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

March 19, 2007

Mr. Doug Evans
Community Planning Director
City of La Quinta
78-495 Calle Tampico
La Quinta, CA 92253

SUBJECT: ***Circulation Study For A Circulation Element Amendment of the "City of La Quinta Comprehensive General Plan" in the Vicinity of the Travertine Specific Plan***

Dear Mr. Evans;

Transportation facilities are a basic requirement for community growth and development. A comprehensive transportation planning process is essential to ensure that land development needs, related circulation system needs, and the needs of the environment and the community are balanced in a creative and sensitive manner.

In developing a balanced and coordinated transportation system, data is compiled, evaluated, and analyzed to establish the community's social, economic, and environmental goals as well as its circulation needs, deficiencies, opportunities, and constraints. Alternative transportation plans are then evaluated to determine their feasibility in meeting the future transportation needs of the community. Community transportation goals and standards for their implementation are important as they assure consistency when future development occurs.

The City of La Quinta's primary traffic and circulation goal is a network that efficiently, safely and economically moves people, vehicles and goods using facilities that meet the current demands and projected needs of the City while maintaining and protecting its residential resort character. The General Plan recognizes that transportation planning is a dynamic process and that certain refinements to the circulation system identified in the Circulation Element may be required when securing right-of-way and constructing improvements at specific locations. To avoid future system inadequacies and assure the availability of necessary right-of-way to serve projected future travel needs, the City monitors land-use trends and associated changes in traffic volumes and traffic patterns then makes periodic adjustments in planning and program implementation.

In view of the capital investment required to finance urban projects of all kinds, the consequences of inadequate planning are substantial. Successful solutions to the complex mobility problems confronting rapidly developing urban areas require the energy, imagination, and perspective of a wide range of professionals in various technical disciplines. By working together to identify a rational, practical, and comprehensive long-range transportation plan, they can ensure that the transportation plan conforms to community goals and objectives and that its economic impact, social effects, and potential impacts on the environment are fully considered.

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

The community-wide implications of local circulation system decisions must be carefully considered. Failure to treat circulation comprehensively threatens both the efficiency and the effectiveness of the system. It is therefore incumbent on all involved to strive to improve the assessment of the full range of circulation impacts, whether beneficial or adverse, so that decision makers can make informed decisions.

A careful evaluation of circulation improvements is necessary to maximize the effectiveness and efficiency of the existing network. Roadway classification considerations include: (1) anticipated traffic demands; (2) traffic network continuity; (3) the benefits of additional access that could reduce circuitous travel on alternate access routes; (4) fiscal feasibility; (5) compatibility with community needs; and (6) environmental protection.

When significant departures occur between the forecast conditions and observed conditions, transportation plans must be modified to reflect the observed changes. When the development intensities being realized in an area are substantially lower than the maximum permitted under the existing entitlements, the ultimate travel demands in the area will be less than projected and master planned roadways which would provide more capacity than required may need to be downgraded in the General Plan.

In those instances where a master planned roadway segment is added to the General Plan after the future travel demand forecast is completed, it may not always be feasible to immediately update the travel forecast to reflect the change in the transportation network. As a result, the future traffic projections for other master planned roadways in the vicinity of the new roadway segment may be higher than they should be and a reassignment of future traffic volumes may reveal that the downgrading of one or more transportation facilities is warranted.

1.0 INTRODUCTION

1.1 Purpose and Scope

Endo Engineering has been asked by the City of La Quinta and various interested groups to investigate and evaluate roadway network alternatives for the area in the vicinity of the Travertine Specific Plan and document their potential effects on mobility and accessibility. All of the interested parties are seeking approval of a cost-effective circulation network which safely meets the needs of all users and the community, while preserving the area's unique setting and character and maintaining community values.

This collaborative approach to transportation planning clarifies the significance of potential issues and permits significant concerns to be addressed more thoroughly. As a result, the transportation facilities ultimately constructed will fit into their environment better, and more effectively preserve aesthetic, historic and environmental values. Promoting stakeholder involvement, allows individuals with different levels of knowledge and experience to participate in the strategic planning process and provide a wider perspective. Consequently, the solutions developed will more effectively balance environmental, engineering, community, mobility, access, funding and safety needs and minimize delay and controversy.

A transportation planning analysis was conducted for the study area, which is undergoing primarily residential development and is located on the fringe of a more urbanized area. The impact that future development of the General Plan land uses will have on alternative transportation systems is identified below. Buildout of the entire study area and the master planned circulation system was evaluated. The data provided herein is intended for use in determining appropriate classifications for the General Plan Circulation Element roadway

facilities in the study area. The study findings and conclusions are summarized at the end of this report.

1.2 Study Area

The study area is depicted in Figure 1. It is situated in the southern portion of the City of La Quinta, south of Lake Cahuilla and the PGA West Specific Plan, west of the Coral Mountain Specific Plan (and the northwest-southeast flood control levee), and north and east of the Santa Rosa Mountains. The study area nestles against the foothills, in the alluvial fan areas along the flanks of the adjacent mountains, which border it to the south and to the west. Residential development is currently under construction in the study area (in the Quarry Specific Plan and both north and south of Avenue 58). The study area includes the following General Plan Circulation Element roadways:

- Avenue 58 (between Madison Street and Jefferson Street);
- Jefferson Street (between Avenue 58 and Madison Street);
- Madison Street (between Avenue 60 and Jefferson Street); and
- Avenue 62 (between Jefferson Street and Monroe Street).

1.3 Special Focus Issues

Secondary Arterials Versus Collector Streets

The development and improvement of streets should be based on functional street classifications established as part of the comprehensive community development plan. The design criteria should be those for the ultimate planned development. Appropriate design geometrics may be determined from the future traffic projections and the selected design speed, with consideration given to the type of terrain, the general character of the alignment, and the composition of the future traffic flows. The longer sight distances and curve radii commensurate with higher design speeds result in safer highways and should be used to the extent practical. Changes in alignment (both horizontal and vertical) should be gradual on arterials so they will not surprise drivers.

Secondary arterials provide for through traffic movement between areas; but direct access to adjoining properties should be avoided where possible. They have a design speed of 40 miles per hour and a right-of-way of 88 feet. Secondary arterials provide a four-lane undivided cross section and can carry a maximum of 28,000 vehicles per day. Horizontal curves on secondary highways have a minimum radius of 850 feet (compared to 450 feet for collector streets) therefore the roadway cannot turn sharply around topographic or other obstructions.

The two moving traffic lanes plus additional width for shoulders and parking provided by collector streets is adequate where traffic volumes are light. The function of collector streets is equally divided between mobility and access to abutting properties. Collectors can carry a maximum of 14,000 vehicles per day.

When the objective is to expedite traffic mobility on collector streets: (1) conflict points should be minimized; (2) adequate storage should be provided for turning movements at intersections (by eliminating the parking lane or flaring the approach); (3) conflict points with pedestrians and bicyclists should be minimized; and (4) signals should be located to meet progression needs. In addition, access management strategies can be employed to ensure that access points conform to adopted criteria for safety, location, design, construction, and maintenance.

