 2030 Horizon Year conditions on each roadway segment is the increase in MBTM volume from existing to their respective future conditions. The final 2030 Horizon Year without and with project roadway segment volumes are then determined by adding their respective 2030 growth increments to the existing counted volumes. Appendix E includes the worksheets showing daily traffic volume calculations for all scenarios.

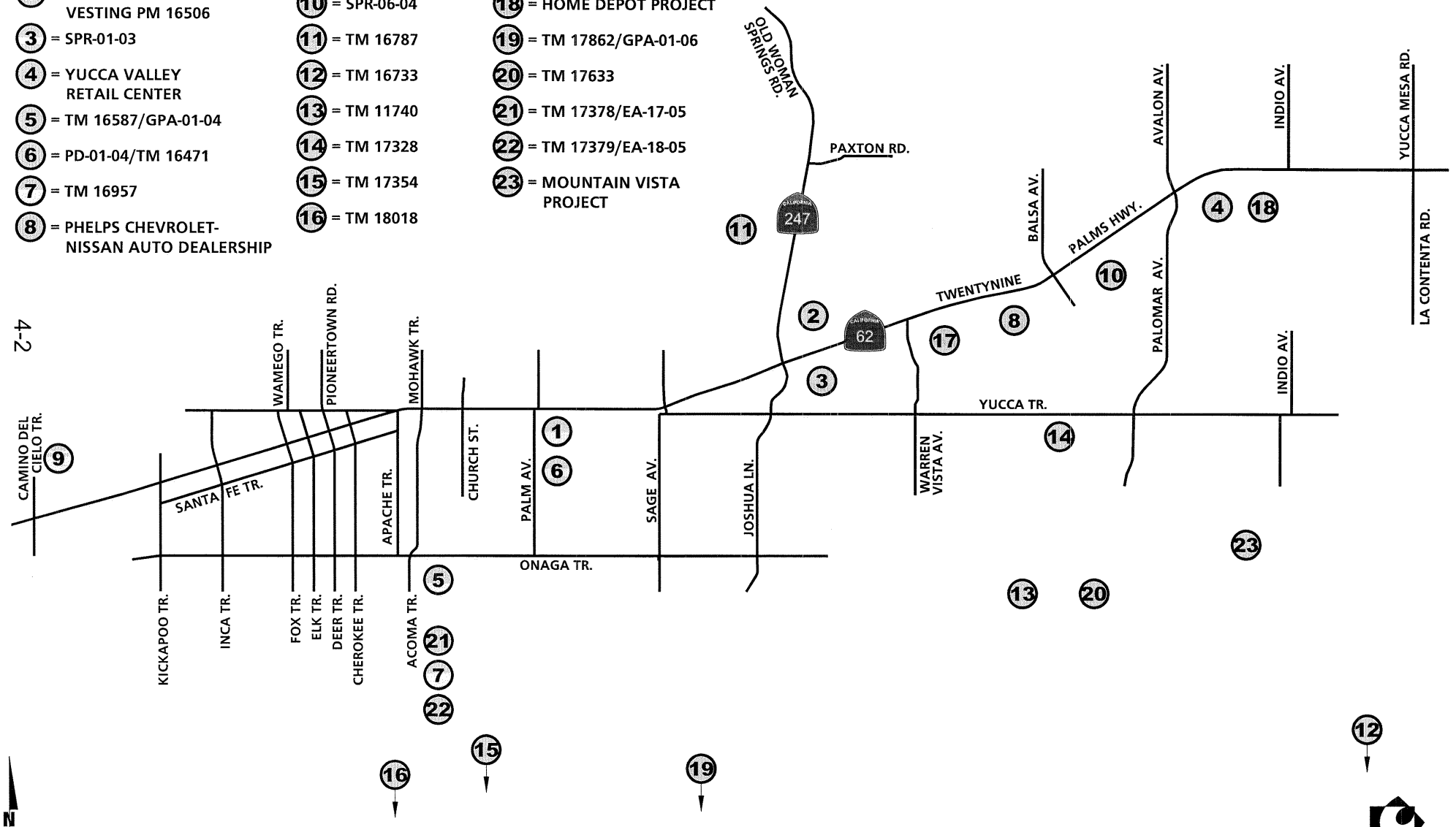
In order to ensure the 2030 Horizon Year traffic volumes include other developments which are planned within the Town of Yucca Valley, Town staff was contacted in order to determine if there were any projects planned outside of the Old Town area that would have an impact on future traffic volumes at the study area intersections. Town staff provided information regarding twenty-three other cumulative projects within the study area. Exhibit 4-A shows the location of the other developments.

EXHIBIT 4-A

OTHER DEVELOPMENT LOCATION MAP

LEGEND:

1. = SPR-01-04
2. = CUP-07-03 & VESTING PM 16506
3. = SPR-01-03
4. = YUCCA VALLEY RETAIL CENTER
5. = TM 16587/GPA-01-04
6. = PD-01-04/TM 16471
7. = TM 16957
8. = PHELPS CHEVROLET-NISSAN AUTO DEALERSHIP
9. = SPR-02-03/ TM 16649
10. = SPR-06-04
11. = TM 16787
12. = TM 16733
13. = TM 11740
14. = TM 17328
15. = TM 17354
16. = TM 18018
17. = CUP-03-05 (K-MART REUSE)
18. = HOME DEPOT PROJECT
19. = TM 17862/GPA-01-06
20. = TM 17633
21. = TM 17378/EA-17-05
22. = TM 17379/EA-18-05
23. = MOUNTAIN VISTA PROJECT



OLD TOWN YUCCA VALLEY SPECIFIC PLAN CMP TIA, Yucca Valley, California - 03653: 16.dwg

URBAN CROSSROADS

For each traffic analysis zone (TAZ) in the MBTM containing one or more of the other development projects, the growth in socio-economic data (SED) between existing and 2030 Horizon Year conditions was verified to include the development project(s). The project-generated SED forecasts for the other developments are based on land use information provided in available traffic studies and from the Town of Yucca Valley's Active Projects Map. The land use information for each of these developments has been converted into SED by way of the land use-to-SED factors previously presented in Section 2. Table 4-1 provides the other development project SED summary. In cases where the SED growth for a TAZ did not equal or exceed the growth expected from the other development project(s), the long range SED was adjusted upward to account for the planned development.

4.1.1 2030 Horizon Year Without Project Daily Traffic Volumes

ADT volumes for 2030 Horizon Year without project conditions have been determined as described above. Exhibit 4-B shows the ADT volumes which can be expected for 2030 Horizon Year without project conditions. SR-62 is the most heavily traveled roadway under future conditions with daily traffic volumes ranging from 34,000 vehicles per day (VPD) to 59,800 VPD in the study area. A number of other roadways are projected to carry daily traffic volumes in excess of 20,000 VPD, including SR-247, Yucca Trail, Joshua Lane, and Onaga Trail.

For 2030 Horizon Year without project traffic conditions, the following study area intersections are projected to warrant a traffic signal (in addition to those intersections that warrant a traffic signal under existing conditions):

Camino del Cielo Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Kickapoo Trail (NS) at:

- Santa Fe Trail (EW)

TABLE 4-1

OTHER DEVELOPMENT LAND USE AND SED SUMMARY

	PROJECT				SED VARIABLE						
ID#	NAME	LAND USE	QUANTITY	UNITS[1]	SFDU[2]	MFDU[3]	POP[4]	RE[5]	SE[6]	OE[7]	TE[8]
1	SPR-01-04	Hotel	94	RM	0	0	0	9.4	112.8	47.0	169.2
2	CUP-07-03 and Vesting PM 16506 (IN-N-OUT Burger)	Fast-Food Restaurant with Drive-Through Window	3.220	TSF	0	0	0	5.5	1.4	0.5	7.4
3	SPR-01-03	Self-Service Car Wash	4	WS	--	--	--	--	--	--	--
		Specialty Retail Center	1.808	TSF	0	0	0	3.1	0.8	0.3	4.2
		Shopping Center	4.620	TSF	0	0	0	7.9	2.1	0.7	10.6
4	Yucca Valley Retail Center	Overall Development	233	TSF	0	0	0	396.1	104.9	35.0	535.9
5	TM 16587/GPA-01-04	SFDR	57	DU	57	0	180.7	0	0	0	0
6	PD-01-04/TM 16471	Mobile Home Park	106	ODU	106	0	336.0	0	0	0	0
7	TM 16957	SFDR	34	DU	34	0	107.8	0	0	0	0
8	Phelps Chevrolet-Nissan Auto Dealership	New Car Sales	21.606	TSF	0	0	0	36.7	9.7	3.2	49.7
9	SPR-02-03/TM 16649	Res. Condominium/Townhouse	40	DU	0	40	108.0	0	0	0	0
10	SPR-06-04	Apartment	12	DU	0	12	20.4	0.0	0.2	0.1	0.4
11	TM 16787	SFDR	54	DU	54	0	171.2	0	0	0	0
12	TM 16733	SFDR	17	DU	17	0	53.9	0	0	0	0
13	TM 11740	Res. Condominium/Townhouse	91	DU	0	91	245.7	0	0	0	0
14	TM 17328	SFDR	17	DU	17	0	53.9	0	0	0	0
15	TM 17354	SFDR	61	DU	61	0	193.4	0	0	0	0
16	TM 18018	SFDR	12	DU	12	0	38.0	0	0	0	0
17	CUP-03-05 (K-Mart Reuse)	Shopping Center	73.722	TSF	0	0	0	125.3	33.2	11.1	169.6
18	Home Depot Project	Overall Development	177.266	TSF	0	0	0	301.4	79.8	26.6	407.7
19	TM 17862/GPA-01-06	SFDR	105	DU	105	0	332.9	0	0	0	0
20	TM 17633	SFDR	61	DU	61	0	193.4	0	0	0	0
21	TM 17378/EA-17-05	SFDR	32	DU	32	0	101.4	0	0	0	0
22	TM 17379/EA-18-05	SFDR	32	DU	32	0	101.4	0	0	0	0
23	Mountain Vista Project	SFDR (238 Age-Restricted)	1,401	DU	1401	0	4441.2	0	0	0	0
	TOTAL NET				**1989**	**143**	**6679.23**	**885.31**	**344.90**	**124.41**	**1354.62**

[1] TSF = Thousand Square Feet; RM = Rooms; WS = Wash Stalls; DU = Dwelling Units; ODU = Occupied Dwelling Units.

[2] Single Family Dwelling Unit (SFDU)

[3] Multi Family Dwelling Unit (MFDU)

[4] Population (POP)

[5] Retail Employment (RE)

[6] Service Employment (SE)

[7] Other Employment (OE)

[8] Total Employment (TE)

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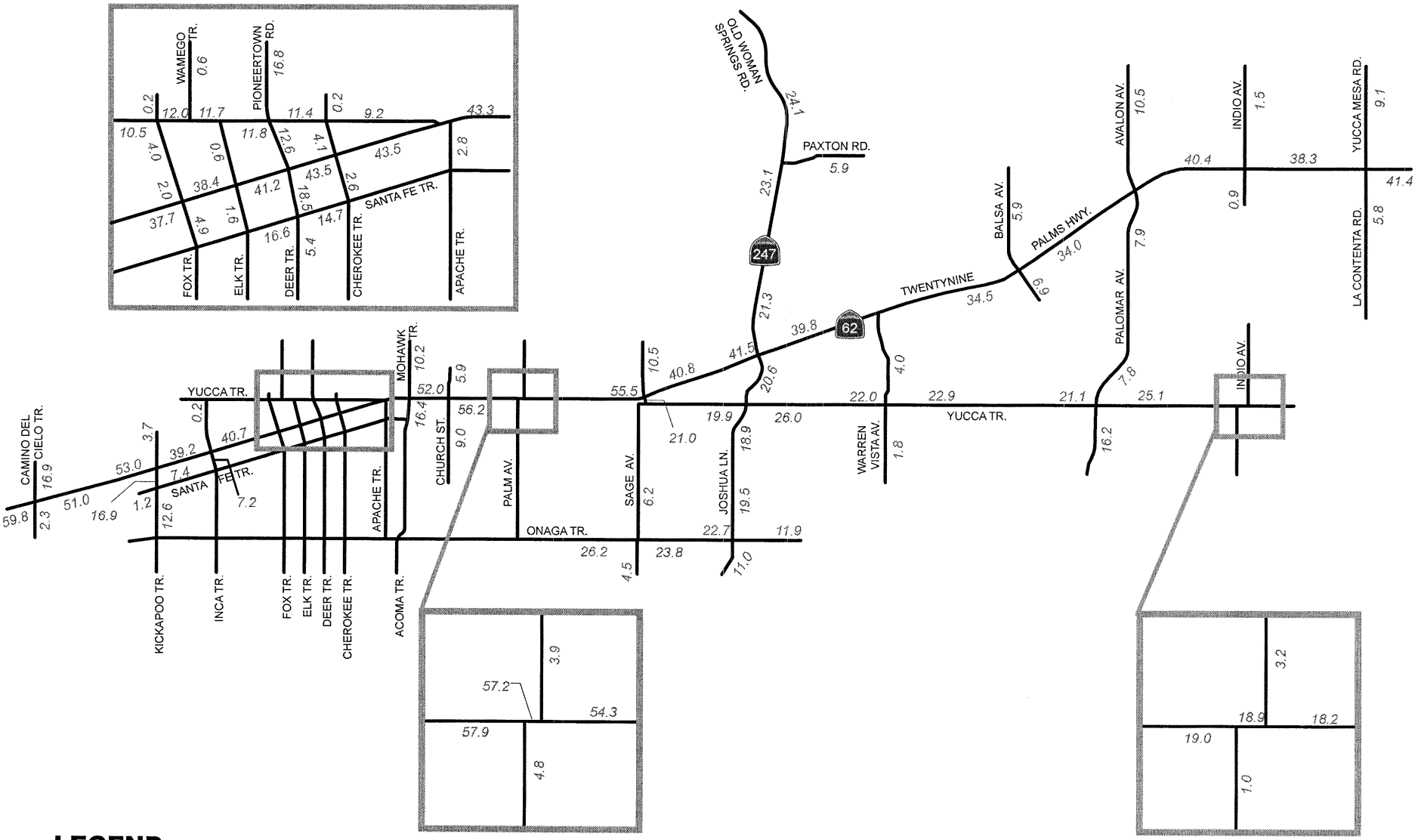
EXHIBIT 4-B