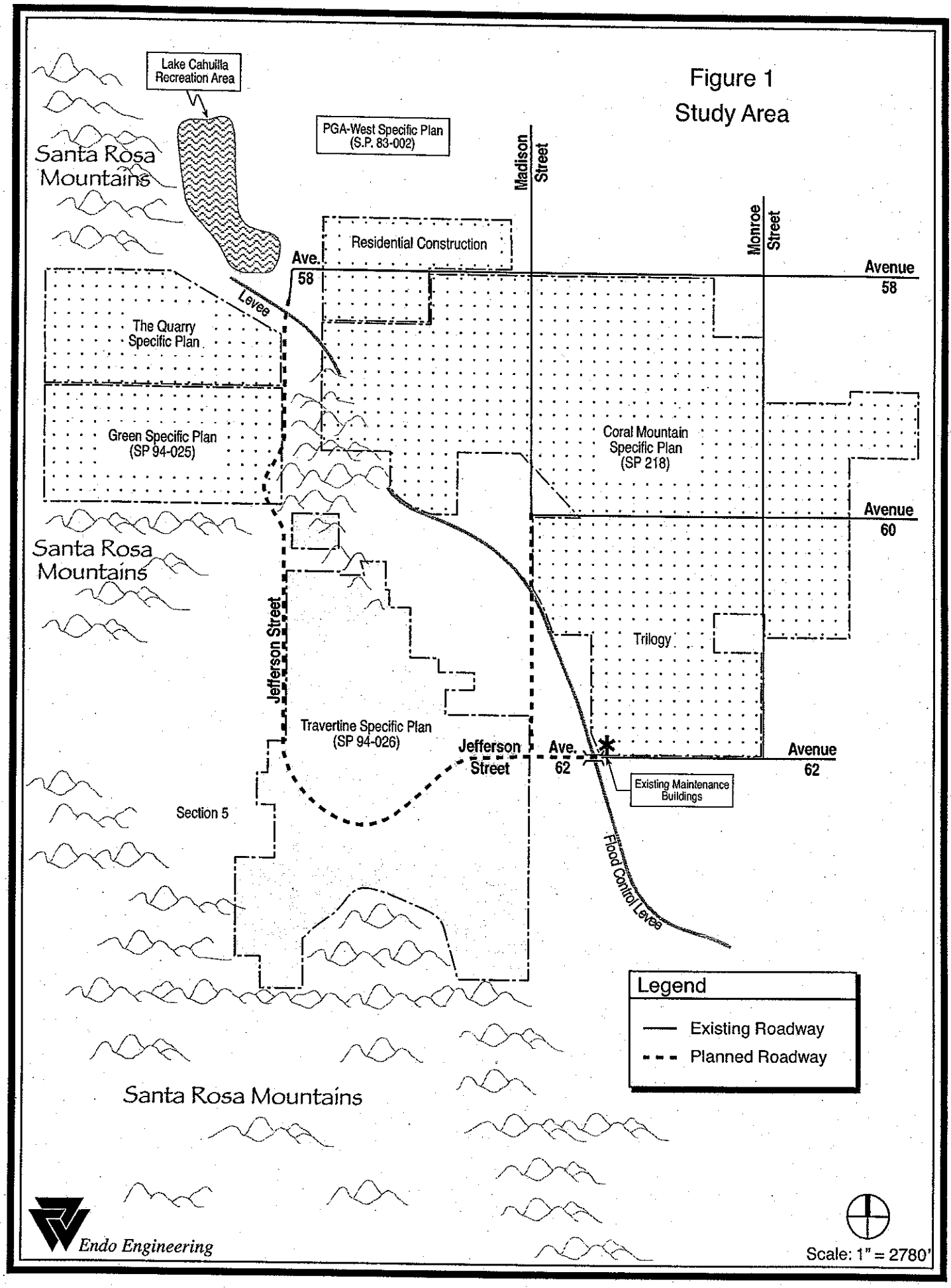


Figure 1
Study Area
Lake Cahuilla Recreation Area
PGA-West Specific Plan (S.P. 83-002)
Santa Rosa Mountains
Madison Street
Monroe Street
Residential Construction
Ave. 58
Avenue 58
Levee
The Quarry Specific Plan
Green Specific Plan (SP 94-025)
Coral Mountain Specific Plan (SP 218)
Avenue 60
Santa Rosa Mountains
Jefferson Street
Trilogy
Travertine Specific Plan (SP 94-026)
Jefferson Street
Ave. 62
Avenue 62
Existing Maintenance Buildings
Section 5
Flood Control Levee
Legend
Existing Roadway
Planned Roadway
Santa Rosa Mountains
Endo Engineering
Scale: 1" = 2780'

The alignment of collector streets can closely fit the existing topography to minimize the need for cuts or fills without sacrificing safety. The area between the roadway and the right-of-way line provides a buffer space between pedestrians, bicyclists, and vehicular traffic; a sidewalk; and an area for utilities as well as signals and fire hydrants. Breakaway features may be built into obstacles in the border area ,where practical, to improve safety.

Inconsistency Between the Circulation Element and the Land Use Element

The circulation network identified in the *City of La Quinta Comprehensive General Plan* (adopted on March 20, 2002) to serve the future traffic volumes upon General Plan buildout includes Madison Street, as a four-lane undivided secondary arterial, between Avenue 60 and Jefferson Street. Madison Street may have been included in the General Plan Circulation Element, between Avenue 60 and Jefferson Street, for any of a number of reasons (such as network continuity, to take advantage of an opportunity to enhance community circulation, overall community design goals, reducing emergency response times, the provision of bicycle lanes and multi-purpose trails, facilitating evacuation in the event of natural disasters, etc.). However, this connection was not included in the La Quinta Traffic Model roadway network and, therefore, was not considered when the General Plan buildout traffic projections were developed for the study area. Consequently, the future traffic projections used to determine appropriate roadway classifications for Jefferson Street, Avenue 58 and Avenue 62 in the study area do not reflect conditions with the currently adopted General Plan roadway network.

The post-2020 traffic projections provided in the *City of La Quinta Comprehensive General Plan/Master Environmental Assessment* were never modified to reassign a portion of the traffic projected to utilize Avenue 58 and Avenue 62 (a total of 33,750 trips per day) onto Madison Street, between Avenue 60 and Jefferson Street. This segment of Madison Street will carry some of the study area traffic that was assigned by the La Quinta Traffic Model to Avenue 58 (west of Madison Street) and to Avenue 62 (between Madison Street and Monroe Street). Avenue 58 (west of Madison Street) and Avenue 62 (between Madison Street and Monroe Street) will carry less traffic in the future than previously projected by the La Quinta Traffic Model. As a result, the General Plan Circulation Element is not consistent with the Land Use Element. Moreover, the streets that are currently planned to provide access to the northeast corner of the Travertine Specific Plan will provide substantially more arterial capacity than needed to accommodate future traffic volumes at acceptable levels of service.

Excess Roadway Network Capacity

A highway capacity analysis can be used in transportation planning studies to assess the adequacy or sufficiency of the currently master planned highway network to service the projected traffic demand upon buildout of the General Plan. It is also used where future traffic demand projections are lowered to properly fit the planned roadways by determining the number of lanes required and selecting the appropriate roadway type to best meet the anticipated travel demands.

The *City of La Quinta Comprehensive General Plan* and the Travertine Specific Plan identify the future land uses and the maximum permitted development intensities for the study area. They should incorporate a circulation network properly sized to fit and efficiently support the future land use pattern. The *La Quinta General Plan Update Traffic Study* (RKJK & Associates; March 21, 2000) projected that the area surrounding the Travertine Specific Plan would be adequately served by a single four-lane secondary highway loop essentially bisecting the study area. The loop would be comprised of: Avenue 62 extending west across the levee to connect to Jefferson Street, Jefferson Street

extending west and north to connect to Avenue 58, and Avenue 58 extending east to Madison Street.

Following the completion of the *La Quinta General Plan Update Traffic Study*, a southerly extension of Madison Street (between Avenue 60 and Jefferson Street) was added to the *La Quinta Comprehensive General Plan* Circulation Element and classified as a secondary highway. The projected future traffic volumes in the vicinity were not reassigned to the new one-mile long segment of Madison Street to reflect the change in local traffic patterns. The classifications of the surrounding General Plan roadway network were not reassessed at that time. Consequently, the roadway network planned to serve the study area surrounding the Travertine Specific Plan is larger than needed to accommodate the ultimate level of building activity expected and would provide at least four lanes of excess roadway capacity.

The availability of four additional through lanes on Madison Street should provide sufficient excess roadway capacity on a daily basis to allow four through lanes to be eliminated from the other General Plan roadways that will ultimately provide access to the study area. In view of this excess capacity, it may be appropriate to downgrade Avenue 62 (west of Monroe Street) and Jefferson Street (between Avenue 58 and Madison Street) from four-lane secondary arterials to two-lane collector streets. It may be appropriate to downgrade Madison Street, between Avenue 60 and Jefferson Street, from a four-lane secondary arterial to a two-lane collector street, provided the ultimate development yield of the Travertine Specific Plan is low enough to justify the change. Although the future traffic volume on Avenue 58 (west of Madison Street) will also be lower than formerly projected, it will remain approximately 5,500 vehicles per day higher than the volume on Jefferson Street and may, therefore, justify retaining the four-lane secondary highway designation of Avenue 58 to accommodate fluctuations in future recreational travel demands.

It is in the public interest to construct and maintain only those circulation improvements necessary to support the future development expected to occur in the study area. With a reassignment of the future traffic volumes to reflect the addition of the Madison Street segment to the ultimate roadway network, the projected General Plan buildout traffic volumes for Jefferson Street and Avenue 62 are expected to be low enough to be easily accommodated by a two-lane collector street.

Constraints Affecting Avenue 62 Improvements

There are physical constraints that would limit the widening of Avenue 62, where it crosses the flood control levee (east of Madison Street). Insufficient right-of-way dedications were made to Riverside County to establish slope stability for Avenue 62, east of Madison Street, where it will cross over the existing dike and the flood control channel. Furthermore, two maintenance buildings have recently been constructed with paved parking areas north of and abutting the two-lane segment of Avenue 62, just east of the levee. This development limits the availability of additional right-of-way on the north side of Avenue 62.

The ultimate geometric design features required for Avenue 62 are uncertain, pending a determination of the future traffic demand and the amount and type of access Avenue 62 would need to provide for the study area. Although shown in the La Quinta Circulation Element as a four-lane secondary highway, Avenue 62 may have to be constructed as a two-lane roadway to accommodate the embankments necessary to support the elevated roadway where it crosses the flood control levee. Even with a reduced two-lane cross-section, Avenue 62 would be difficult to construct across the dike, without disrupting the adjacent golf course maintenance facilities. Therefore, consideration is being given to downgrading the classification of Avenue 62 to a collector street designation. Local policy

makers will ultimately need to determine if Avenue 62, between Monroe Street and Madison Street, is to be: fully improved as a public roadway, designed and constructed to provide emergency access only across the levee, or constructed as a two-lane collector street or local street which ends in a cul-de-sac with no connection across the levee.

Actual Residential Yields Versus Entitlements

The development being constructed in the southeastern portion of the City of La Quinta has been less intense than envisioned by the General Plan and the entitlements. Although the General Plan and various approved Specific Plans identify the maximum land uses and the roadway network required to serve those uses, the roadway network ultimately constructed should be appropriately sized to serve the land uses actually constructed. Excessively wide high-speed roadways are costly to construct and maintain. They increase environmental impacts and may attract regional through traffic, which is not desirable in residential areas as it results in higher travel speeds which can adversely affect safety.

The Coachella Valley Water District and the developers of the Travertine Specific Plan are committed to minimizing the footprint of Madison Street, between Avenue 60 and Jefferson Street. Like the development pattern in the PGA West, Andalusia, and Trilogy area, the Travertine Specific Plan may be ultimately constructed with fewer than the 2,300 residential dwelling units permitted under the approved Specific Plan. If that occurs, it would generate fewer vehicle trips than assumed in the La Quinta Traffic Model and it may be appropriate to reclassify Madison Street, between Avenue 60 and Jefferson Street, as a two-lane collector street. The analysis herein will identify the level of development for the Travertine Specific Plan that would be low enough to justify downgrading Madison Street (from Avenue 60 to Jefferson Street) to a two-lane collector street.

Public Safety

The master planned roadways in the study area need to effectively balance the needs of pedestrians, bicyclists, motorcyclists, and emergency response vehicles. As population and development increases, traffic volumes and the number of intersections grow, as does the number of collisions. Travel safety is affected by how the transportation system is designed, constructed, operated and maintained.

Since transportation planning leads to changes in the transportation system, the City of La Quinta integrates safety into the planning process to maximize safety for the traveling public using the motorized and nonmotorized transportation systems. Consideration must be given to the type and characteristics of the future roadway users and their trip purposes (i.e., recreational trips and commuting to work versus regional through travel). The facilities planned should fit the needs of the vehicle types likely to use the roadways (heavy commercial vehicles versus passenger vehicles).