2030 HORIZON YEAR WITHOUT PROJECT AVERAGE DAILY TRAFFIC (ADT)



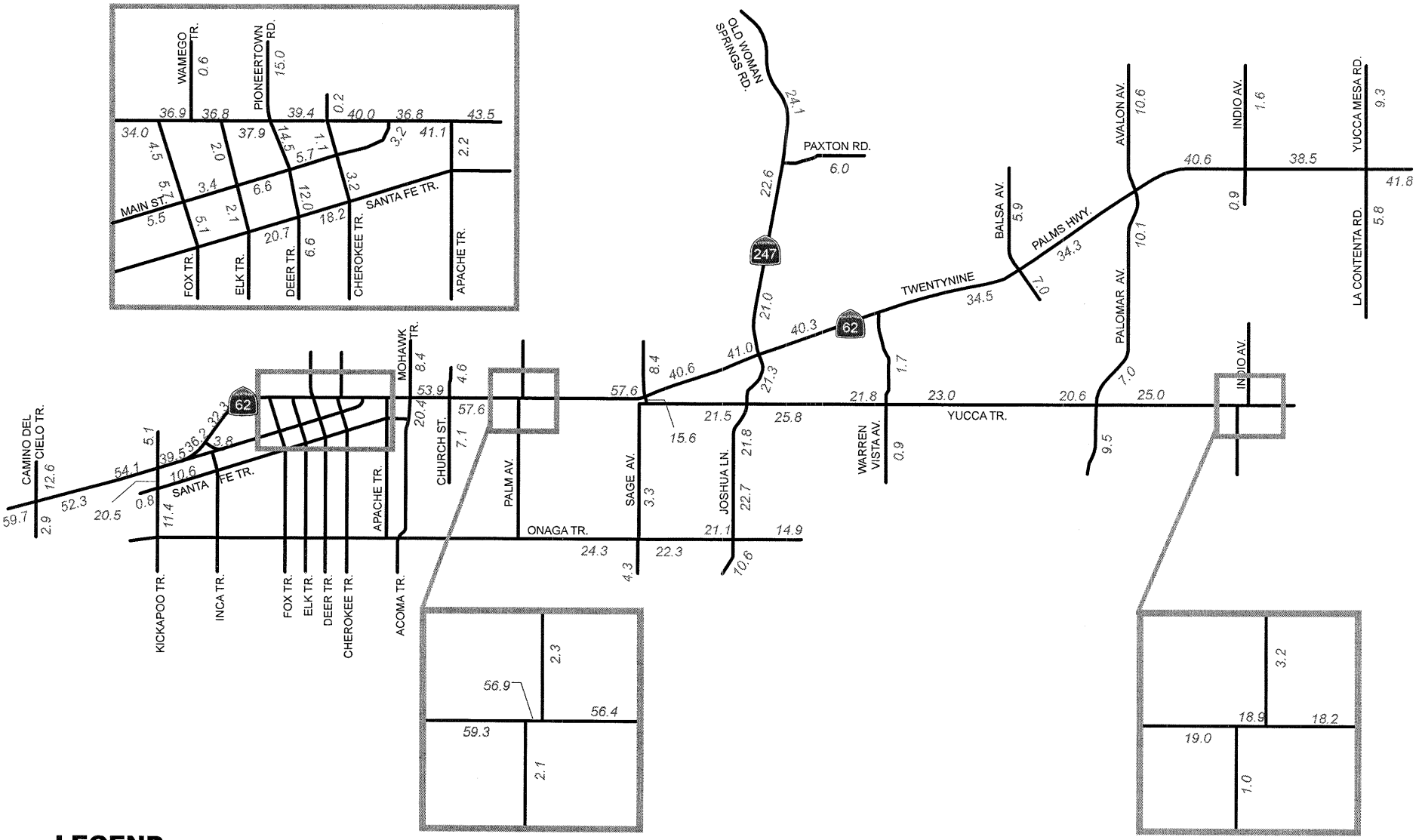
LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

URBAN CROSSROADS

EXHIBIT 4-C

2030 HORIZON YEAR WITH PROJECT AVERAGE DAILY TRAFFIC (ADT)



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

N

URBAN CROSSROADS

Fox Trail (NS) at:

- Yucca Trail (EW)
- Twentynine Palms Highway (SR-62) (EW)

Pioneertown Road (NS) at:

- Yucca Trail (EW)

Deer Trail (NS) at:

- Santa Fe Trail (EW)

Cherokee Trail (South) (NS) at:

- Yucca Trail (EW)

Apache Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Sage Avenue (NS) at:

- Onaga Trail (EW)

Old Woman Springs Road (SR-247) (NS) at:

- Paxton Road (EW)

Joshua Lane (NS) at:

- Onaga Trail (EW)

Warren Vista Avenue (NS) at:

- Yucca Trail (EW)

Indio Avenue (North) (NS) at:

- Yucca Trail (EW)

Appendix C includes the traffic signal warrant analysis worksheets. Appendix E shows the daily traffic volume calculations.

4.1.2 2030 Horizon Year With Project Daily Traffic Volumes

ADT volumes for 2030 Horizon Year with project conditions have been determined as described above. Exhibit 4-C shows the ADT volumes which can be expected for the 2030 Horizon Year with project traffic conditions. The traffic patterns are generally similar to 2030 without project conditions. SR-62 is projected to carry traffic volumes ranging from 34,300 VPD to 59,700 VPD in the study area. SR-247, Yucca Trail, Joshua Lane, and Onaga Trail are again expected to carry daily traffic volumes in excess of 20,000 VPD. The primary difference is that realigning SR-62 will reduce traffic volumes on Main Street in the Old Town area to between 3,200 and 6,600 VPD.

As described in Section 2, the proposed SR-62 realignment and Old Town Yucca Valley Specific Plan circulation plan have altered the names and geometric configurations of intersections within the Old Town area (as well as added two additional analysis locations). As such, regardless of whether the affected intersections warranted a traffic signal under existing or 2030 Horizon Year without project conditions, the intersections were reanalyzed with respect to traffic signal warrants under 2030 Horizon Year with project conditions. Intersections outside the Old Town area were compared only with existing conditions, as the proposed project is a Specific Plan amendment (and not an additional project added) to the currently adopted General Plan. Traffic signals are anticipated to be warranted at the following intersections for 2030 Horizon Year with project traffic conditions:

Camino del Cielo Trail (NS) at:

- SR-62 (EW)

Kickapoo Trail (NS) at:

- Santa Fe Trail (EW)

Main Street (Western Gateway) (NS) at:

- SR-62 (EW)

Fox Trail (NS) at:

- SR-62 (EW)

Elk Trail (NS) at:

- SR-62 (EW)

Pioneertown Road (NS) at:

- SR-62 (EW)

Pioneertown Road/Deer Trail (NS) at:

- Main Street (EW)

Deer Trail (NS) at:

- Santa Fe Trail (EW)

Main Street (Eastern Gateway) (NS) at:

- SR-62 (EW)

Apache Trail (NS) at:

- SR-62 (EW)

Sage Avenue (NS) at:

- Onaga Trail (EW)

Old Woman Springs Road (SR-247) (NS) at:

- Paxton Road (EW)

Joshua Lane (NS) at:

- Onaga Trail (EW)

Warren Vista Avenue (NS) at:

- Yucca Trail (EW)

Indio Avenue (North) (NS) at:

- Yucca Trail (EW)

The intersection of the North Site Access Driveway at Yucca Trail does not satisfy the Planning Level traffic signal warrant (based on intersection approach ADT), but does satisfy the Peak Hour warrant (Warrant 3) detailed in the 2003 Manual of Uniform Traffic Control Devices (MUTCD).

Appendix C includes the traffic signal warrant analysis worksheets. Appendix F shows the daily traffic volume calculations.

5.0 FUTURE TRAFFIC OPERATIONS ANALYSIS

This section of the report presents the traffic operations analysis for future traffic conditions both without and with the proposed project. The analysis procedures conform to the requirements of the San Bernardino County CMP. The operations analysis for each future analysis scenario is presented in a separate subsection.

5.1 Future CMP Horizon Year (2030) Traffic Operations

5.1.1 2030 Horizon Year Without Project Conditions

The intersection operations analysis for 2030 Horizon Year without project conditions is summarized in Table 5-1. 2030 Horizon Year without project AM and PM peak hour intersection turning movement volumes are presented on Exhibits 5-A and 5-B, respectively. The operations analysis worksheets for 2030 Horizon Year without project conditions are included in Appendix G. As shown in Table 5-1, the following study area intersections are projected to experience unacceptable levels of service during the peak hours (without improvements) and are, therefore, deficient per Town of Yucca Valley/County of San Bernardino criteria:

Camino del Cielo Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Kickapoo Trail (NS) at:

- Santa Fe Trail (EW)

Inca Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Fox Trail (NS) at:

- Yucca Trail (EW)
- Twentynine Palms Highway (SR-62) (EW)

TABLE 5-1

INTERSECTION ANALYSIS SUMMARY FOR 2030 HORIZON YEAR WITHOUT PROJECT CONDITIONS

INTERSECTION		INTERSECTION APPROACH LANES[1]												Delay[2] (SEC)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
DESCRIPTION	TRAFFIC CONTROL[3]	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Camino del Cielo Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0.5	0.5	1	0.5	0.5	1	1	2	0	1	1	0	--[4]	--[4]	F	F
-With Improvements[5]	**TS**	**1**	**1**	0	**1**	**1**	**2>**	**2**	2	0	1	**3**	0	17.5	32.5	B	C
Kickapoo Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	1	1	1	1	1	2	0	1	2	0	32.4	35.1	C	D
• Santa Fe Tr. (EW)	CSS	1	1	0	0	1	0	0	1	0	1	1	0	49.8	--[4]	E	F
-With Improvements	**TS**	1	1	0	**1**	1	0	**1**	1	0	1	1	0	20.7	30.4	C	C
Inca Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0.5	0.5	1	0.5	0.5	1	1	2	1	1	2	1	--[4]	--[4]	F	F
-With Improvements	**TS**	**1**	**1**	0	**1**	**1**	0	1	2	1	1	2	1	20.5	27.4	C	C
Fox Tr. (NS) at:																	
• Yucca Tr. (EW)	CSS	0.5	0.5	1	0	1	0	0.5	0.5	1	0.5	0.5	1	14.9	44.4	B	E
-With Improvements	**TS**	**1**	**1**	0	**1**	1	0	**1**	**1**	0	**1**	**1**	0	19.0	23.5	B	C
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0.5	0.5	1	0.5	0.5	1	1	2	1	1	2	1	--[4]	--[4]	F	F
-With Improvements	**TS**	**1**	**1**	0	**1**	**1**	0	1	2	1	1	2	1	17.9	17.7	B	B
Wamego Tr. (NS) at:																	
• Yucca Tr. (EW)	CSS	0	0	0	0.5	0	0.5	0.5	0.5	0	0	1	1	10.1	15.4	B	C
Elk Tr. (NS) at:																	
• Yucca Tr. (EW)	CSS	1	0	1	0	0	0	0	1	1	0.5	0.5	0	12.5	24.4	B	C
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0.5	0.5	1	0.5	0.5	1	1	2	1	1	2	1	--[4]	--[4]	F	F
-With Improvements[6]	**TS**	**1**	**1**	0	**1**	**1**	0	1	2	1	1	2	1	15.1	16.7	B	B
Pioneertown Rd. (NS) at:																	
• Yucca Tr. (EW)	AWS	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	0	1	0	--[4]	--[4]	F	F
-With Improvements	**TS**	**1**	**1**	0	**1**	**1**	0	**1**	**1**	0	**1**	1	**1**	24.8	38.5	C	D
Pioneertown Rd./Deer Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	1	1	1	1	1	2	1	1	2	1	12.3	19.0	B	B
Deer Tr. (NS) at:																	
• Santa Fe Tr. (EW)	CSS	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	--[4]	--[4]	F	F
-With Improvements	**TS**	**1**	**1**	0	**1**	**1**	0	**1**	**1**	0	**1**	**1**	0	25.7	48.7	C	D
Cherokee Tr. (South) (NS) at:																	
• Yucca Tr. (EW)	CSS	0.5	0.5	1	0	1	0	0.5	0.5	1	0.5	0.5	1	12.7	23.4	B	C
-With Improvements	**TS**	**1**	**1**	0	**1**	1	0	**1**	**1**	0	**1**	**1**	0	21.6	9.4	C	A
Cherokee Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0.5	0.5	1	0.5	0.5	1	1	2	1	1	2	1	--[4]	--[4]	F	F
-With Improvements	**TS**	**1**	**1**	0	**1**	**1**	0	1	2	1	1	2	1	29.1	31.5	C	C
Apache Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	1	0	1	0	0	0	0	2	1	1	2	0	--[4]	--[4]	F	F
-With Improvements	**TS**	1	0	1	0	0	0	0	2	1	1	2	0	3.7	6.3	A	A
Mohawk Tr./Acoma Tr. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	1	1	1	1	1	2	1	1	2	1	21.1	35.5	C	D
Church St. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0	1	0	0.5	0.5	1	1	2	1	1	2	1	--[4]	--[4]	F	F
-With Improvements	**TS**	**1**	1	0	**1**	**1**	0	1	2	1	1	2	1	24.9	43.6	C	D
Palm Av. (South) (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	1	0	1	0	0	0	0	2	1	1	2	0	--[4]	--[4]	F	F
Palm Av. (North) (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0	0	0	1	0	1	1	2	0	0	2	1	--[4]	--[4]	F	F
Palm Av. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)																	
-With Improvements[7]	**TS**	1	1	0	1	1	0	1	**3**	0	1	2	0	17.6	24.5	B	C
Sage Av. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	0	1	1	1	1	2	0	1	2	1	15.1	13.6	B	B
• Onaga Tr. (EW)	AWS	1	1	0	1	1	1	1	1	1	0	1	0	--[4]	--[4]	F	F
-With Improvements	**TS**	1	1	0	1	1	1	1	1	1	**1**	1	0	22.7	41.0	C	D
Old Woman Springs Rd. (SR-247) (NS) at:																	
• Paxton Rd. (EW)	CSS	0	1	1	1	1	0	0	0	0	0.5	0	0.5	76.7	--[4]	F	F
-With Improvements	**TS**	0	**2**	1	1	**2**	0	0	0	0	0.5	0	0.5	9.8	12.2	A	B