Medical care facilities with trauma centers must be accessible to save lives. To ensure an efficient and effective emergency vehicle response system, good routes to emergency care must be available at all times and emergency vehicle routes should minimize transfer time. Emergency vehicle routing should avoid congested areas. At least two emergency vehicle access routes should be provided via Circulation Element roadways to ensure that a temporary blockage of one emergency access route will not prevent first responders from reaching people with serious injuries or life-threatening medical emergencies quickly.

Two fire stations (#39 and #70) currently provide fire protection and emergency medical services in the vicinity and emergency response times are currently five minutes or less. A new fire station is planned within one-quarter mile of the intersection of Monroe Street and Avenue 60. Although the precise location has not been determined, it appears that all four

master planned roadways (Avenue 58, Madison Street, Jefferson Street, and Avenue 62) could provide emergency vehicle access to the study area in the future.

The effect on emergency response times of not extending Avenue 62 across the dike may affect emergency response times. If the new fire station is located one-quarter mile north of Avenue 60, or one-quarter mile east of Monroe Street, the termination of Avenue 62 east of the dike would have no effect on the emergency response time for the study area. As the shortest route to travel west to Madison Street, Avenue 60 would likely be selected for use by emergency vehicles leaving the new fire station. At the intersection of Madison Street and Avenue 60, emergency vehicles would have the option of turning north to Avenue 58 or south to Jefferson Street, depending on their destination within the study area.

If the new fire station is located along Monroe Street, one-quarter mile west of Avenue 60, Avenue 60 would provide a shorter path to the study area than Avenue 62. Therefore, the termination of Avenue 62 east of the dike would have no effect on the distance that an emergency vehicle would need to travel to respond to an emergency in the study area.

If the new fire station is located one-quarter mile south of Avenue 60, the termination of Avenue 62 east of the dike would increase the distance emergency vehicles would need to travel to reach the study area by 0.5 mile. Without the crossing of the dike at Avenue 62, emergency vehicles would need to travel 0.25 mile north to Avenue 60, and backtrack 0.25 mile on southbound Madison Street to reach the site.

Roadside design is a critical safety feature. When collisions occur, vehicles often encroach on shoulders and side slopes. Clear shoulders and gentle side slopes without solid objects (such as signposts and light standards) are safer, as they provide more time for drivers to recover from errors and collisions. A forgiving roadside which provides a clear recovery area is safer, since once a vehicle leaves the roadway, the driver no longer has the ability to fully control it. This is an important consideration because Avenue 62 will need to be elevated to cross the dike with steep embankments on either side of the roadway.

Vertical curves can reduce sight distance and affect safety. Where Avenue 62 would cross over the dike, the crest of the vertical curve (at the top of the dike) could reduce the visibility of the roadway ahead. Since Avenue 62 is aligned east/west, each day the rising and setting sun may be shining directly into the eyes of motorists crossing the dike, potentially affecting the visibility of conditions on the roadway ahead.

While not expected to carry a large volume of traffic in the future, the connection of Avenue 62, between Madison Street and Monroe Street, would provide non-motorized public access to the regional bikeway and trail system as well as an additional emergency vehicle access route. However, the construction of an elevated roadway with steep embankments on either side would require careful design to minimize the potential for motorists to run off the roadway and rollover.

Both a Class II on-road bicycle trail and a multi-purpose trail are master planned along Avenue 62. The vertical alignment of Avenue 62 should incorporate adequate stopping sight distance on the approach to the crest of the vertical curve (where the roadway passes over the dike). The design should take into account the fact that horses may be startled by the proximity of approaching vehicles and unexpectedly bolt into the roadway or down the embankment. It may be appropriate to consider limiting the use of Avenue 62 to emergency access or even terminating Avenue 62 as an at-grade cul-de-sac on the east side of the flood control levee.

2.0 METHODOLOGY

In an effort to evaluate the need for and appropriateness of each master planned roadway classification in the study area, Endo Engineering reviewed the City of La Quinta General Plan Update Traffic Model (LQTM) roadway network assumptions, land use assumptions, trip generation forecast, and post-2020 traffic projections. Since the *La Quinta General Plan Update Traffic Study* (RKJK & Associates; March 21, 2000) is the supporting document for the *La Quinta General Plan Circulation Element*, the development assumptions and traffic projections therein were utilized as the starting point in determining the appropriate master planned roadway classifications for the study area. The daily capacity estimates associated with each roadway functional classification in the *La Quinta General Plan Update Traffic Study* were also assumed for the analysis herein. In this manner, the focused transportation analysis of the study area was tied to the remainder of the City by direct linkage to the La Quinta Traffic Model (LQTM) and tied to the remainder of the valley by direct linkage to the Coachella Valley Area Transportation Study (CVATS) model.

The LQTM trip generation estimates were based upon the number of acres of various land use types shown in the General Plan for the traffic analysis zones within study area. Since no change in the land use designations for the acreage within the study area is anticipated, the number of daily trips associated with the existing entitlements in the study area was estimated with current ITE *Trip Generation* rates, based upon the number and type of dwelling units in each approved development, the approved commercial floor area and the number of hotel rooms. This permitted the traffic associated with each specific development area to be accurately loaded onto the master planned circulation network. Identifying the trip generation of the future land uses in the study area on an individual project level rather than by traffic analysis zone allowed the ultimate traffic volumes and appropriate roadway classifications to be determined with alternative roadway networks and different development scenarios.

The *La Quinta General Plan Update Traffic Study* includes the Travertine Specific Plan in the area served by the Jefferson Street "loop." This area was evaluated by the LQTM with only two access connections: Avenue 58 (west of Madison Street) and Avenue 62 (west of Monroe Street). Since the Jefferson Street loop serves only the developable area east of the Santa Rosa Mountains, the traffic volumes on Avenue 58 and Avenue 62 in the General Plan represent traffic generated by land uses located within the study area. No regional "through" traffic generated by future land uses outside of the study area (and passing through the study area without stopping) was included in the future traffic projections shown along the Jefferson Street "loop" in the *La Quinta General Plan Update Traffic Study* as this would have required regional through trips between the southeast and the northwest to be distributed to roadways with indirect paths and longer travel times than afforded by other more direct routes such as Avenue 62 and Monroe Street.

2.1 The La Quinta Traffic Model

Travel demand models have provided support for transportation infrastructure planning for decades. Regional transportation models are a cost effective means of developing future traffic projections for large areas. The La Quinta Traffic Model is a computerized gravity model developed in the year 2000 for the City of La Quinta in conjunction with the General Plan update process. The LQTM is a focused version of the Coachella Valley Area Transportation Study (CVATS) model, with enhanced traffic analysis zone (TAZ) and network details within the City of La Quinta boundaries. The LQTM is tied to the remainder of the valley by direct linkage to the CVATS model and the Comprehensive Transportation Plan (CTP) model. The LQTM incorporates additional detail in the City of La Quinta by: (1) adding 111 additional traffic analysis zones where traffic is generated; (2)

better defining the roadway network to serve the zones and the manner in which the traffic loads to the roadway network; and (3) generating and distributing peak season average weekday trips based upon more recent land use acreage and demographic data.

The LQTM was used to forecast future citywide General Plan buildout traffic volumes to facilitate an evaluation of the long-range intersection and roadway improvement needs at key locations. In the process, it developed useful information regarding: the General Plan land use data for each zone, the number of trips generated in each zone, and efficient and logical paths between individual zones. It also produced information that can be subsequently used to facilitate a more detailed and site-specific analysis of the area surrounding the Travertine Specific Plan. This information includes: the number of trips generated in the study area, the direction of approach of those trips, and the reduction in the number of vehicle-trips that would occur with distance from the study area, as the traffic produced in each zone is distributed to other surrounding zones, based on the attractiveness of the General Plan land uses in those zones.

The La Quinta Traffic Model evaluated the post-2020 highway network with Madison Street as a four-lane undivided secondary arterial terminating at Avenue 60 (which was also a four-lane undivided secondary arterial). Madison Street was not assumed to extend south of Avenue 60 or cross the flood control levee to terminate at Avenue 62 and Jefferson Street in the model. No master planned north/south roadway was assumed to cross over the flood control levee between Avenue 60 and Avenue 62 in the LQTM.[1]

In the LQTM, the Travertine Specific Plan was assumed to be served by Jefferson Street, a future public north/south "loop" road, which bisected the developable portion of the study area and connected Avenue 58 (to the north) to Avenue 62 (to the south). Jefferson Street, Avenue 58, and Avenue 62 were classified as four-lane secondary arterials to provide network continuity where they connected and serve the projected post-2020 traffic demand. The LQTM identified the post-2020 travel demand associated with the study area as 14,684 vehicles per day to/from the north on Avenue 58 (west of Madison Street) with 19,066 daily trips to/from the east on Avenue 62, west of Monroe Street.[2]

The documentation for the LQTM indicates that the Travertine Specific Plan occupies the better part of two traffic analysis zones (TAZ 1018 and TAZ 1038). The model includes future land uses for those zones which appear to be generally consistent with the approved Travertine Specific Plan land uses. The future daily traffic generated by the land uses in those two zones in the LQTM appears to be consistent with that identified for the Travertine Specific Plan site in the 1994 *Travertine and Green Specific Plan Traffic Study* prepared by Endo Engineering.

The trip generation algorithm in the LQTM was based upon the number of acres of each land use, whereas the trip generation forecast in the 1994 *Travertine and Green Specific Plan Traffic Study* was based upon ITE *Trip Generation* rates and the number of single-family detached and multiple-family attached dwelling units, the gross floor area of the commercial area, and the number of rooms in the resort hotel. Consequently, although the number of trips for each individual use is not directly comparable between the approved 1994 traffic study and the LQTM, the total trip generation associated with the approved development with both methodologies is consistent.

---

1. RKJK & Associates, Inc., *La Quinta General Plan Update Traffic Study*, March 21, 2000, Exhibit 4F.
2. RKJK & Associates, Inc., *La Quinta General Plan Update Traffic Study*, March 21, 2000, Table 4-2, page 4-12 and 4-13.