TABLE 5-1

INTERSECTION ANALYSIS SUMMARY FOR 2030 HORIZON YEAR WITHOUT PROJECT CONDITIONS

INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1]												Delay[2] (SEC)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
DESCRIPTION		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Old Woman Springs Rd. (SR-247)/Joshua Ln. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	2	1	1	2	1	1	2	0	1	2	0	31.7	39.1	C	D
Joshua Ln. (NS) at:																	
• Yucca Tr. (EW)	AWS	1	2	0	1	1	1	1	1	0	1	2	0	--[4]	--[4]	F	F
-With Improvements	**TS**	1	2	0	1	1	1	1	1	0	1	2	0	27.3	39.5	C	D
• Onaga Tr. (EW)	AWS	0	1	0	0.5	0.5	1	0	1	0	0	1	0	--[4]	--[4]	F	F
-With Improvements	**TS**	**1**	1	**1**	**1**	**1**	0	**2**	1	0	**1**	**2**	0	37.6	42.9	D	D
Warren Vista Av. (NS) :																	
• Yucca Tr. (EW)	CSS	0.5	0.5	1	0	1	0	0.5	0.5	1	0.5	0.5	1	84.0	--[4]	F	F
-With Improvements	**TS**	**1**	**1**	0	**1**	1	0	**1**	**1**	0	**1**	**1**	0	17.7	20.4	B	C
Balsa Av. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	0	1	1	0	1	2	1	1	2	0	16.7	18.9	B	B
Avalon Av. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	1	1	1	1	1	2	1	1	2	1	30.1	33.6	C	C
Palomar Av. (NS) at:																	
• Yucca Tr. (EW)	AWS	0	1	0	0	1	0	0	1	0	0.5	0.5	1	--[4]	--[4]	F	F
-With Improvements	**TS**	**1**	**2**	0	**1**	1	0	**1**	**2**	0	**1**	**1**	0	40.2	34.8	D	C
Indio Av. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	CSS	0	1	0	0	1	0	1	2	0	1	2	0	--[4]	--[4]	F	F
-With Improvements[6]	**TS**	**1**	1	0	**1**	1	0	1	2	0	1	2	0	13.6	15.5	B	B
Indio Av. (South) (NS) at:																	
• Yucca Tr. (EW)	CSS	0.5	0	0.5	0	0	0	0	1	0	0.5	0.5	0	27.4	40.1	D	E
-With Improvements	**AWS**	0.5	0	0.5	0	0	0	0	**2**	0	**1**	**2**	0	13.7	18.3	B	C
Indio Av. (North) (NS) at:																	
• Yucca Tr. (EW)	CSS	0	0	0	0.5	0	0.5	0.5	0.5	0	0	1	1	25.5	--[4]	D	F
-With Improvements	**TS**	0	0	0	0.5	0	0.5	**1**	**1**	0	0	1	1	6.6	9.2	A	A
Yucca Mesa Rd./La Contenta Rd. (NS) at:																	
• Twentynine Palms Hwy. (SR-62) (EW)	TS	1	1	1	1	1	0	1	2	1	1	2	1	19.3	24.5	B	C

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

L = Left; T = Through; R = Right; >> = Free Right Turn; > = Right Turn Overlap; **1** = Improvement.

[2] Delay and level of service calculated using the following analysis software: Traffix, Version 7.8 R2 (2006). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3] CSS = Cross Street Stop; TS = Traffic Signal; AWS = All-Way Stop.

[4] -- = Delay High or V/C Ratio exceeding 1.0, Intersection Unstable, Level of Service "F".

[5] Pedestrian crossing will be prohibited along the east and west legs of the intersection in order to provide acceptable LOS operations.

[6] This intersection does not warrant a traffic signal, however no other feasible improvements will provide acceptable LOS operations.

[7] The adjacent intersections of Palm Avenue (South) and Palm Avenue (North) at Twentynine Palms Highway (SR-62) are to be improvement by means of a single traffic signal to control both of them. Pedestrian crossing will be prohibited along the east leg of the intersection in order to provide acceptable LOS operations.

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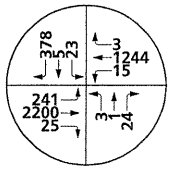
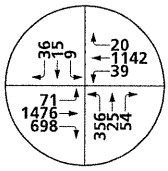
EXHIBIT 5-A

2030 HORIZON YEAR WITHOUT PROJECT AM PEAK HOUR INTERSECTION VOLUMES



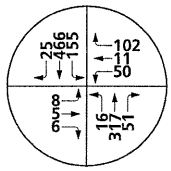
1

CAMINO DEL CIELO TR. & TWENTYNINE PALMS HWY. (SR-62)



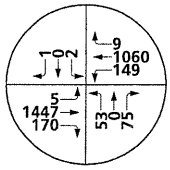
2

KICKAPOO TR. & TWENTYNINE PALMS HWY. (SR-62)



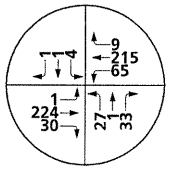
3

KICKAPOO TR. & SANTA FE TR.



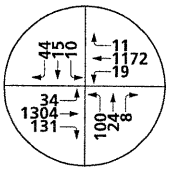
4

INCA TR. & TWENTYNINE PALMS HWY. (SR-62)



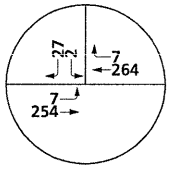
5

FOX TR. & YUCCA TR.



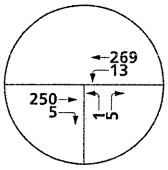
6

FOX TR. & TWENTYNINE PALMS HWY. (SR-62)



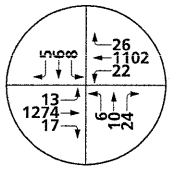
7

WAMEGO TR. & YUCCA TR.



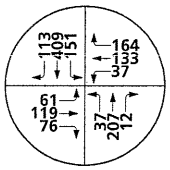
8

ELK TR. & YUCCA TR.



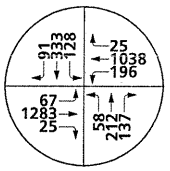
9

ELK TR. & TWENTYNINE PALMS HWY. (SR-62)



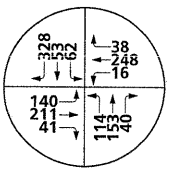
10

PIONEERTOWN RD. & YUCCA TR.



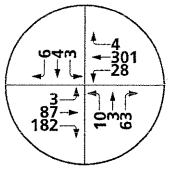
11

PIONEERTOWN RD./ DEER TR. & TWENTYNINE PALMS HWY. (SR-62)



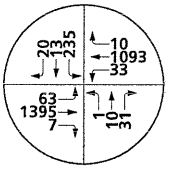
12

DEER TR. & SANTA FE TR.



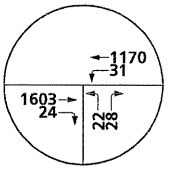
13

CHEROKEE TR. (SOUTH) & YUCCA TR.



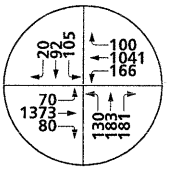
14

CHEROKEE TR. & TWENTYNINE PALMS HWY. (SR-62)



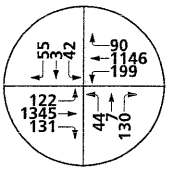
15

APACHE TR. & TWENTYNINE PALMS HWY. (SR-62)



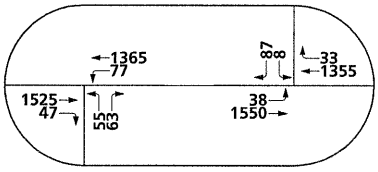
16

MOHAWK TR./ ACOMA TR. & TWENTYNINE PALMS HWY. (SR-62)



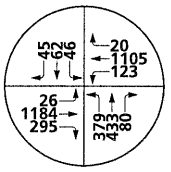
17

CHURCH ST. & TWENTYNINE PALMS HWY. (SR-62)



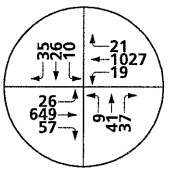
18, 19

PALM AV. (SOUTH AND NORTH) & TWENTYNINE PALMS HWY. (SR-62)



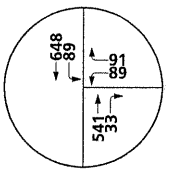
20

SAGE AV. & TWENTYNINE PALMS HWY. (SR-62)



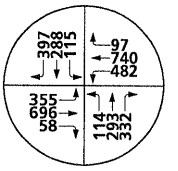
21

SAGE AV. & ONAGA TR.



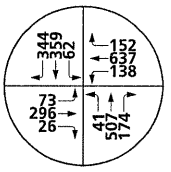
22

OLD WOMAN SPRINGS RD. (SR-247) & PAXTON RD.



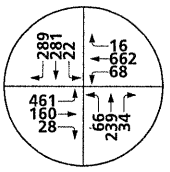
23

OLD WOMAN SPRINGS RD. (SR-247)/JOSHUA LN. & TWENTYNINE PALMS HWY. (SR-62)



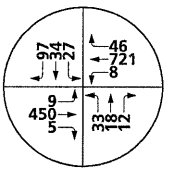
24

JOSHUA LN. & YUCCA TR.



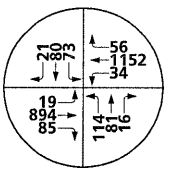
25

JOSHUA LN. & ONAGA TR.



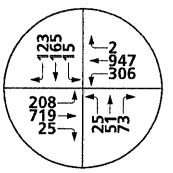
26

WARREN VISTA AV. & YUCCA TR.



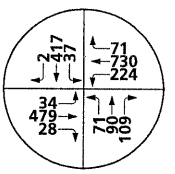
27

BALSA AV. & TWENTYNINE PALMS HWY. (SR-62)



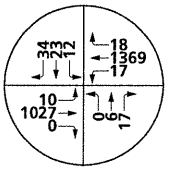
28

AVALON AV. & TWENTYNINE PALMS HWY. (SR-62)



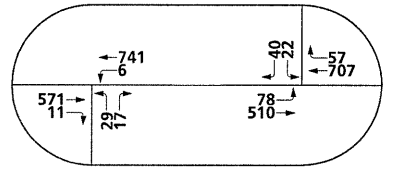
29

PALOMAR AV. & YUCCA TR.



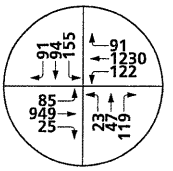
30

INDIO AV. & TWENTYNINE PALMS HWY. (SR-62)



31, 32

INDIO AV. (SOUTH AND NORTH) & YUCCA TR.



33

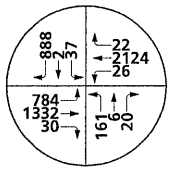
YUCCA MESA RD./LA CONTENTA RD. & TWENTYNINE PALMS HWY. (SR-62)

N

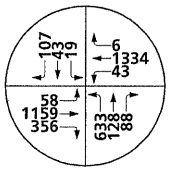
URBAN CROSSROADS

EXHIBIT 5-B

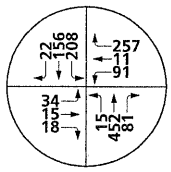
2030 HORIZON YEAR WITHOUT PROJECT PM PEAK HOUR INTERSECTION VOLUMES



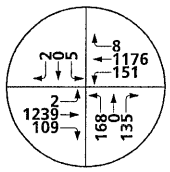
1
CAMINO DEL CIELO TR. & TWENTYNINE PALMS HWY. (SR-62)



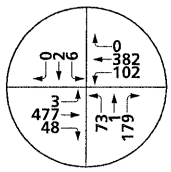
2
KICKAPOO TR. & TWENTYNINE PALMS HWY. (SR-62)



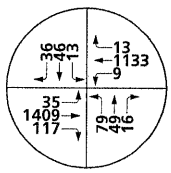
3
KICKAPOO TR. & SANTA FE TR.



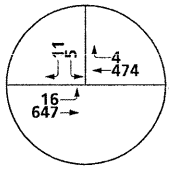
4
INCA TR. & TWENTYNINE PALMS HWY. (SR-62)



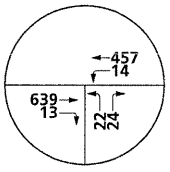
5
FOX TR. & YUCCA TR.



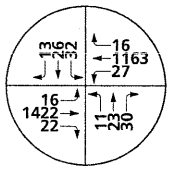
6
FOX TR. & TWENTYNINE PALMS HWY. (SR-62)



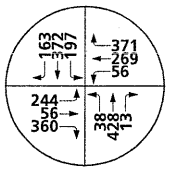
7
WAMEGO TR. & YUCCA TR.



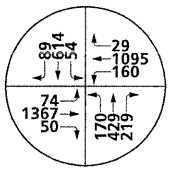
8
ELK TR. & YUCCA TR.



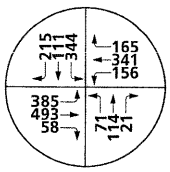
9
ELK TR. & TWENTYNINE PALMS HWY. (SR-62)



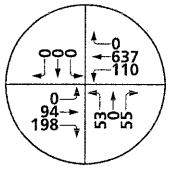
10
PIONEERTOWN RD. & YUCCA TR.



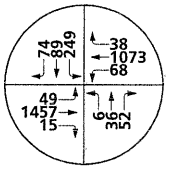
11
PIONEERTOWN RD./ DEER TR. & TWENTYNINE PALMS HWY. (SR-62)



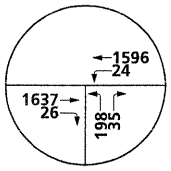
12
DEER TR. & SANTA FE TR.



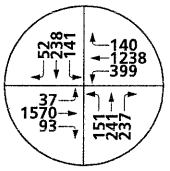
13
CHEROKEE TR. (SOUTH) & YUCCA TR.



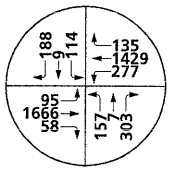
14
CHEROKEE TR. & TWENTYNINE PALMS HWY. (SR-62)



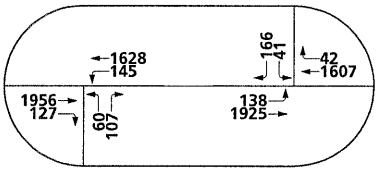
15
APACHE TR. & TWENTYNINE PALMS HWY. (SR-62)



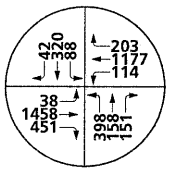
16
MOHAWK TR./ ACOMA TR. & TWENTYNINE PALMS HWY. (SR-62)



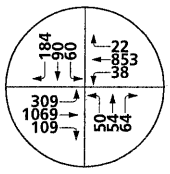
17
CHURCH ST. & TWENTYNINE PALMS HWY. (SR-62)



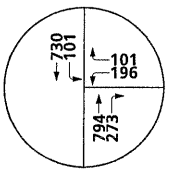
18, 19
PALM AV. (SOUTH AND NORTH) & TWENTYNINE PALMS HWY. (SR-62)



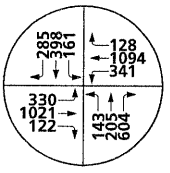
20
SAGE AV. & TWENTYNINE PALMS HWY. (SR-62)



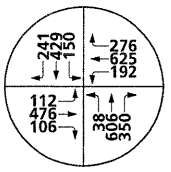
21
SAGE AV. & ONAGA TR.



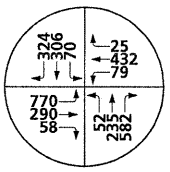
22
OLD WOMAN SPRINGS RD. (SR-247) & PAXTON RD.



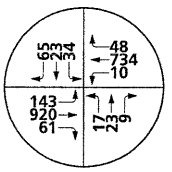
23
OLD WOMAN SPRINGS RD. (SR-247)/JOSHUA LN. & TWENTYNINE PALMS HWY. (SR-62)



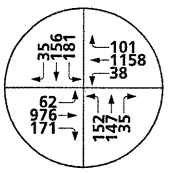
24
JOSHUA LN. & YUCCA TR.



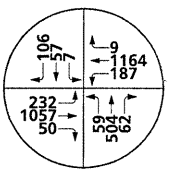
25
JOSHUA LN. & ONAGA TR.



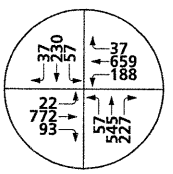
26
WARREN VISTA AV. & YUCCA TR.



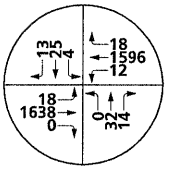
27
BALSA AV. & TWENTYNINE PALMS HWY. (SR-62)



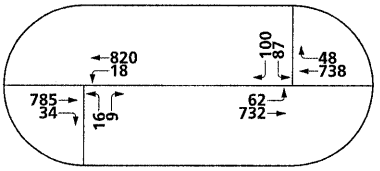
28
AVALON AV. & TWENTYNINE PALMS HWY. (SR-62)



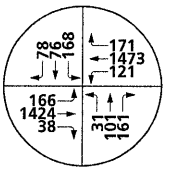
29
PALOMAR AV. & YUCCA TR.



30
INDIO AV. & TWENTYNINE PALMS HWY. (SR-62)



31, 32
INDIO AV. (SOUTH AND NORTH) & YUCCA TR.



33
YUCCA MESA RD./LA CONTENTA RD. & TWENTYNINE PALMS HWY. (SR-62)

N

URBAN CROSSROADS

Elk Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Pioneertown Road (NS) at:

- Yucca Trail (EW)

Deer Trail (NS) at:

- Santa Fe Trail (EW)

Cherokee Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Apache Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Church Street (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Palm Avenue (South) (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Palm Avenue (North) (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Sage Avenue (NS) at:

- Onaga Trail (EW)

Old Woman Springs Road (SR-247) (NS) at:

- Paxton Road (EW)

Joshua Lane (NS) at:

- Yucca Trail (EW)
- Onaga Trail (EW)

Warren Vista Avenue (NS) at:

- Yucca Trail (EW)

Palomar Avenue (NS) at:

- Yucca Trail (EW)

Indio Avenue (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Indio Avenue (South) (NS) at:

- Yucca Trail (EW)

Indio Avenue (North) (NS) at:

- Yucca Trail (EW)

In addition, traffic signal control is anticipated to be warranted at the following study area intersection for 2030 Horizon Year without project conditions. Although the intersection is projected to operate at acceptable levels of service, it was also analyzed assuming the provision of traffic signal control:

Cherokee Trail (South) (NS) at:

- Yucca Trail (EW)

Three of the study area intersections that have been identified as operationally deficient do not meet planning level signal warrants. Improvements analysis has included traffic signal control, as no other feasible improvements will provide acceptable level of service operations at the following locations:

Elk Trail (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Indio Avenue (NS) at:

- Twentynine Palms Highway (SR-62) (EW)

Indio Avenue (South) (NS) at:

- Yucca Trail (EW)

The adjacent intersections of Palm Avenue (South) and Palm Avenue (North) at Twentynine Palms Highway (SR-62) present a special case. Both Palm Avenue intersections with Twentynine Palms Highway (SR-62) warrant traffic signal control and operate at deficient levels of service under 2030 Horizon Year without project conditions. In order to provide acceptable traffic operations, a traffic signal is proposed which will control both Palm Avenue (South and North) intersections with Twentynine Palms Highway (SR-62). The Caltrans Traffic Manual requires that offset intersections be within 60 meters (outside curb-to-outside curb distance) of each other in order to be signalized as a single intersection. The Palm Avenue (South and North) legs fit this criterion. This improvement for the Palm Avenue intersections with Twentynine Palms Highway (SR-62) are also assumed in the 2030 Horizon Year with project operations analysis.

The intersection operations analyses for 2030 Horizon Year without project conditions with improvements are also included in Table 5-1. As shown in Table 5-1, all of the study area intersections are projected to operate at acceptable levels of service during the peak hours, with the identified improvements.

5.1.2 2030 Horizon Year With Project Conditions

The intersection operations analysis for 2030 Horizon Year with project conditions is summarized in Table 5-2. 2030 Horizon Year with project AM and PM peak hour intersection turning movement volumes are presented on Exhibits 5-C and 5-D, respectively. The operations analysis worksheets

TABLE 5-2

INTERSECTION ANALYSIS SUMMARY FOR 2030 HORIZON YEAR WITH PROJECT CONDITIONS

INTERSECTION DESCRIPTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	Delay[2] (SEC) AM	PM	LEVEL OF SERVICE AM	PM
Camino del Cielo Tr. (NS) at:																	
• SR-62 (EW)	CSS	0.5	0.5	1	0.5	0.5	1	1	2	0	1	1	0	--[4]	--[4]	F	F
-With Improvements[5]	**TS**	**1**	**1**	0	**1**	**1**	**2>**	**2**	2	0	1	**3**	0	24.2	30.5	C	C
Kickapoo Tr. (NS) at:																	
• SR-62 (EW)[6]	TS	1	1	1	1	1	1	1	2	0	1	2	0	53.5	42.9	F	D
-With Improvements[5]	TS	**2**	1	0	1	1	1	1	**3**	0	1	**3**	0	34.3	28.9	C	C
• Santa Fe Tr. (EW)	CSS	1	1	0	0	1	0	0	1	0	1	1	0	--[4]	--[4]	F	F
-With Improvements	**TS**	1	1	0	**1**	1	0	**1**	1	0	1	1	0	28.3	46.7	C	D
Main St. (Western Gateway) (NS) at:																	
• SR-62 (EW)[7]	--	[NEW / REALIGNED SR-62 INTERSECTION]												--	--	--	--
-With Improvements	**TS**	**1**	0	**1**	0	0	0	0	**3**	0	**1**	**3**	0	6.5	8.9	A	A
Fox Tr. (NS) at:																	
• SR-62 (EW)[6]	--	[NEW / REALIGNED SR-62 INTERSECTION]												--	--	--	--
-With Improvements	CSS	0	0	**1**	0	0	0	0	**3**	0	0	**3**	0	13.8	22.5	B	C
• Main St. (EW)[6]	CSS	0	1	0	0	1	0	1	1	0	1	1	0	19.6	16.8	C	C
Wamego Tr. (NS) at:																	
• SR-62 (EW)[6]	--	[NEW / REALIGNED SR-62 INTERSECTION]												--	--	--	--
-With Improvements	CSS	0	0	0	0	0	**1**	0	**3**	0	0	**3**	0	10.6	11.8	B	B
Elk Tr. (NS) at:																	
• SR-62 (EW)[6]	--	[NEW / REALIGNED SR-62 INTERSECTION]												--	--	--	--
-With Improvements	CSS	0	0	**1**	0	0	0	0	**3**	0	0	**3**	0	12.4	15.7	B	C
• Main St. (EW)[6]	CSS	0	1	0	0	1	0	1	1	0	1	1	0	12.1	12.3	B	B
Pioneertown Rd. (NS) at:																	
• SR-62 (EW)[6]	--	[NEW / REALIGNED SR-62 INTERSECTION]												--	--	--	--
-With Improvements	**TS**	1	1	0	1	1	**1**	**1**	**3**	0	**1**	**3**	0	29.3	39.6	C	D
Pioneertown Rd./Deer Tr. (NS) at:																	
• Main St. (EW)[6]	TS	1	1	0	1	1	0	1	1	0	1	1	0	18.1	16.9	B	B
Deer Tr. (NS) at:																	
• Santa Fe Tr. (EW)	CSS	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	--[4]	--[4]	F	F
-With Improvements	**TS**	**1**	**1**	0	**1**	**1**	0	**1**	**1**	0	**1**	**1**	0	28.6	35.9	C	D
Cherokee Tr. (South) (NS) at:																	
• SR-62 (EW)[6]	--	[NEW / REALIGNED SR-62 INTERSECTION]												--	--	--	--
-With Improvements	CSS	0	0	**1**	0	0	0	0	**3**	0	0	**3**	0	11.9	13.3	B	B
Cherokee Tr. (NS) at:																	
• Main St. (EW)[6]	CSS	0	1	0	0	1	0	1	1	0	1	1	0	13.5	11.7	B	B
Main St. (Eastern Gateway) (NS) at:																	
• SR-62 (EW)[7]	--	[NEW / REALIGNED SR-62 INTERSECTION]												--	--	--	--
-With Improvements	**TS**	**1**	0	**1**	0	0	0	0	**3**	0	**1**	**3**	0	12.7	12.8	B	B
Apache Tr. (NS) at:																	
• SR-62 (EW)[6]	--	[NEW / REALIGNED SR-62 INTERSECTION]												--	--	--	--
-With Improvements	CSS	0	0	**1**	0	0	0	0	**3**	0	0	**3**	0	12.9	15.7	B	C
Mohawk Tr./Acoma Tr. (NS) at:																	
• SR-62 (EW)[6]	TS	1	1	1	1	1	1	1	3	0	1	3	0	33.5	40.0	C	D
Church St. (NS) at:																	
• SR-62 (EW)	CSS	0	1	0	0.5	0.5	1	1	2	1	1	2	1	--[4]	--[4]	F	F
-With Improvements	**TS**	**1**	1	0	**1**	**1**	0	1	2	1	1	2	1	22.7	41.5	C	D
Palm Av. (South) (NS) at:																	
• SR-62 (EW)	CSS	1	0	1	0	0	0	0	2	1	1	2	0	--[4]	--[4]	F	F
Palm Av. (North) (NS) at:																	
• SR-62 (EW)	CSS	0	0	0	1	0	1	1	2	0	0	2	1	--[4]	--[4]	F	F
Palm Avenue (NS) at:																	
• SR-62 (EW)																	
-With Improvements[8]	**TS**	1	1	0	1	1	0	1	**3**	0	1	2	0	16.5	20.0	B	C
Sage Av. (NS) at:																	
• SR-62 (EW)	TS	1	1	0	1	1	1	1	2	0	1	2	1	10.7	15.6	B	B
• Onaga Tr. (EW)	AWS	1	1	0	1	1	1	1	1	1	0	1	0	--[4]	--[4]	F	F
-With Improvements	**TS**	1	1	0	1	1	1	1	1	1	**1**	1	0	23.3	29.6	C	C
Old Woman Springs Rd. (SR-247) (NS) at:																	
• Paxton Rd. (EW)	CSS	0	1	1	1	1	0	0	0	0	0.5	0	0.5	--[4]	--[4]	F	F
-With Improvements	**TS**	0	**2**	1	1	**2**	0	0	0	0	0.5	0	0.5	12.1	13.8	B	B