The LQTM assumed very little future development would occur west of the Travertine Specific Plan site (in Traffic Analysis Zone 1015). The LQTM assumed very little future development would occur in the mountainous area south of the Travertine Specific Plan (TAZ 1050) and very little, if any, development would occur to the north, between the Travertine Specific Plan and the flood control levee. The LQTM does not appear to have assigned any "through" traffic to the Jefferson Street loop road across the Travertine Specific Plan site.

Limitations of the La Quinta Traffic Model

Although the LQTM is useful in evaluating the traffic impacts of the land uses in the General Plan on the master planned roadway segments and at intersections which are some distance from the individual development sites, it has inherent limitations. The number of trips generated in each zone is based upon the number of acres of each land use type. As a result, changes in the intensity of the development within a fixed area that would affect the amount of traffic generated, may not affect the traffic projections of the LQTM. While this is not critical for a large area, where the average density is the important parameter, it can be important for the assignment of traffic to the access roadways in a small area.

For each acre of commercial land use, the LQTM assumed that 350 trips per day would be generated, irrespective of the type of commercial development planned or the building coverage. Although this approach handles large areas with a wide variety of retail uses adequately, it is not very accurate in addressing small areas with a single commercial development site offering a limited number of retail uses. Different types of commercial development can generate substantially different travel demands, as documented by the San Diego Association of Governments (SANDAG) in *Traffic Generators* (May, 2003). As shown therein, fast food restaurants can generate 3,000 daily trips per acre, supermarkets can generate 2,000 weekday trips per acre, and high turnover (sit-down) restaurants can generate 1,200 daily trips per acre. SANDAG documents community shopping centers located on sites with ten or more acres and 100,000 square feet or more of gross leasable area as generating driveway volumes equivalent to 700 trips per acre (or 490 community-wide trips per acre after pass-by trips are taken into account).

For several reasons inherent in all regional traffic models, the LQTM future traffic projections for a small area may be less reliable than projections developed through a detailed manual traffic analysis. When ultimately constructed, the development in each traffic analysis zone may include several different development sites with numerous access points on the General Plan roadway network and numerous local streets. The roadway network assumed in the LQTM does not include local streets and does not reflect the internal circulation plans or site access points shown in specific development plans as it would be cost prohibitive to do so.

To accurately forecast turning movements at intersections in the immediate vicinity of a development site, external trips must be assigned to individual site access points. With regional models however, all of the trips generated in each traffic analysis zone are assumed to occur at an idealized center or "centroid," even though they may, in reality, be generated at a variety of locations distributed throughout the zone. Regional models load traffic onto the roadway network from the centroid of each TAZ via idealized roadway connectors which connect the zone center to the arterial roadway system. Consequently, regional models incorporate procedures and assumptions which simplify the real world enough to estimate the future travel demand with reasonable confidence on a citywide scale. Where more specific development details are known for a small area, a detailed manual study can produce significantly improved and more reliable local traffic projections.

2.2 *Community Goals and Objectives*

This study reflects a cooperative effort between various interested parties working toward a practical long-range transportation plan for the study area in an effort to avoid the wasteful expenditure of scarce resources on the construction and maintenance of facilities which would provide more capacity than needed. Four alternative transportation plans for the study area were evaluated to determine how effectively each would meet the goals and objectives of the community. In this evaluation of four circulation networks, it was assumed that the study area would have a trip generation consistent with full buildout of the land uses in the General Plan.

The identification of clear goals and objectives for the transportation plan permits criteria to be developed with which to evaluate the effectiveness of the alternative transportation plans. The transportation plan for the study area should be able to serve the community efficiently and effectively but also achieve community goals. The Traffic and Circulation Element of *The City of La Quinta Comprehensive General Plan* identifies the following community design goal:

> *"A transportation and circulation network that efficiently, safely and economically moves people, vehicles and goods using facilities that meet the current demands and projected needs of the City, while maintaining and protecting its residential resort character."*

To achieve this goal, the Circulation Element of the General Plan has established City policy regarding the maximum acceptable daily volume-to-capacity ratio for master planned community roadways. For peak season conditions, a maximum daily volume-to-capacity ratio of 0.80 is considered the generally acceptable level upon buildout of the General Plan.[3] This represents the minimum system performance standard applied throughout this report.

Circulation Element Policy 11 (on page 44 of the General Plan) states that "Streets within planned residential areas shall be installed and maintained as private streets, and shall be developed in accordance with development standards set forth in the Development Code and other applicable standards and guidelines." Circulation Element Program 11.1 states that "Private streets will be designed to meet the standards of the City's public street system at the point where they connect with it, in order to safely integrate into it."

The transportation planning process includes the identification of goals and objectives for regional and local circulation which should be met by the optimal plan. The goals included as Attachment B and the operational objectives related to each goal were considered in the evaluation of the future transportation network alternatives for the study area.

2.3 *Roadway Network Alternatives Evaluated*

To facilitate the processing of a future General Plan Circulation Element Amendment that is consistent with adopted City circulation standards and policies, four circulation network alternatives were identified by the City of La Quinta for evaluation. The minimum circulation network classifications associated with each alternative were identified herein, based on the ultimate travel demands expected to be generated upon buildout of the General Plan land uses within study area.

---

3. *The City of La Quinta Comprehensive General Plan;* Adopted March 20, 2002 (page 23) and *City of La Quinta Master Environmental Assessment* (page 21). Policy 1 on page 40 states that the master plan of roads assure minimal levels of roadway segment and intersection operations at a V/C ratio of 0.80 and LOS D, respectively.

Roadway Network Alternative 1

Alternative 1 reflects the existing General Plan Land Use Element designations in the study area and the adopted Circulation Element roadway system alignments and functional classifications, as shown in Figure 2. This alternative designates the following roadways as four-lane undivided secondary arterials: Avenue 58 (between Madison Street and Jefferson Street), Jefferson Street (between Avenue 58 and Madison Street), Avenue 62 (between Jefferson Street and Monroe Street), and Madison Street (between Avenue 60 and Jefferson Street).

Roadway Network Alternative 2

Alternative 2 includes two circulation network changes from Alternative 1, as shown in Figure 3. Alternative 2 would downgrade Jefferson Street (between Avenue 58 and Madison Street) to a 2-lane collector street which terminates at the northwest corner of the Travertine Specific Plan. Jefferson Street would be deleted from the City of La Quinta Circulation Element between the northwest corner of the Travertine Specific Plan and Madison Street. Avenue 62 would be downgraded from a secondary arterial to a 2-lane collector street.

The Travertine Specific Plan would be served by private streets with this alternative. Avenue 58 (between Jefferson Street and Madison Street) would remain a secondary arterial, based upon the anticipated ultimate traffic volume.

Roadway Network Alternative 3

Alternative 3 would downgrade Jefferson Street to a 2-lane public collector street classification and realign Jefferson Street to the northeast (near the northern Travertine Specific Plan boundary) to improve access for the undeveloped area north of the Travertine site. As shown in Figure 4, Avenue 62 would be downgraded from a secondary arterial to a 2-lane collector street with this alternative and would connect to Jefferson Street at the intersection of Madison Street.

The residential component of the Travertine Specific Plan would be served by private streets with this alternative. Avenue 58 (between Jefferson Street and Madison Street) would remain a secondary arterial, based upon the anticipated ultimate traffic volume.

Roadway Network Alternative 4

Alternative 4 is illustrated in Figure 5. As shown therein, Jefferson Street would be downgraded to a collector street and realigned to the northeast (near the northern Travertine Specific Plan boundary) to improve access for the undeveloped area north of the Travertine site. Jefferson Street would terminate at the intersection of Madison Street, adjacent to the eastern boundary of the Travertine Specific Plan. Avenue 62 would terminate east of the levee and be downgraded from a secondary arterial to a collector street (or only allow access to emergency vehicles). Avenue 58 (between Jefferson Street and Madison Street) would remain a secondary arterial, based upon the anticipated ultimate traffic volume.

3.0 EXISTING CONDITIONS

3.1 Current Traffic Volumes

Traffic volumes in La Quinta vary by season, with the peak tourist season and traffic volumes occurring in late winter and early spring. The number of trips being generated by the existing development in the study area is relatively low. Traffic along Avenue 58, west