TABLE 5-2

INTERSECTION ANALYSIS SUMMARY FOR 2030 HORIZON YEAR WITH PROJECT CONDITIONS

INTERSECTION		INTERSECTION APPROACH LANES[1]												Delay[2] (SEC)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
DESCRIPTION	TRAFFIC CONTROL[3]	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Old Woman Springs Rd. (SR-247)/Joshua Ln. (NS) at:																	
• SR-62 (EW)	TS	1	2	1	1	2	1	1	2	0	1	2	0	37.5	--[4]	D	F
-With Improvements	TS	1	2	1	1	2	1	1	2	0	**2**	2	0	27.9	38.5	C	D
Joshua Ln. (NS) at:																	
• Yucca Tr. (EW)	AWS	1	2	0	1	1	1	1	1	0	1	2	0	--[4]	--[4]	F	F
-With Improvements	**TS**	1	2	0	1	1	1	1	1	0	1	2	0	32.8	47.4	C	D
• Onaga Tr. (EW)	AWS	0	1	0	0.5	0.5	1	0	1	0	0	1	0	--[4]	--[4]	F	F
-With Improvements	**TS**	**1**	1	0	**1**	**1**	0	**2**	1	0	**1**	**2**	0	40.8	52.3	D	D
Warren Vista Av. (NS) :																	
• Yucca Tr. (EW)	CSS	0.5	0.5	1	0	1	0	0.5	0.5	1	0.5	0.5	1	47.7	--[4]	E	F
-With Improvements	**TS**	**1**	**1**	0	**1**	1	0	**1**	**1**	0	**1**	**1**	0	13.3	17.3	B	B
Balsa Av. (NS) at:																	
• SR-62 (EW)	TS	1	1	0	1	1	0	1	2	1	1	2	0	15.0	17.1	B	B
Avalon Av. (NS) at:																	
• SR-62 (EW)	TS	1	1	1	1	1	1	1	2	1	1	2	1	25.6	30.5	C	C
Palomar Av. (NS) at:																	
• Yucca Tr. (EW)	AWS	0	1	0	0	1	0	0	1	0	0.5	0.5	1	--[4]	--[4]	F	F
-With Improvements	**TS**	**1**	**2**	0	**1**	1	0	**1**	**2**	0	**1**	**1**	0	27.7	35.2	C	D
Indio Av. (NS) at:																	
• SR-62 (EW)	CSS	0	1	0	0	1	0	1	2	0	1	2	0	--[4]	--[4]	F	F
-With Improvements[9]	**TS**	**1**	1	0	**1**	1	0	1	2	0	1	2	0	13.2	16.1	B	B
Indio Av. (South) (NS) at:																	
• Yucca Tr. (EW)	CSS	0.5	0	0.5	0	0	0	0	1	0	0.5	0.5	0	26.7	40.5	D	E
-With Improvements	**AWS**	0.5	0	0.5	0	0	0	0	**2**	0	**1**	**2**	0	13.4	18.6	B	C
Indio Av. (North) (NS) at:																	
• Yucca Tr. (EW)	CSS	0	0	0	0.5	0	0.5	0.5	0.5	0	0	1	1	24.6	--[4]	C	F
-With Improvements	**TS**	0	0	0	0.5	0	0.5	**1**	**1**	0	0	1	1	6.6	9.4	A	A
Yucca Mesa Rd./La Contenta Rd. (NS) at:																	
• SR-62 (EW)	TS	1	1	1	1	1	0	1	2	1	1	2	1	17.7	20.8	B	C

---

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

L = Left; T = Through; R = Right; >> = Free Right Turn; > = Right Turn Overlap; **1** = Improvement.

[2] Delay and level of service calculated using the following analysis software: Traffix, Version 7.8 R2 (2006). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3] CSS = Cross Street Stop; TS = Traffic Signal; AWS = All-Way Stop.

[4] -- = Delay High or V/C Ratio exceeding 1.0, Intersection Unstable, Level of Service "F".

[5] Pedestrian crossing will be prohibited along the west and/or east legs of the intersection in order to provide acceptable LOS operations.

[6] Geometric changes assumed at intersection in conjunction with the SR-62 Realignment (Alt. D) and proposed Old Town Yucca Valley Specific Plan Circulation Plan.

[7] New analysis locations resulting from the SR-62 Realignment (Alt. D) and proposed Old Town Yucca Valley Specific Plan Circulation Plan.

[8] The adjacent intersections of Palm Avenue (South) and Palm Avenue (North) at SR-62 are to be improved by means of a single traffic signal to control both of them. Pedestrian crossing will be prohibited along the east leg of the intersection in order to provide acceptable LOS operations.

[9] This intersection does not warrant a traffic signal, however no other feasible improvements will provide acceptable LOS operations.

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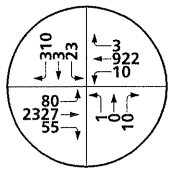
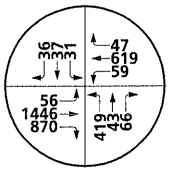
EXHIBIT 5-C

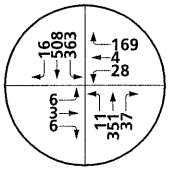
2030 HORIZON YEAR WITH PROJECT AM PEAK HOUR INTERSECTION VOLUMES



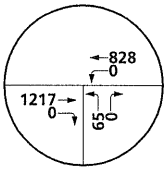
1
CAMINO DEL CIELO TR. & SR-62



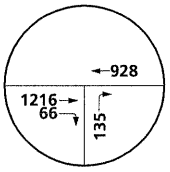
2
KICKAPOO TR. & SR-62



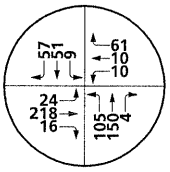
3
KICKAPOO TR. & SANTA FE TR.



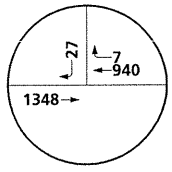
4
MAIN ST. (WESTERN GATEWAY) & SR-62



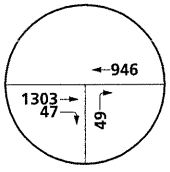
5
FOX TR. & SR-62



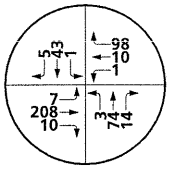
6
FOX TR. & MAIN ST.



7
WAMEGO TR. & SR-62



8
ELK TR. & SR-62



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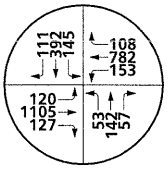
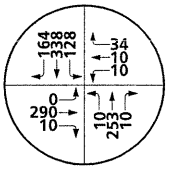
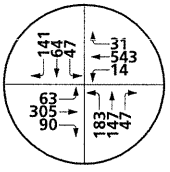


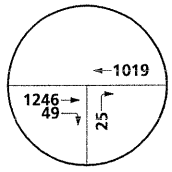
10
PIONEERTOWN RD. & SR-62



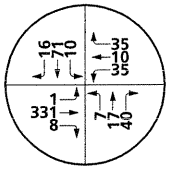
11
PIONEERTOWN RD./ DEER TR. & MAIN ST.



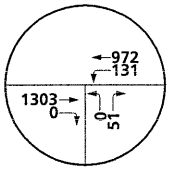
12
DEER TR. & SANTA FE TR.



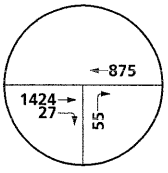
13
CHEROKEE TR. (SOUTH) & SR-62



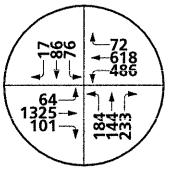
14
CHEROKEE TR. & MAIN ST.



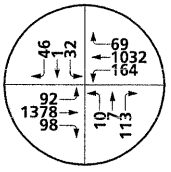
15
MAIN ST. (EASTERN GATEWAY) & SR-62



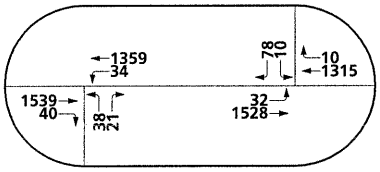
16
APACHE TR. & SR-62



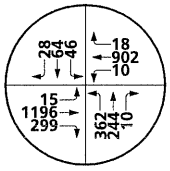
17
MOHAWK TR./ ACOMA TR. & SR-62



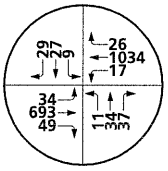
18
CHURCH ST. & SR-62



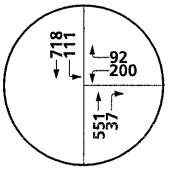
19, 20
PALM AV. (SOUTH AND NORTH) & SR-62



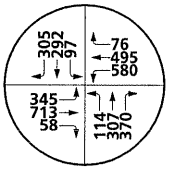
21
SAGE AV. & SR-62



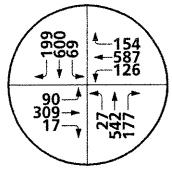
22
SAGE AV. & ONAGA TR.



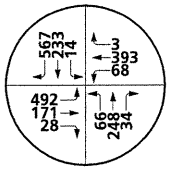
23
OLD WOMAN SPRINGS RD. (SR-247) & PAXTON RD.



24
OLD WOMAN SPRINGS RD. (SR-247)/JOSHUA LN. & SR-62



25
JOSHUA LN. & YUCCA TR.



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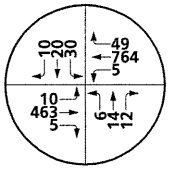

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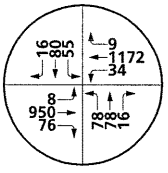

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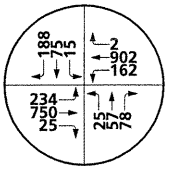

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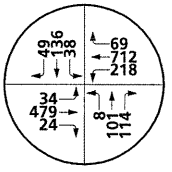

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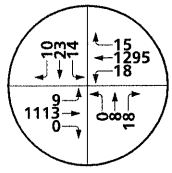

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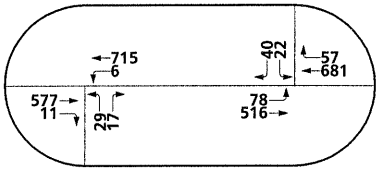

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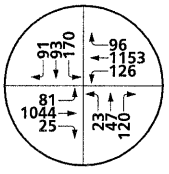

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YUCCA MESA RD./LA CONTENTA RD. & SR-62

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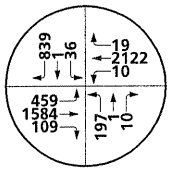
EXHIBIT 5-D

2030 HORIZON YEAR WITH PROJECT PM PEAK HOUR INTERSECTION VOLUMES



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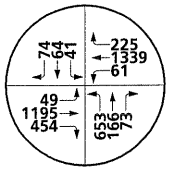

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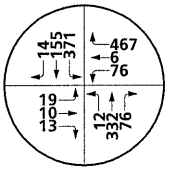

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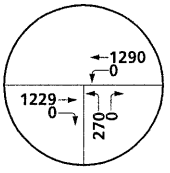

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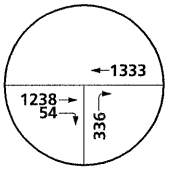

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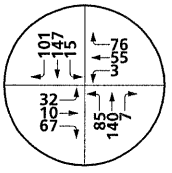

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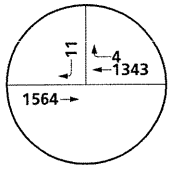

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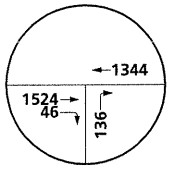

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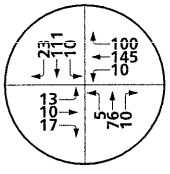

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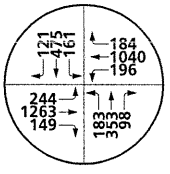

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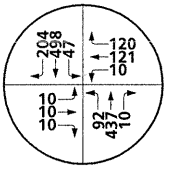

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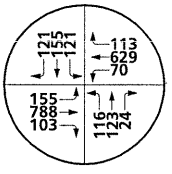
PIONEERTOWN RD./ DEER TR. & MAIN ST.



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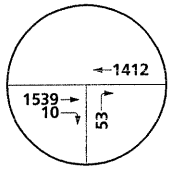
DEER TR. & SANTA FE TR.



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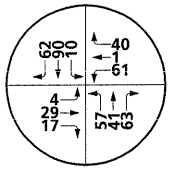
CHEROKEE TR. (SOUTH) & SR-62



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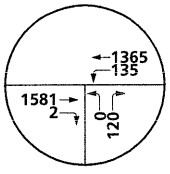

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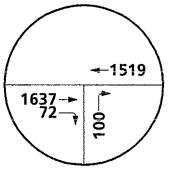

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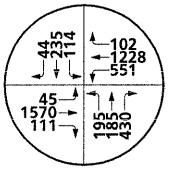

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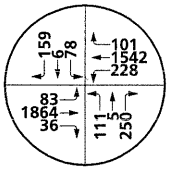

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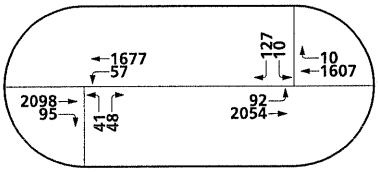
CHURCH ST. & SR-62



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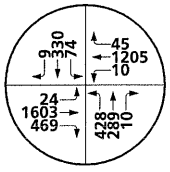
PALM AV. (SOUTH AND NORTH) & SR-62



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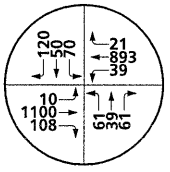

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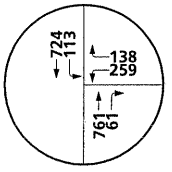

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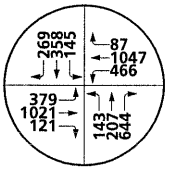

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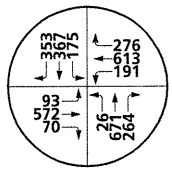

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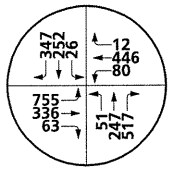

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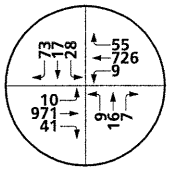

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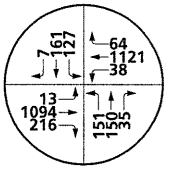

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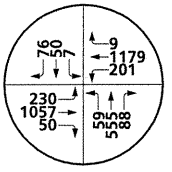

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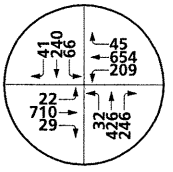

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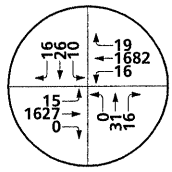

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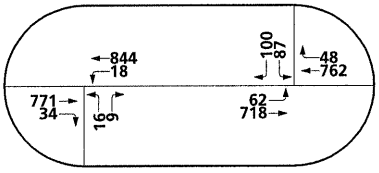
INDIO AV. & SR-62



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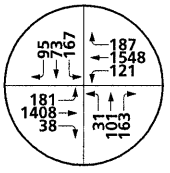

34
YUCCA MESA RD./LA CONTENTA RD. & SR-62

N

for 2030 Horizon Year with project conditions are included in Appendix G. As shown in Table 5-2, the following study area intersections are projected to experience unacceptable levels of service during the peak hours (without improvements) and are, therefore, deficient per the Town of Yucca Valley/County of San Bernardino criteria:

Camino del Cielo Trail (NS) at:

- SR-62 (EW)

Kickapoo Trail (NS) at:

- Santa Fe Trail (EW)

Pioneertown Road (NS) at:

- SR-62 (EW)

Deer Trail (NS) at:

- Santa Fe Trail (EW)

Church Street (NS) at:

- SR-62 (EW)

Palm Avenue (South) (NS) at:

- SR-62 (EW)

Palm Avenue (North) (NS) at:

- SR-62 (EW)

Sage Avenue (NS) at:

- Onaga Trail (EW)

Old Woman Springs Road (SR-247) (NS) at:

- Paxton Road (EW)

Old Woman Springs Road (SR-247)/Joshua Lane (NS) at:

- SR-62 (EW)

Joshua Lane (NS) at:

- Yucca Trail (EW)
- Onaga Trail (EW)

Warren Vista Avenue (NS) at:

- Yucca Trail (EW)

Palomar Avenue (NS) at:

- Yucca Trail (EW)

Indio Avenue (NS) at:

- SR-62 (EW)

Indio Avenue (South) (NS) at:

- Yucca Trail (EW)

Indio Avenue (North) (NS) at:

- Yucca Trail (EW)

The intersections (outside the project area) expected to experience deficient operations are identical to the intersections identified for 2030 without project conditions.

Two of the study area intersections that have been identified as operationally deficient do not meet planning level signal warrants. Improvements analysis has included traffic signal control, as no other feasible improvements will provide acceptable level of service operations at the following locations:

Indio Avenue (NS) at:

- SR-62 (EW)

Indio Avenue (South) (NS) at:

- Yucca Trail (EW)

The intersection operations analyses for 2030 Horizon Year with project conditions with improvements are also included in Table 5-2. As shown in Table 5-2, all of the study area intersections are projected to operate at acceptable levels of service during the peak hours, with the identified improvements. Most of the differences in required improvements compared to the 2030 without project (currently adopted General Plan) conditions occur with the Old Town Specific Plan area and are a direct result of the proposed realignment of SR-62. The only other difference identified through this analysis is a second (2nd) westbound left turn lane at the intersection of SR-247 and SR-62.

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6.0 IMPROVEMENT COSTS AND PROJECT CONTRIBUTION

This section of the report summarizes the improvements and associated costs required to meet CMP level of service requirements at CMP analysis locations.

Improvements which will eliminate all anticipated roadway operational deficiencies throughout the study area have been identified for 2030 Horizon Year traffic conditions. The improvements were determined as part of the operations analysis contained in Section 5.

The approximate costs for the CMP 2030 Horizon Year improvements have been estimated using cost data contained in the Appendix G of the San Bernardino County CMP (see Appendix H).

6.1 2030 CMP Required Improvements and Costs

Table 6-1 specifies the needed 2030 improvements and resulting costs for the study area intersections. As indicated in Table 6-1, the total local cost of needed intersection improvements is approximately $18,274,832 for all study intersection improvements.

6.2 2030 Project Fair Share Calculations

The project fair share contribution towards the required improvements has also been calculated. Table 6-2 includes the project's local cost contributions, based on the project's percent of new traffic. As indicated in Table 6-2, the higher AM or PM fair share cost totals for improvements is approximately $9,831,749.

TABLE 6-1 (Page 1 of 3)

2030 ROADWAY IMPROVEMENT COSTS

INTERSECTION	IMPROVEMENT	TOTAL COST
Camino Del Cielo Tr. (NS) at:		
• SR-62 (EW)	Install a traffic signal	$250,000
	Restripe NB shared left through lane as 1st exclusive left turn lane	$15,000
	Reconstruct NB right turn lane as 1st through lane	$50,000
	Restripe SB shared left through lane as 1st exclusive left turn lane	$15,000
	Construct 1st SB through lane	$289,720
	Construct 2nd SB right turn lane with Overlap phase	$75,000
	Construct 2nd EB Left Turn lane	$50,000
	Construct 2nd and 3rd WB through lane	$579,440
	Subtotal	**$1,324,160**
Kickapoo Tr. (NS) at:		
• SR-62 (EW)	Construct 2nd NB Left Turn Lane	$50,000
	Construct 3rd EB Through Lane	$289,720
	Construct 3rd WB Through Lane	$289,720
	Subtotal	**$629,440**
• Sante Fe Tr. (EW)	Install a traffic signal	$250,000
	Construct 1st SB Left Turn Lane	$50,000
	Construct 1st EB Left Turn Lane	$50,000
	Subtotal	**$350,000**
Main St. (Western Gateway) (NS) at:		
• SR-62 (EW)	Install a traffic signal	$250,000
	Construct 1st NB Left Turn Lane	$50,000
	Construct 1st NB Right Turn Lane	$50,000
	Construct 1st, 2nd, and 3rd EB Through Lanes [1]	$1,057,020
	Construct 1st WB Left Turn Lane	$50,000
	Construct 1st, 2nd, and 3rd WB Through Lanes [1]	$1,057,020
	Subtotal	**$2,514,040**
Fox Tr. (NS) at:		
• SR-62 (EW)	Construct 1st NB Right Turn Lane	$50,000
	Construct 1st, 2nd, and 3rd EB Through Lanes [1]	$698,103
	Construct 1st, 2nd, and 3rd WB Through Lanes [1]	$698,103
	Subtotal	**$1,446,206**
Wamego Tr. (NS) at:		
• SR-62 (EW)	Construct 1st SB Right Turn Lane	$50,000
	Construct 1st, 2nd, and 3rd EB Through Lanes [1]	$153,870
	Construct 1st, 2nd, and 3rd WB Through Lanes [1]	$153,870
	Subtotal	**$357,740**
Elk Tr. (NS) at:		
• SR-62 (EW)	Construct 1st NB Right Turn Lane	$50,000
	Construct 1st, 2nd, and 3rd EB Through Lanes [1]	$235,488
	Construct 1st, 2nd, and 3rd WB Through Lanes [1]	$235,488
	Subtotal	**$520,976**
Pioneertown Rd. (NS) at:		
• SR-62 (EW)	Install a traffic signal	$250,000
	Construct 1st NB Left Turn Lane	$50,000
	Construct 1st NB Through Lane	$289,720
	Construct 1st SB Left Turn Lane	$50,000
	Construct 1st SB through lane	$289,720
	Construct 1st SB Right Turn Lane	$50,000
	Construct 1st EB Left Turn Lane	$50,000
	Construct 1st, 2nd, and 3rd EB Through Lanes [1]	$324,132
	Construct 1st WB Left Turn Lane	$50,000
	Construct 1st, 2nd, and 3rd WB Through Lanes [1]	$324,132
	Subtotal	**$1,727,704**
Deer Tr. (NS) at:		
• Sante Fe Tr. (EW)	Install a traffic signal	$250,000
	Restripe NB shared left through lane as 1st exclusive left turn lane	$15,000
	Reconstruct NB right turn lane as 1st through lane	$50,000
	Restripe SB shared left through lane as 1st exclusive left turn lane	$15,000
	Reconstruct SB right turn lane as 1st through lane	$50,000
	Restripe EB shared left through lane as 1st exclusive left turn lane	$15,000
	Reconstruct EB right turn lane as 1st through lane	$50,000
	Restripe WB shared left through lane as 1st exclusive left turn lane	$15,000
	Reconstruct WB right turn lane as 1st through lane	$50,000
	Subtotal	**$510,000**

TABLE 6-1 (Page 2 of 3)