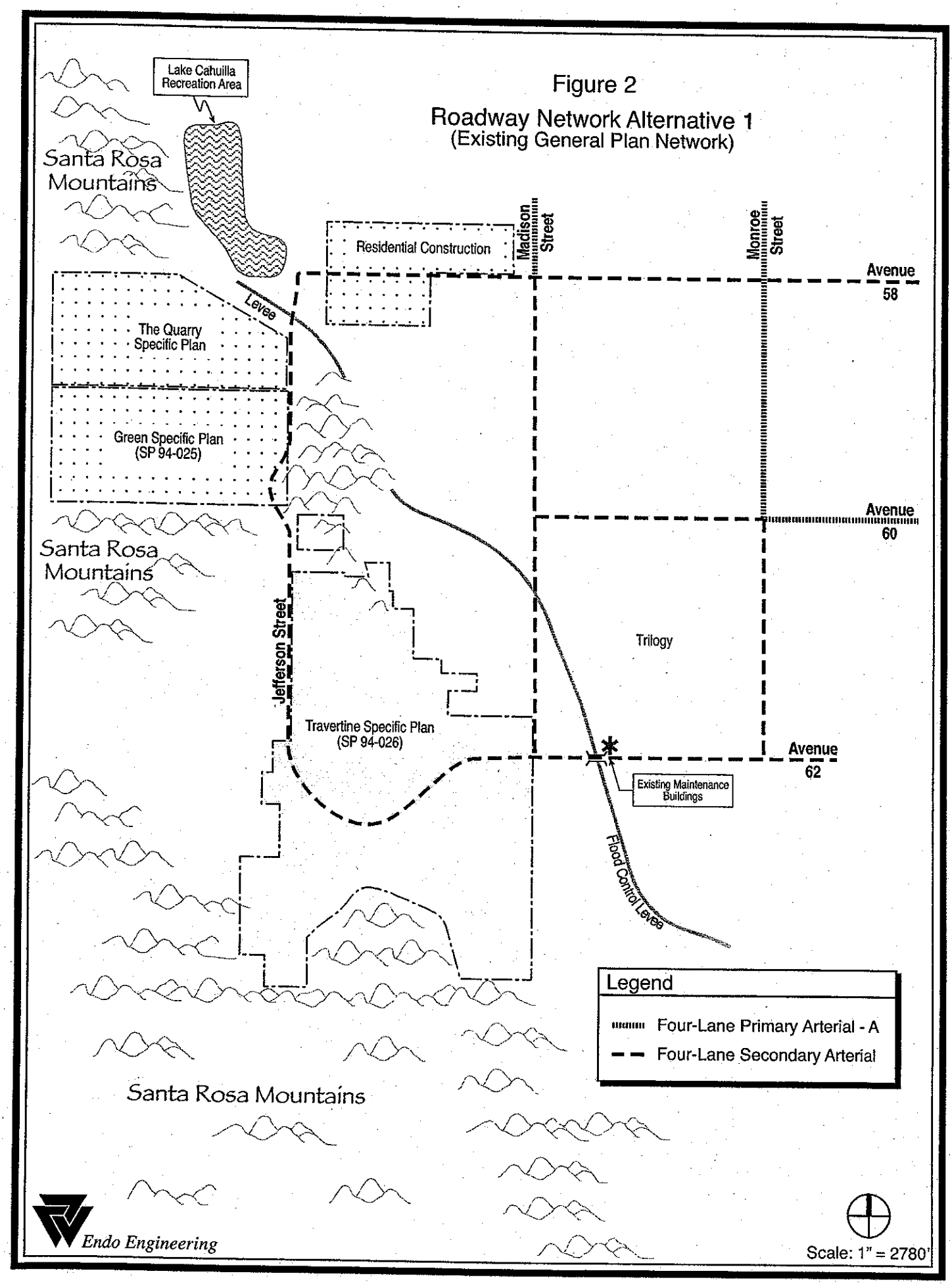


Figure 2
Roadway Network Alternative 1
(Existing General Plan Network)
Lake Cahuilla Recreation Area
Santa Rosa Mountains
Residential Construction
Madison Street
Monroe Street
Avenue 58
Levee
The Quarry Specific Plan
Green Specific Plan (SP 94-025)
Avenue 60
Santa Rosa Mountains
Jefferson Street
Trilogy
Travertine Specific Plan (SP 94-026)
Avenue 62
Existing Maintenance Buildings
Flood Control Levee
Legend
Four-Lane Primary Arterial - A
Four-Lane Secondary Arterial
Santa Rosa Mountains
Endo Engineering
Scale: 1" = 2780'

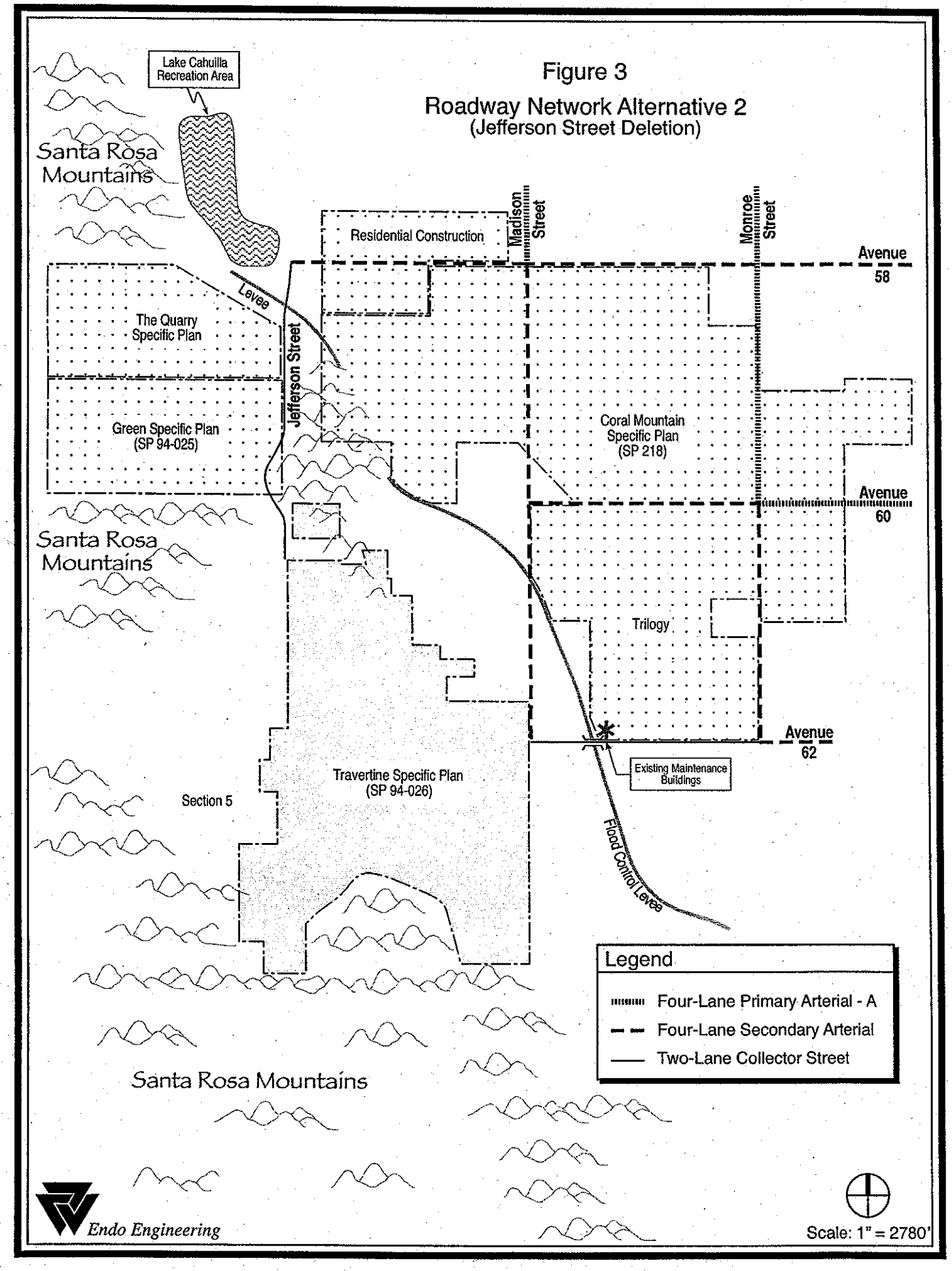


Figure 3
Roadway Network Alternative 2
(Jefferson Street Deletion)
Lake Cahuilla Recreation Area
Santa Rosa Mountains
Residential Construction
Madison Street
Monroe Street
Avenue 58
Levee
The Quarry Specific Plan
Jefferson Street
Green Specific Plan (SP 94-025)
Coral Mountain Specific Plan (SP 218)
Avenue 60
Santa Rosa Mountains
Trilogy
Avenue 62
Existing Maintenance Buildings
Travertine Specific Plan (SP 94-026)
Section 5
Flood Control Levee
Santa Rosa Mountains
Legend
Four-Lane Primary Arterial - A
Four-Lane Secondary Arterial
Two-Lane Collector Street
Endo Engineering
Scale: 1" = 2780'

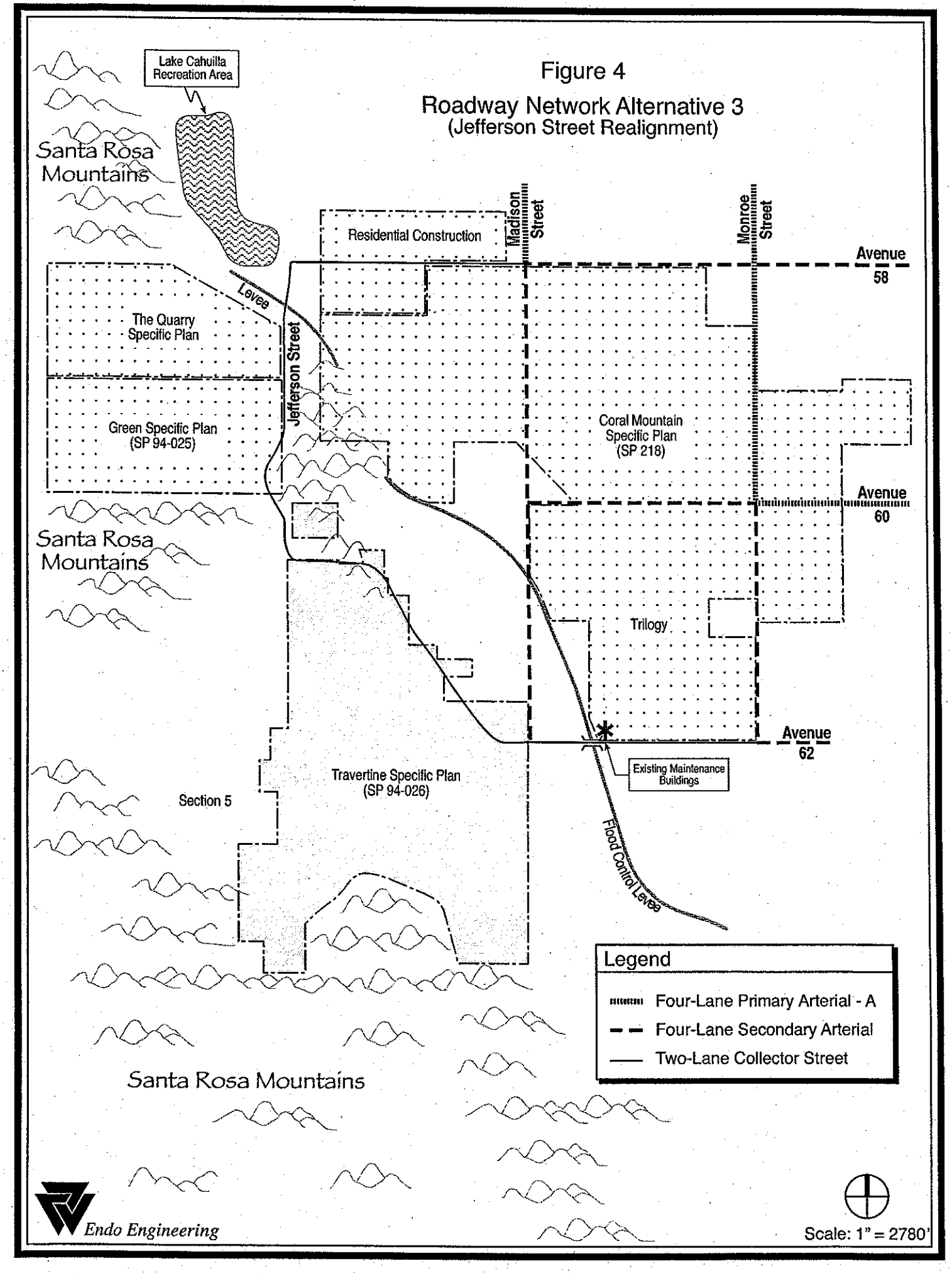


Figure 4
Roadway Network Alternative 3
(Jefferson Street Realignment)
Lake Cahuilla Recreation Area
Santa Rosa Mountains
Residential Construction
Madison Street
Monroe Street
Avenue 58
Levee
The Quarry Specific Plan
Jefferson Street
Green Specific Plan (SP 94-025)
Coral Mountain Specific Plan (SP 218)
Avenue 60
Santa Rosa Mountains
Trilogy
Avenue 62
Existing Maintenance Buildings
Travertine Specific Plan (SP 94-026)
Section 5
Flood Control Levee
Legend
Four-Lane Primary Arterial - A
Four-Lane Secondary Arterial
Two-Lane Collector Street
Santa Rosa Mountains
Endo Engineering
Scale: 1" = 2780'

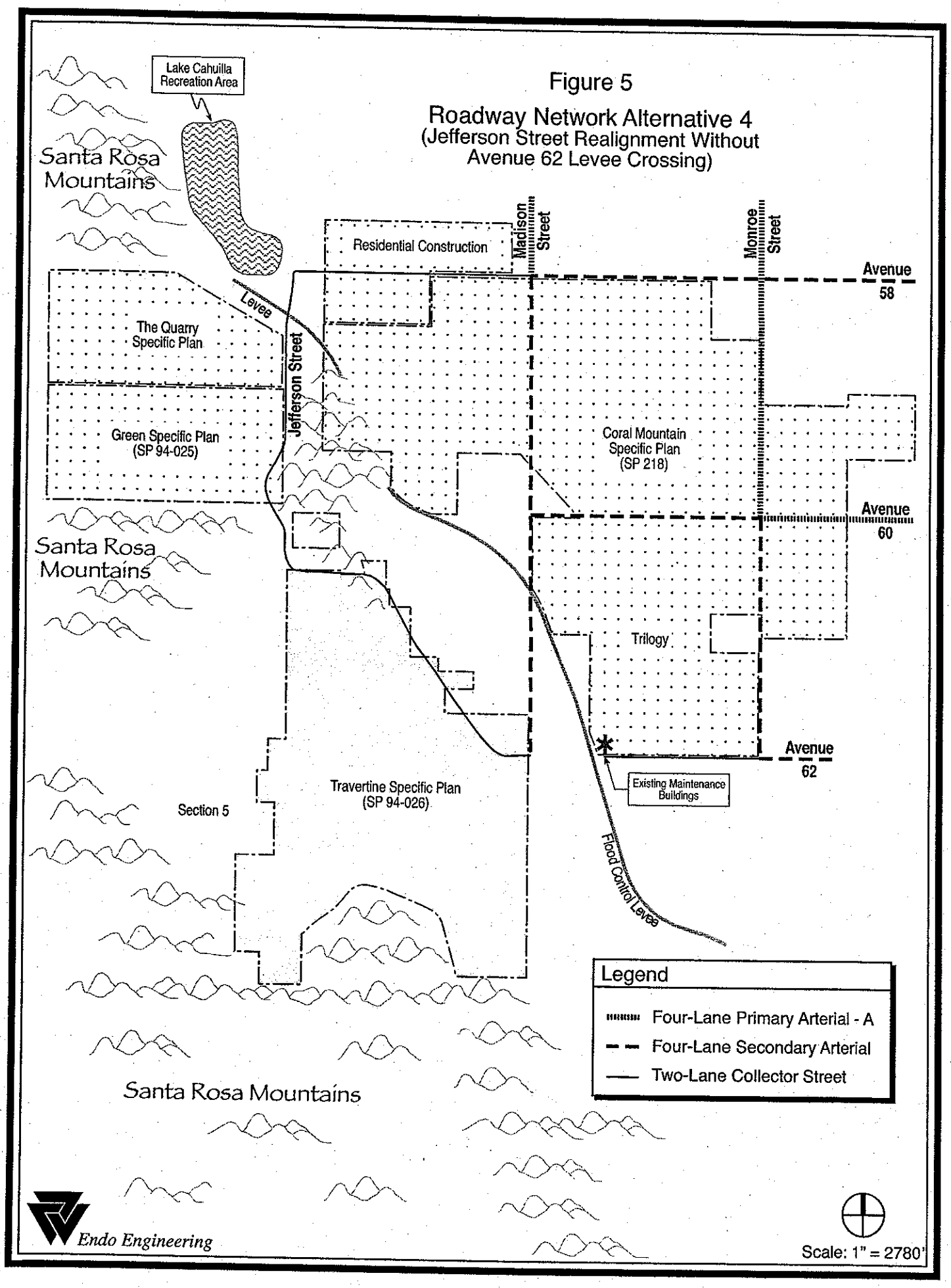


Figure 5
Roadway Network Alternative 4
(Jefferson Street Realignment Without
Avenue 62 Levee Crossing)
Lake Cahuilla
Recreation Area
Santa Rosa
Mountains
Residential Construction
Madison
Street
Monroe
Street
Avenue
58
Levee
The Quarry
Specific Plan
Jefferson Street
Green Specific Plan
(SP 94-025)
Coral Mountain
Specific Plan
(SP 218)
Avenue
60
Santa Rosa
Mountains
Trilogy
Avenue
62
Existing Maintenance
Buildings
Travertine Specific Plan
(SP 94-026)
Section 5
Flood Control Levee
Legend
Four-Lane Primary Arterial - A
Four-Lane Secondary Arterial
Two-Lane Collector Street
Santa Rosa Mountains
Endo Engineering
Scale: 1" = 2780'

of Madison Street, is currently being generated by a limited number of existing residential dwelling units and construction activities in The Quarry Specific Plan area. Traffic is also attracted by the recreational opportunities at the terminus of Avenue 58 afforded by the 135-acre Lake Cahuilla and the surrounding 710-acre County-operated recreation area (which include fishing, swimming, hiking and camping facilities). Traffic is being generated on Avenue 62, west of Monroe Street, by existing agricultural activities and the adjacent golf course maintenance facilities as well as by construction vehicles associated with the Trilogy development.

To quantify these existing traffic volumes, 24-hour machine traffic counters were placed on Avenue 58 and Avenue 62 by Counts Unlimited, Inc. on April 11, 2006. A total of 1,340 vehicles per day were identified by the traffic counter placed on Avenue 58, west of Madison Street. A total of 830 vehicles per day were identified by the traffic counter placed on Avenue 62, west of Monroe Street. The traffic count data sheets are included as Attachment C. Figure 6 shows the current daily traffic volumes in the peak season within the study area, based upon the new 24-hour traffic counts and the CVAG "2006 Traffic Census Report."

3.2 Regional Through Traffic

Riverside County has asked the Coachella Valley Association of Governments (CVAG) to explore alignments for the South Valley Parkway, a regional transportation corridor with no particular alignment or right-of-way requirement identified at present. The South Valley Parkway is envisioned as a means of carrying traffic from future development in the area southeast of the City of La Quinta north and west to Interstate 10 or up valley, in a manner similar to the Mid-Valley Parkway. One possible alignment for the South Valley Parkway being considered would involve Avenue 62 and Monroe Street.