2030 ROADWAY IMPROVEMENT COSTS

INTERSECTION	IMPROVEMENT	TOTAL COST
Cherokee Tr. (NS) at:		
• SR-62 (EW)	Construct 1st NB Right Turn Lane	$50,000
	Construct 1st, 2nd, and 3rd EB Through Lanes [1]	$353,232
	Construct 1st, 2nd, and 3rd WB Through Lanes [1]	$353,232
		$756,464
Main St. (Eastern Gateway) (NS) at:		
• SR-62 (EW)	Install a traffic signal	$250,000
	Construct 1st NB Left Turn Lane	$50,000
	Construct 1st NB Right Turn Lane	$50,000
	Construct 1st, 2nd, and 3rd EB Through Lanes [1]	$360,591
	Construct 1st WB Left Turn Lane	$50,000
	Construct 1st, 2nd, and 3rd WB Through Lanes [1]	$360,591
	Subtotal	**$1,121,182**
Apache Tr. (NS) at:		
• SR-62 (EW)	Construct 1st NB Right Turn Lane	$50,000
	Reconstruct Existing EB Right Turn Lane as 3rd Through Lane	$50,000
	Reconstruct Existing WB Left Turn Lane as 3rd Through Lane	$50,000
	Subtotal	**$150,000**
Mohawk Tr./Acoma Tr. (NS) at:		
• SR-62 (EW)	Reconstruct Existing EB Right Turn Lane as 3rd Through Lane	$50,000
	Reconstruct Existing WB Right Turn Lane as 2nd Through Lane	$50,000
	Construct 3rd WB Through Lane	$289,720
	Subtotal	**$389,720**
Church St. (NS) at:		
• SR-62 (EW)	Install a traffic signal	$250,000
	Construct 1st NB Left Turn Lane	$50,000
	Restripe SB shared left through lane as 1st exclusive left turn lane	$15,000
	Reconstruct SB Right Turn Lane as 1st Through lane	$50,000
	Subtotal	**$365,000**
Palm Av. (South) (NS) at:		
• SR-62 (EW)	Install a Traffic Signal[2]	$125,000
	Construct 3rd EB Through Lane	$289,720
	Subtotal	**$414,720**
Palm Av. (North) (NS) at:		
• SR-62 (EW)	Install a Traffic Signal[2]	$125,000
	Subtotal	**$125,000**
Sage Av. (NS) at:		
• Onaga Tr. (EW)	Install a traffic signal	$250,000
	Construct 1st WB Left Turn Lane	$50,000
	Subtotal	**$300,000**
Old Woman Springs Rd. (SR 247) (NS) at:		
• Paxton Rd. (EW)	Install a Traffic Signal	$250,000
	Construct 2nd NB Through Lane	$289,720
	Construct 2nd SB Through Lane	$289,720
	Subtotal	**$829,440**
Old Woman Springs Rd. (SR 247)/Joshua Ln. (NS) at:		
• SR-62 (EW)	Construct 2nd WB Left Turn Lane	$50,000
	Subtotal	**$50,000**
Joshua Ln. (NS) at:		
• Yucca Tr. (EW)	Install a Traffic Signal	$250,000
	Subtotal	**$250,000**
• Onaga Tr. (EW)	Install a Traffic Signal	$250,000
	Construct 1st NB Left Turn Lane	$50,000
	Restripe SB Shared Left Through Lane as 1st Exclusive Left Turn Lane	$15,000
	Reconstruct SB Right Turn Lane as 1st Through Lane	$50,000
	Construct 1st and 2nd EB Left Turn Lanes	$100,000
	Construct 1st WB Left Turn Lane	$50,000
	Construct 2nd WB Through Lane	$289,720
	Subtotal	**$804,720**

TABLE 6-1 (Page 3 of 3)

2030 ROADWAY IMPROVEMENT COSTS

INTERSECTION	IMPROVEMENT	TOTAL COST
Warren Vista Av. (NS) :		
• Yucca Tr. (EW)	Install a Traffic Signal	$250,000
	Restripe NB Shared Left Through Lane as 1st Exclusive Left Turn Lane	$15,000
	Reconstruct NB Right Turn Lane as 1st Through Lane	$50,000
	Construct 1st SB Left Turn Lane	$50,000
	Restripe EB Shared Left Through Lane as 1st Exclusive Left Turn Lane	$15,000
	Reconstruct EB Right Turn Lane as 1st Through Lane	$50,000
	Restripe WB Shared Left Through Lane as 1st Exclusive Left Turn Lane	$15,000
	Reconstruct WB Right Turn Lane as 1st Through Lane	$50,000
	Subtotal	**$495,000**
Palomar Av. (NS) at:		
• Yucca Tr. (EW)	Install a Traffic Signal	$250,000
	Construct 1st NB Left Turn Lane	$50,000
	Construct 2nd NB Through Lane	$289,720
	Construct 1st SB Left Turn Lane	$50,000
	Construct 1st EB Left Turn Lane	$50,000
	Construct 2nd EB Through Lane	$289,720
	Restripe WB Shared Left Through Lane as 1st Exclusive Left Turn Lane	$15,000
	Reconstruct WB Right Turn Lane as 1st Through Lane	$50,000
	Subtotal	**$1,044,440**
Indio Av. (NS) at:		
• SR-62 (EW)	Install a Traffic Signal	$250,000
	Construct 1st NB Left Turn Lane	$50,000
	Construct 1st SB Left Turn Lane	$50,000
	Subtotal	**$350,000**
Indio Av. (South) (NS) at:		
• Yucca Tr. (EW)	Install All Way Stop	$10,000
	Construct 2nd EB Through Lane	$289,720
	Restripe WB Shared Left Through Lane as 1st Exclusive Left Turn Lane	$15,000
	Construct 1st and 2nd WB Through Lanes	$579,440
	Subtotal	**$894,160**
Indio Av. (North) (NS) at:		
• Yucca Tr. (EW)	Install a Traffic Signal	$250,000
	Restripe EB Shared Left Through Lane as 1st Exclusive Left Turn Lane	$15,000
	Construct 1st EB Through Lane	$289,720
	Subtotal	**$554,720**
GRAND TOTAL - COST OF CONSTRUCTION		**$18,274,832**

[1] See Appendix H for 'through' cost calculation

[2] Cost of $250,000 for Traffic Signal Installation is divided between Palm Avenue (North) and Palm Avenue (South) @ SR-62

TABLE 6-2 (Page 1 of 2)

2030 PROJECT FAIR SHARE FOR IMPROVEMENTS

INTERSECTION	LOCAL TOTAL COST	PEAK HOUR	EXISTING TRAFFIC	2030 HORIZON YEAR WITH PROJECT TRAFFIC	PROJECT TRAFFIC	TOTAL NEW TRAFFIC	PROJECT % OF NEW TRAFFIC	AM PROJECT COST SHARE	PM PROJECT COST SHARE	HIGHER AM OR PM COST SHARE
Camino Del Cielo Tr. (NS) at:										
• SR-62 (EW)	$1,324,160									
		AM	1,806	3,744	1,045	1,938	53.92%	$714,008	$1,075,201	$1,075,201
		PM	2,217	5,387	2,574	3,170	81.20%			
Kickapoo Tr. (NS) at:										
• SR-62 (EW)	$629,440									
		AM	2,000	3,729	1,201	1,729	69.46%	$437,222	$563,137	$563,137
		PM	2,239	4,394	1,928	2,155	89.47%			
• Sante Fe Tr. (EW)	$350,000									
		AM	283	1,502	310	1,219	25.43%	$89,007	$84,056	$89,007
		PM	306	1,551	299	1,245	24.02%			
Main St. (Western Gateway) (NS) at:										
• SR-62 (EW)	$2,514,040									
		AM	0	2,110	737	2,110	34.93%	$878,127	$1,019,498	$1,019,498
		PM	0	2,789	1,131	2,789	40.55%			
Fox Tr. (NS) at:										
• SR-62 (EW)	$1,446,206									
		AM	277	2,345	625	2,068	30.22%	$437,079	$604,592	$604,592
		PM	258	2,961	1,130	2,703	41.81%			
Wamego Tr. (NS) at:										
• SR-62 (EW)	$357,740									
		AM	262	2,322	625	2,060	30.34%	$108,538	$150,669	$150,669
		PM	239	2,922	1,130	2,683	42.12%			
Elk Tr. (NS) at:										
• SR-62 (EW)	$520,976									
		AM	235	2,345	625	2,110	29.62%	$154,318	$208,538	$208,538
		PM	227	3,050	1,130	2,823	40.03%			
Pioneertown Rd. (NS) at:										
• SR-62 (EW)	$1,727,704									
		AM	346	3,295	865	2,949	29.33%	$506,770	$822,355	$822,355
		PM	366	4,467	1,952	4,101	47.60%			
Deer Tr. (NS) at:										
• Sante Fe Tr. (EW)	$510,000									
		AM	224	1,675	1,332	1,451	91.80%	$468,174	$464,342	$468,174
		PM	217	2,518	2,095	2,301	91.05%			
Cherokee Tr. (NS) at:										
• SR-62 (EW)	$756,464									
		AM	149	2,339	1,352	2,190	61.74%	$467,004	$575,902	$575,902
		PM	140	3,014	2,188	2,874	76.13%			
Main St. (Eastern Gateway) (NS) at:										
• SR-62 (EW)	$1,121,182									
		AM	0	2,457	1,405	2,457	57.18%	$641,132	$767,640	$767,640
		PM	0	3,203	2,193	3,203	68.47%			
Apache Tr. (NS) at:										
• SR-62 (EW)[1]	$150,000									
		AM	2,082	2,381	1,405	299	469.90%	$150,000	$150,000	$150,000
		PM	2,784	3,328	2,193	544	403.13%			
Mohawk Tr./Acoma Tr. (NS) at:										
• SR-62 (EW)[1]	$389,720									
		AM	2,156	3,406	1,392	1,250	111.36%	$389,720	$389,720	$389,720
		PM	2,987	4,810	2,098	1,823	115.09%			
Church St. (NS) at:										
• SR-62 (EW)[1]	$365,000									
		AM	2,221	3,042	1,107	821	134.84%	$365,000	$365,000	$365,000
		PM	3,082	4,463	1,792	1,381	129.76%			
Palm Av. (South) (NS) at:										
• SR-62 (EW)[1]	$414,720									
		AM	2,366	3,031	1,425	665	214.29%	$414,720	$414,720	$414,720
		PM	2,921	4,016	2,329	1,095	212.69%			
Palm Av. (North) (NS) at:										
• SR-62 (EW)[1]	$125,000									
		AM	2,357	2,973	1,351	616	219.32%	$125,000	$125,000	$125,000
		PM	2,927	3,900	2,192	973	225.28%			

TABLE 6-2 (Page 2 of 2)

2030 PROJECT FAIR SHARE FOR IMPROVEMENTS

INTERSECTION	LOCAL TOTAL COST	PEAK HOUR	EXISTING TRAFFIC	2030 HORIZON YEAR WITH PROJECT TRAFFIC	PROJECT TRAFFIC	TOTAL NEW TRAFFIC	PROJECT % OF NEW TRAFFIC	AM PROJECT COST SHARE	PM PROJECT COST SHARE	HIGHER AM OR PM COST SHARE
Sage Av. (NS) at:										
• Onaga Tr. (EW)	$300,000									
		AM	432	2,000	539	1,568	34.38%	$103,125	$157,321	$157,321
		PM	728	2,572	967	1,844	52.44%			
Old Woman Springs Rd. (SR 247) (NS) at:										
• Paxton Rd. (EW)	$829,440									
		AM	988	1,709	306	721	42.44%	$352,023	$464,114	$464,114
		PM	1,166	2,056	498	890	55.96%			
Old Woman Springs Rd. (SR 247)/Joshua Ln. (NS) at:										
• SR-62 (EW)[1]	$50,000									
		AM	2,711	3,752	922	1,041	88.57%	$44,284	$50,000	$50,000
		PM	3,539	4,887	1,495	1,348	110.91%			
Joshua Ln. (NS) at:										
• Yucca Tr. (EW)	$250,000									
		AM	1,118	2,897	228	1,779	12.82%	$32,040	$43,456	$43,456
		PM	1,692	3,671	344	1,979	17.38%			
• Onaga Tr. (EW)	$804,720									
		AM	730	2,317	417	1,587	26.28%	$211,448	$217,097	$217,097
		PM	819	3,132	624	2,313	26.98%			
Warren Vista Av. (NS) :										
• Yucca Tr. (EW)	$495,000									
		AM	547	1,388	184	841	21.88%	$108,300	$126,717	$126,717
		PM	794	1,962	299	1,168	25.60%			
Palomar Av. (NS) at:										
• Yucca Tr. (EW)	$1,044,440									
		AM	866	1,982	368	1,116	32.97%	$344,403	$322,649	$344,403
		PM	904	2,720	561	1,816	30.89%			
Indio Av. (NS) at:										
• SR-62 (EW)	$350,000									
		AM	1,519	2,523	492	1,004	49.00%	$171,514	$198,790	$198,790
		PM	2,053	3,458	798	1,405	56.80%			
Indio Av. (South) (NS) at:										
• Yucca Tr. (EW)	$894,160									
		AM	609	1,355	224	746	30.03%	$268,488	$297,202	$297,202
		PM	642	1,692	349	1,050	33.24%			
Indio Av. (North) (NS) at:										
• Yucca Tr. (EW)	$554,720									
		AM	604	1,394	181	790	22.91%	$127,094	$143,495	$143,495
		PM	625	1,777	298	1,152	25.87%			
GRAND TOTAL - COST SHARE FOR IMPROVEMENTS								**$8,108,537**	**$9,801,212**	**$9,831,749**

[1] In this case, the project cost share is assumed to be 100% of the intersection improvements cost.

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7.0 SUMMARY AND RECOMMENDATIONS

This section summarizes the findings of this traffic impact analysis, and provides a series of recommendations related to project implementation for the Old Town Yucca Valley Specific Plan development.

7.1 Summary

The traffic issues related to the proposed land use and development have been evaluated in the context of the California Environmental Quality Act (CEQA) and the San Bernardino County Congestion Management Program (CMP). In accordance with explicit CMP requirements, CMP Horizon Year (2030) analysis is included in this report. As this project is a Specific Plan amendment to the currently adopted General Plan, the CMP Horizon Year analysis also serves as the project Opening Year (Interim Year) analysis. The proposed land use plan for the Old Town Specific Plan includes a total of 1,116 residential dwelling units and 2,900,604 square feet of commercial, office, and light industrial non-residential uses.

A series of scoping discussions were conducted with the Town of Yucca Valley to define the desired analysis locations. The project contribution test indicates that the project contributes traffic more than the threshold of 50 trips (CMP roadway threshold volume) along roadway segments serving CMP intersections within the Town of Yucca Valley and on California Department of Transportation (Caltrans) facilities. This means that the Town of Yucca Valley needs to notify the Congestion Management Agency (SANBAG) and Caltrans in accordance with CMP requirements.

The CMP Horizon Year (2030) traffic volumes with the project have been derived from the subregional travel demand model currently being used for long range planning in the Morongo Basin. The RSA 33 - Morongo Basin Transportation

Model (MBTM) was developed by Urban Crossroads, Inc. staff in 1997. The model has been updated for the Old Town Specific Plan area to include the explicit land uses planned under both the currently adopted General Plan and proposed Specific Plan. The model has also been reviewed and modified to include all other known (active) development projects within the Town of Yucca Valley.

7.1.1 The Project

The Old Town Yucca Valley Specific Plan project only traffic volumes were estimated via the MBTM. Given that there are existing land uses in the Old Town Specific Plan area which generate traffic, the proposed Old Town Specific Plan net project trips have been calculated as the difference between the proposed project trips and the existing Old Town area trips. The project only traffic forecasts have been generated by applying the net project trip generation, trip distribution and traffic assignment calculations.

Table 2-5 (previously presented) summarizes the projected trip generation for the Old Town Specific Plan development. As indicated in Table 2-5, the overall proposed development is anticipated to generate a total net increase of 107,463 trip-ends per day, with 6,144 vehicles per hour (VPH) during the AM peak hour and 9,970 VPH during the PM peak hour.

7.1.2 Existing Study Area Conditions

All CMP Horizon Year (2030) analysis locations which exist today that are affected by the minimum CMP volume requirements have been analyzed. Regional access to the site is provided by Twentynine Palms Highway (SR-62) and Old Woman Springs Road (SR-247). Local access is provided by various arterial roadways in the vicinity of the project site. The local arterials which will be most affected by the proposed development include Yucca Trail, Pioneertown Road/Deer Trail, Santa Fe Trail, Kickapoo Trail, and Acoma Trail.

7.1.3 Future Conditions

2030 CMP Horizon Year without and with project analyses are included in this report, with the AM and PM peak hour traffic operations analysis summarized in Tables 5-1 and 5-2 (presented previously).

7.2 Recommendations

The recommendations in this section address on-site improvements, off-site improvements and the phasing of all necessary study area transportation improvements for the Old Town Yucca Valley Specific Plan development.

7.2.1 On-Site Improvements

On-site improvements and improvements within the Old Town Specific Plan project site will be required in conjunction with the proposed development to ensure adequate circulation within the project itself. Exhibit 7-A and Exhibit 7-B illustrate the recommended roadway improvements to address on-site and regional (SR-62) circulation requirements within the proposed site, which include the following:

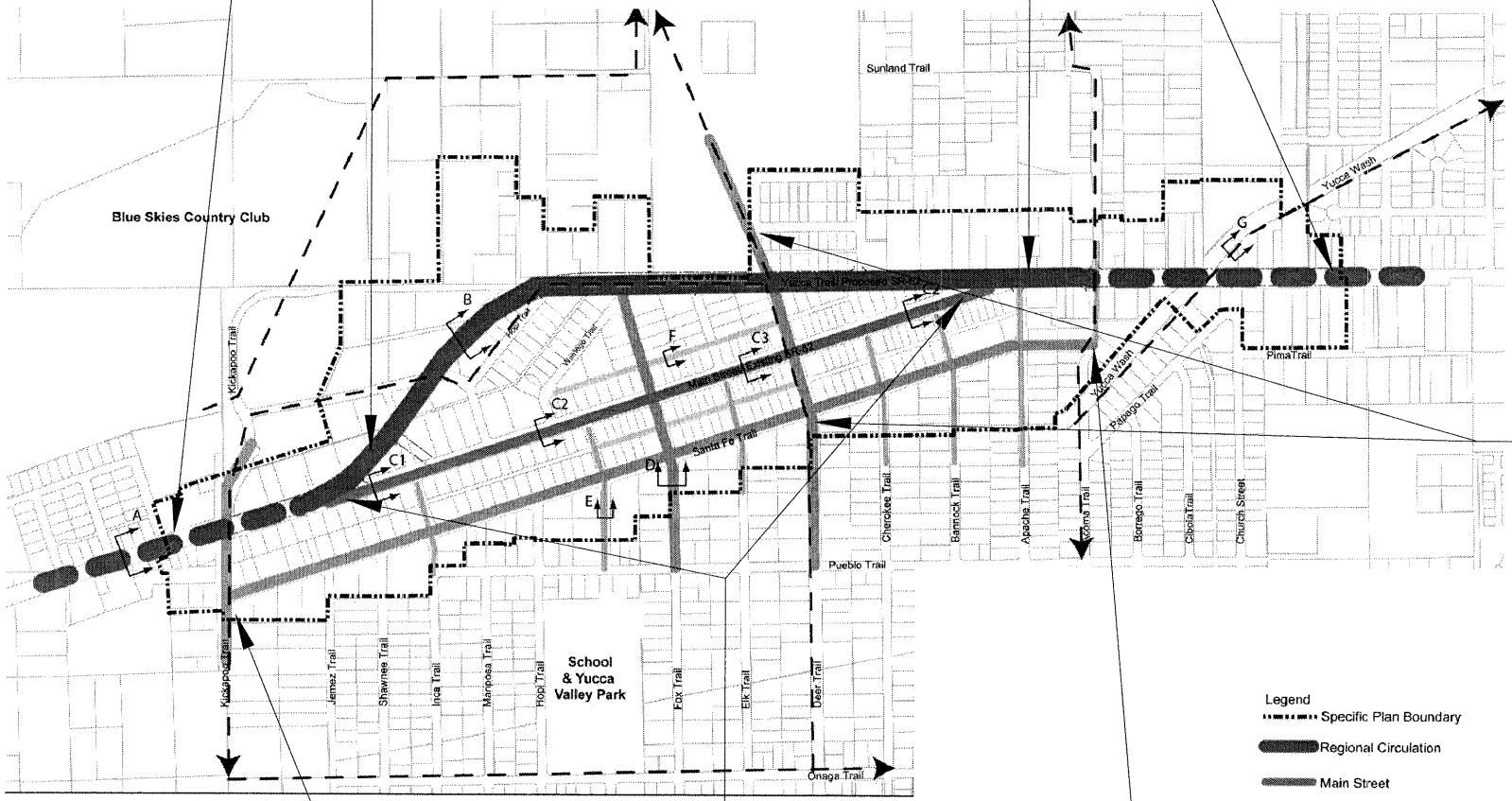
- Construct a realigned SR-62 along Yucca Trail at its ultimate width as a 6-Lane Divided Highway in conjunction with the proposed project.

- Reconstruct Main Street to provide a pedestrian-friendly local street per Specific Plan cross-sections and recommendations.

- Construct Santa Fe Trail through the project site at its ultimate section width as a 4-Lane Collector in conjunction with the proposed project.

EXHIBIT 7-A

OLD TOWN YUCCA VALLEY SPECIFIC PLAN CIRCULATION RECOMMENDATIONS

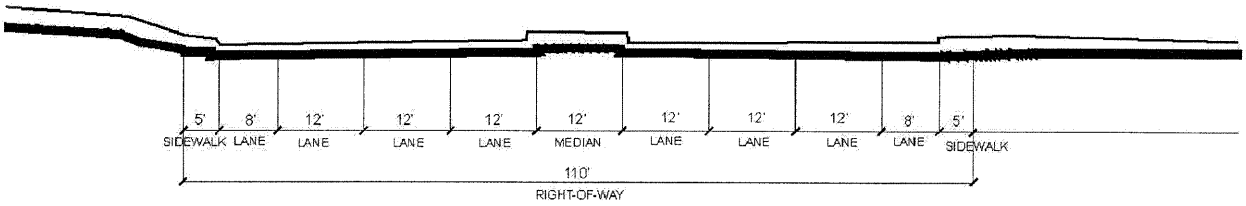


URBAN CROSSROADS

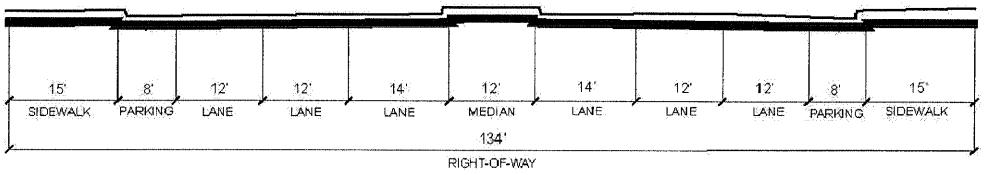
EXHIBIT 7-B

OLD TOWN YUCCA VALLEY SPECIFIC PLAN ROADWAY CROSS-SECTIONS (PAGE 1 OF 2)

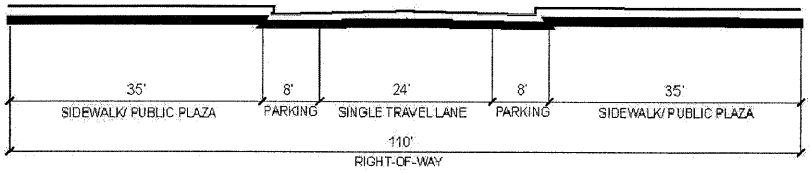
SECTION A: SR-62 (EXISTING ALIGNMENT)



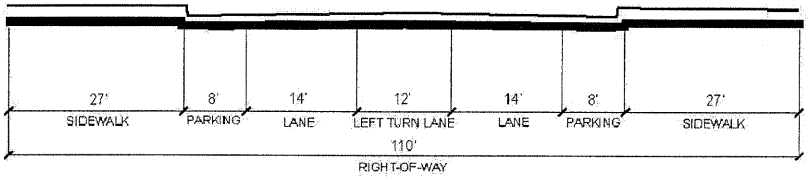
SECTION B: SR-62 (PROPOSED REALIGNMENT)



SECTION C1: MAIN STREET (EXISTING SR-62 ALIGNMENT)



SECTION C2: MAIN STREET (EXISTING SR-62 ALIGNMENT)



SECTION C3: MAIN STREET (EXISTING SR-62 ALIGNMENT)

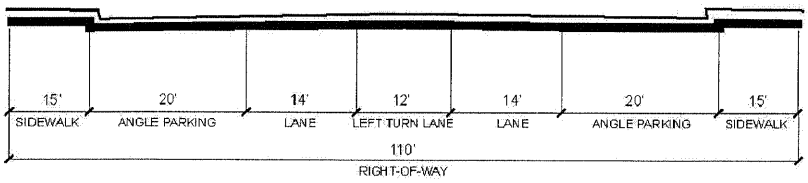
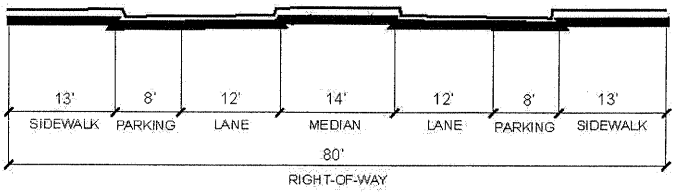


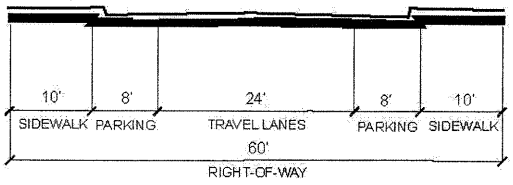
EXHIBIT 7-B

OLD TOWN YUCCA VALLEY SPECIFIC PLAN ROADWAY CROSS-SECTIONS (PAGE 2 OF 2)

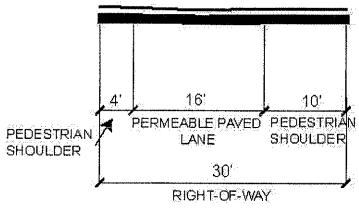
SECTION D: PRIMARY LOCAL STREET



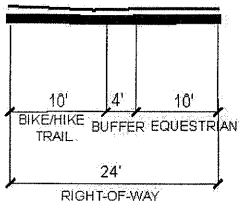
SECTION E: SECONDARY LOCAL STREET



SECTION F: ALLEY



SECTION G: MULTI-USE TRAIL (PER GENERAL PLAN)



- Construct Pioneertown Road / Deer Trail through the project site at its ultimate section width as a 4-Lane Collector in conjunction with the proposed project.

- Provide Stop Sign control for all unsignalized Site Access Driveways.

- Sight distance at the project site access points should be reviewed with respect to Town of Yucca Valley standards in conjunction with the preparation of precise grading and landscape plans.

- Participate in the phased construction of off-site traffic signals and roadway improvements through payment of established fees or fair share contribution towards improvements not included in fee program(s).

7.2.2 Off-Site Improvements and Phasing

The necessary off-site improvement recommendations were described in previous sections of this report. The project should contribute towards the cost of necessary study area improvements on a fair share or "pro-rata" basis (see Section 7) by paying development impact fees and/or additional fair share contributions towards improvements not included in the adopted fee program.

7.2.3 Transportation System Management Actions

a. Off-Site

As development in the area occurs, transit agencies should consider expanding service within the area.

b. On-Site

The on-site design should accommodate private and/or public bus access design and parking.