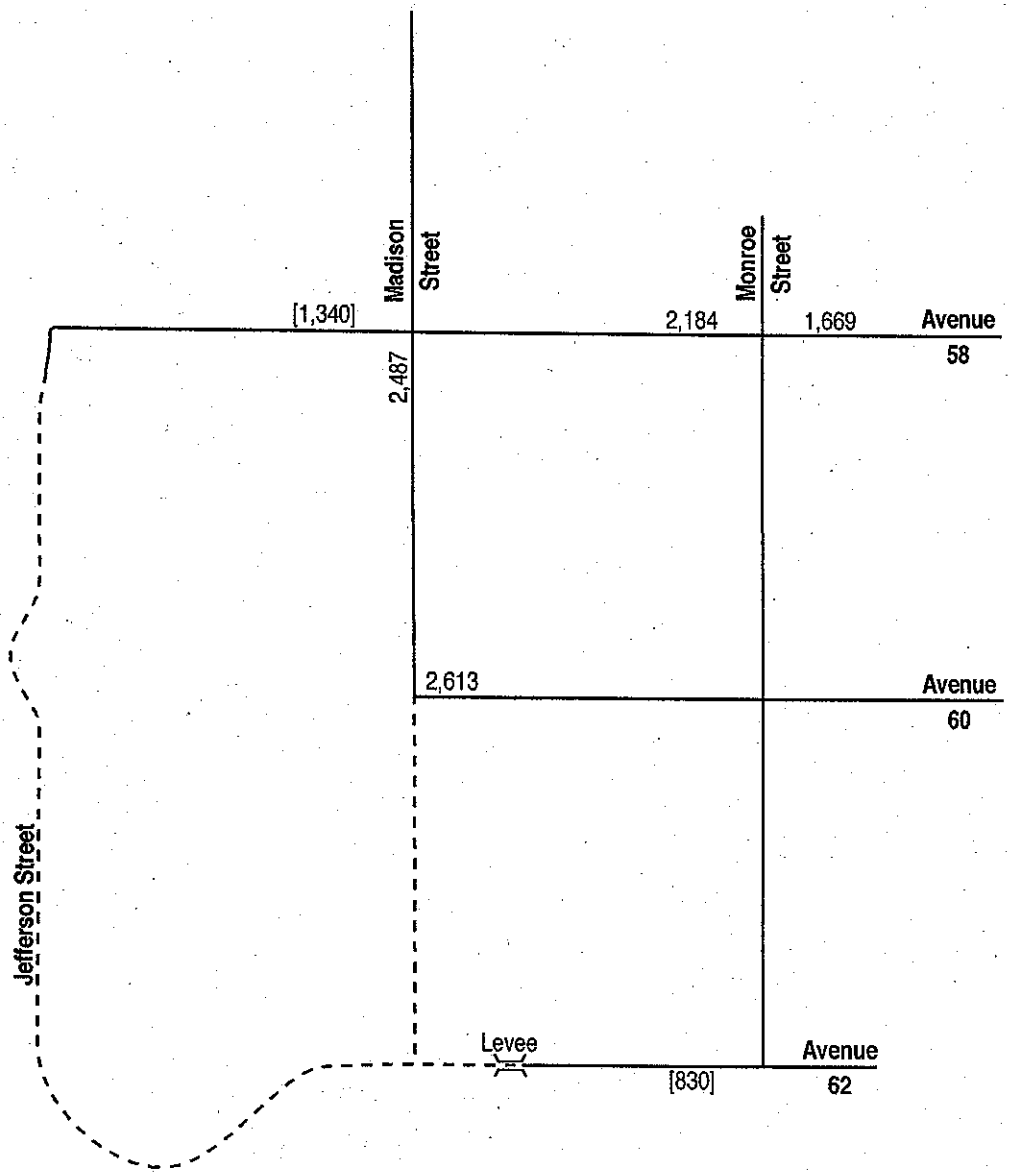
Avenue 62 and Madison Street appear to provide an alternative parallel alignment that could ultimately attract overflow traffic from Monroe Street. Avenue 62 is currently classified as a secondary arterial that connects to Jefferson Street at the intersection of Madison Street, in the Circulation Element of the *City of La Quinta Comprehensive General Plan*. However, Avenue 62 is currently a narrow two-lane east/west roadway that crosses over the flood control levee and provides access to maintenance buildings associated with the golf courses in the Trilogy development and the agricultural activity in the Travertine Specific Plan area.

Avenue 62, west of Monroe Street, will most likely remain a low-speed relatively narrow two-lane roadway that will not attract a significant amount of regional through traffic. Motorists making long regional through trips generally select routes which will minimize their travel time. Low-speed narrow roadway segments do not attract a significant number of regional through trips. All of the traffic on the three streets accessing the study area are assumed to be trips to/from the study area, rather than regional through traffic. Regional traffic would find travel on Monroe Street more direct and more likely to occur at higher speeds.

3.3 Approved Study Area Development

Travel is largely dependent on the spatial arrangement, intensity and character of land use. The Travertine Specific Plan (SP 94-026) is the largest approved development in the study area. The Travertine Specific Plan area is isolated by the flood control levee (to the east) and the natural boundaries formed by the foothills and mountains to the south and west. The Santa Rosa Mountains act as an effective barrier to the westward and southward expansion of development in the future.

Figure 6
Current Peak Season Daily Traffic Volumes



Legend

[000]	24-Hour Count on 4/11/06
000	CVAG "2006 Traffic Census Report"
——	Existing Roadway
- - -	Planned Roadway

Endo Engineering

Scale: 1" = 2780'

The Travertine Specific Plan addresses the future development of over 900 acres which are centrally located in the study area. Jefferson Street has been included in the existing General Plan Circulation Element as a secondary arterial functioning as a spine road across the Travertine Specific Plan area that will also provide access for the 331-acre Green Specific Plan (SP 94-025).

The intersection of three future secondary arterials (Jefferson Street, Madison Street, and Avenue 62) has been included in the General Plan Circulation Element abutting the northeastern corner of the Travertine Specific Plan. These roadways would ultimately provide access to the 500-room hotel and the 10-acre commercial development approved in the Travertine Specific Plan. The locations at which the hotel and the commercial development take access to the General Plan circulation system could affect whether Jefferson Street (west of Madison Street) is ultimately required to provide two or four through lanes.

As shown in Figure 1, future development west of the levee will be similar to a resort-oriented residential enclave with access to the north (via Jefferson Street and Avenue 58) and access to the east (via Jefferson Street and either Madison Street or Avenue 62). The approved development in the study area includes four sizable areas with approved Specific Plans, as well as numerous smaller pockets of residential development with access primarily to Avenue 58. The approved specific plans include the following:

- The Travertine Specific Plan (SP 94-026) – a 900-acre site with entitlements for 2,300 residential dwelling units, a 27-acre hotel (with 500 rooms) and a 10-acre commercial area, as well as two 18-hole championship golf courses;

- The Green Specific Plan (SP 94-025) - a 331-acre site with entitlements for 277 single-family detached resort homes, none of which have been constructed;

- The Quarry Specific Plan - a 367-acre site with approvals for the development of 98 single-family residential lots and a golf course west of Jefferson Street, that is partially constructed between the Lake Cahuilla Recreation Area and the Green Specific Plan; and

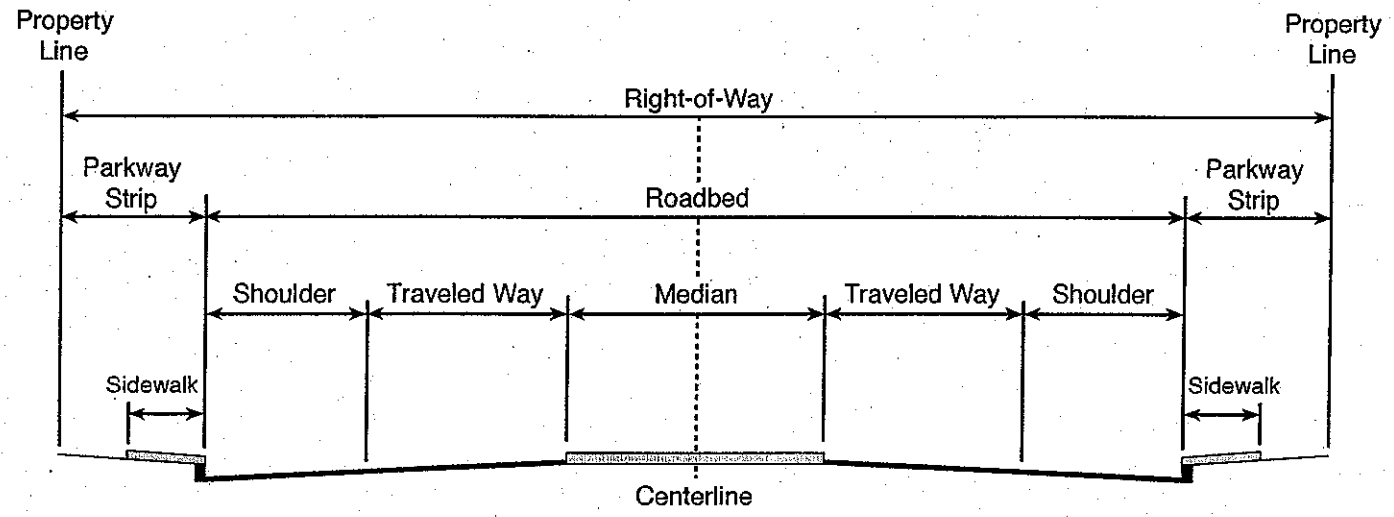
- The Retreat at the Quarry Specific Plan (SP 98-032) - a 7.36-acre development with approvals for 28 resort residential units at the northeastern corner of The Quarry Specific Plan.

Future development in the study area is summarized in Table 1, based on existing entitlements. Figure 1 shows the location of the residential land in isolated pockets of development approved or under construction along Avenue 58, west of Madison Street. The ultimate development potential of the residential land adjacent to Avenue 58 was provided by Peter Murray and Associates. Based upon the number of developed lots visible on recent aerial photographs, it was estimated that a total of 100 dwelling units are currently occupied within the developing residential areas in the study area.

The City of La Quinta Planning Department provided updated land use data for the general area on November 22, 2006. The Coral Canyon development was approved for 219 single-family dwelling units on the Green Specific Plan site (which had entitlements for and was addressed herein as 277 single-family residential dwellings).

The Quarry was approved by the City of La Quinta with 64 single-family dwellings. The Quarry Resort was approved for 5 single family dwellings. The Quarry Ranch was approved with 34 dwelling units. A total of 209 residential dwelling units were identified by the City as under construction or approved along Avenue 58. All of these units were

Figure 7
City of La Quinta Typical Street Sections



Corridor Classification	Lanes	Median (Feet)	Traveled Way (Ft.)	Shoulder (Feet)	Parkway Strip (Ft.)	Sidewalk (Feet)	Roadbed (Feet)	Right-of-Way (Ft.)
Secondary Arterial	4	12	26	0	12	6	64	88
Modified Secondary	2	18	15	8	12	6	64	88
Collector	2	—	12	8	11	6	52	74
Local Street	2	—	10	8	12	5	36	60
Cul-de-Sac	2	—	12	6	7	5	36	50

included in Table 1 as part of the 547 single-family detached dwelling units referred to as "other residential uses"

The buildout traffic projections herein were based upon the General Plan land uses or, where available, the approved Specific Plans in the study area. The Tract Map approvals and construction in the study area appear to reflect development intensities below that of the approved Specific Plans. Therefore, the traffic projections herein reflect conservative assumptions and may overstate the ultimate traffic volumes in the vicinity.

Table 1
Existing Study Area Entitlements

Project	Land Use	Quantity[a]
Travertine Specific Plan (SP 94-026)	Single-Family Detached Residential Multi-Family Attached Residential Hotel Neighborhood Commercial Two 18-Hole Golf Courses	1,526 D.U. 774 D.U. 500 Rooms (27.2 Acres) 100,000 S.F. (10 Acres) 36 Holes
Green Specific Plan (SP 94-025)	Single-Family Detached Residential	277 D.U. (331 Acres)
Other Residential[b]	Single-Family Detached Residential	547 D.U.

a. D.U. = Dwelling Units. S.F. = Square Feet of Building Area. The commercial gross floor area and the number of single-family residential versus multiple-family residential dwelling units shown reflect the 1994 *Travertine and Green Specific Plan Traffic Impact Study* prepared by Endo Engineering. The specific plan approval includes 2,300 residential dwelling units (with no specific breakdown between single-family and multiple-family residential dwellings), a 500-room hotel, and a 10-acre commercial site.

b. Includes several residential developments with access to Avenue 58, west of Madison Street, including: The Quarry Specific Plan, and The Retreat at the Quarry Specific Plan (SP 98-032) which allows 28 resort residential units on 7.36 acres at the northeastern corner of The Quarry Specific Plan. Approximately 100 dwellings units appear to currently be constructed and occupied.

3.4 Existing General Plan Circulation Element

Roadway Network Alternative 1 reflects the adopted Circulation Element roadway system alignments and functional classifications. The General Plan Circulation Element includes the following roadways as four-lane undivided secondary arterials in the study area: Avenue 58 (between Madison Street and Jefferson Street); Jefferson Street (between Avenue 58 and Madison Street); Madison Street (between Avenue 60 and Jefferson Street); and Avenue 62 (between Jefferson Street and Monroe Street).

Functional Roadway Classifications

Functional roadway classifications affect the principal geometric design features of a roadway. As shown in Figure 7, each roadway classification implies a set of minimum design standards which allow the facility to function as intended. Design features are affected by the topography of the land over which the road must pass, the degree of access control required, safety requirements, localized capacity enhancements, and economics. To

insure economy, earthwork quantities should be kept to the minimum consistent with meeting sight distance and other design requirements. The lowest cost is achieved when the grade is set to balance excavation against fill.

As shown in Table 2, the classification of a roadway determines the total width, the design speed and sight distance required, the severity of horizontal and vertical curves, and whether or not protected left-turn and right-turn bays will be provided. It also affects other features such as: parking regulations, speed limits, signal timing and coordination, zoning restrictions on direct access and turn restrictions.

Principal considerations in classifying roadways include: the travel desires of the public, the access needs of existing and future land uses, and the overall continuity of the system. The traffic volume to be served is a critical factor in determining appropriate geometric features. In addition to the future traffic volumes used to determine geometric design criteria, consideration should be given to effect of the design speed on roadway design. Other considerations include the traffic character and composition, and the degree of access control. Roads with higher volumes and speeds require more lanes, flatter grades, more gentle curves, wider shoulders and medians, separate turn lanes, and control of access. Consequently, arterials are typically part of a rectangular grid with a minimum of curves and other restrictive geometric features.

Table 2
Minimum Street Design Standards

Design Criteria	Secondary Arterial	Collector Street	Local Street
Daily Capacity	28,000 VPD	14,000 VPD	9000 VPD
Design Speed	40 MPH	30 MPH	25 MPH
Intersection Spacing	600 Feet	300 Feet	250 Feet
Right-of-Way	88 Feet	74 Feet	60 Feet
Pavement Width	64 Feet	52 Feet	36 Feet
Lane Configuration	4-Lane Undivided No Parking	2-Lane Undivided With Bike Lane	2-Lane Undivided
Access to Adjoining Property	Avoid Where Possible	Avoid In Some Cases	Acceptable
Stopping Sight Distance	450 Feet	250 Feet	160 Feet
Min. Horizontal Radius	850 Feet	450 Feet	200 Feet

Note: A cul-de-sac street should provide 36 feet of pavement within a 50-foot right-of-way with a 25 mph design speed and accommodate a maximum of 3,000 vehicles per day with two travel lanes and parking on both sides of the roadbed.

Secondary arterials have a maximum capacity of 28,000 vehicles per day. Secondaries do not generally carry the large volumes of through traffic associated with major arterials.

Secondaries provide for through traffic movement between areas and may accommodate some direct access to abutting properties. Although through traffic should be expedited to the extent practical, it may be important in some instances to limit speeds to improve safety and better serve local traffic.

Collector streets have lower design speeds and are designed to carry lower volumes than secondary arterials. Collector streets have a maximum capacity of 14,000 vehicles per day. Collector streets carry traffic from residential and other local streets to secondary arterial or higher classification facilities. Two-lane collectors collect and distribute short through trips but are not efficient for long through trips. Collector streets also serve pedestrian and bicycle traffic and accommodate public utility facilities within the right-of-way.

Local streets provide direct access to individual parcels and are used for local traffic movement. Their design features facilitate the movement of vehicles onto and off the street system from abutting parcels. Through movement on local streets is difficult and discouraged by both the design and control of the facility. Local streets in residential areas are often designed with many curves and other geometric features to encourage low speeds.

Minimum Roadway Segment Performance Standard

The existing or future projected daily traffic volumes on the Circulation Element roadways serving the study area can be compared to the daily capacity of each roadway, based upon its functional classification to identify potential circulation deficiencies. As shown in the *La Quinta General Plan Update Traffic Study*, a two-lane local street is designed to serve up to 9,000 VPD. A typical two-lane undivided collector street is designed to carry up to 14,000 vehicles per day (VPD). A secondary arterial is designed to serve up to 28,000 VPD.

The *La Quinta General Plan Update Traffic Study* states that roadway design standards should be based upon design objectives reflecting the desired character of the surrounding area as well as the projected travel demand. It identifies roadway segments with volumes comprising between 80 percent and 100 percent of their daily capacity as "near capacity." Roadway segments with volumes equal to more than 100 percent of their daily capacity are identified therein as "over capacity." Policy 1 in the Circulation Element of the *City of La Quinta Comprehensive General Plan* specifies that a minimum volume-to-capacity ratio of 0.80 and level of service D be employed as the performance standard to assure minimal levels of roadway segment and intersection operations, respectively.

The City of La Quinta draft "Traffic Study General Specifications" specify that LOS D operation with a maximum volume-to-capacity ratio of 0.90 is considered to be the generally acceptable build-out service level. This criteria applies to daily operation of roadway segments.[4] Given the General Plan level of transportation planning herein, roadway classification recommendations were based upon the more conservative daily volume-to-capacity ratio minimum performance standard of 0.80 established in the Circulation Element of the *City of La Quinta Comprehensive General Plan* to identify "near capacity" conditions and circulation network deficiencies.

3.5 Roadway Capacity

A daily volume-to-capacity ratio analysis is a "broad-brush" tool used to provide an indication of when traffic congestion may be expected on a typical urban arterial street segment. It is based on the daily traffic volume, the number of mid-block through lanes,

4. Jonasson, Timothy R., City of La Quinta "Engineering Bulletin #06-13 Draft Revision #1," Revised June 27, 2006.

and a generalized estimate of the capacity of a typical master planned facility in an urbanized area with a similar number of through lanes.

Each cross street and access point along a highway introduces conflicts and friction into the stream of through traffic on the highway and reduces the free-flow speed of that traffic. In addition, signalized intersections along a highway introduce control delays associated with cross traffic streams and generate platoons of vehicles that can influence the speed of the through traffic stream on the highway. Consequently, the capacity of a highway is largely limited by the fraction of time the highway lanes are blocked by cross traffic at signalized intersections. The traffic flow along a highway is primarily regulated by the number of signalized intersections along the highway, the signal spacing, and the capacity of the signalized intersections.

Motorists on highways encounter delays primarily at intersections, rather than mid-block locations. Consequently, the capacity of a highway is limited by the capacity of the intersections along the roadway. A reduction in the frequency of intersections can dramatically increase the capacity of a highway. The daily capacity of a highway may be increased by restricting or controlling access. Since Madison Street (between Avenue 60 and Jefferson Street) will not be providing direct access to adjacent land uses, the daily capacity of this segment may exceed that shown in the General Plan for typical secondary highways or collector streets.

3.6 Existing Daily Volume-to-Capacity Ratios

Based upon the existing traffic volumes shown in Figure 6, it appears that all of the roadways in the study area are currently operating at acceptable levels of service on a daily basis. The current daily traffic volumes are all below the daily capacity of a two-lane local street (9,000 vehicles per day).

3.7 Alternate Transportation Modes

It is in the public interest to encourage and promote the development of transportation systems embracing various modes of transportation in a manner that will serve the local community as well as tourists and visitors efficiently and effectively. Pedestrian and other non-motorized circulation is encouraged within the City of La Quinta through the provision of sidewalks, bike lanes, and multi-purpose trails along General Plan roadways. The La Quinta General Plan states that provisions in future development for bicycles, golf carts, equestrian needs, pedestrian safety and accommodation should be emphasized equally with automobile access. An extensive multi-purpose trail system has been planned as an integral part of the community circulation system. In addition, sidewalks, bike lanes, and multi-use trails are incorporated within roadway designs and rights-of-way to link recreational facilities and encourage the use of alternative transportation modes by residents and visitors.

Avenue 58 is an important route for recreational traffic that provides access to the Lake Cahuilla Recreation Area. Avenue 58 terminates at Jefferson Street, near the southern end of Lake Cahuilla and the All American Canal gravity lateral.

The Bureau of Land Management (BLM) maintains a system of public hiking and equestrian trails which traverse the Santa Rosa Wilderness Area, west of the study area and south of the Cove community. Public access must be provided to the regional multi-purpose trail systems which cross the BLM land located west of the Travertine Specific Plan. Avenue 58 currently provides public access to the trails in the Santa Rosa Mountains.

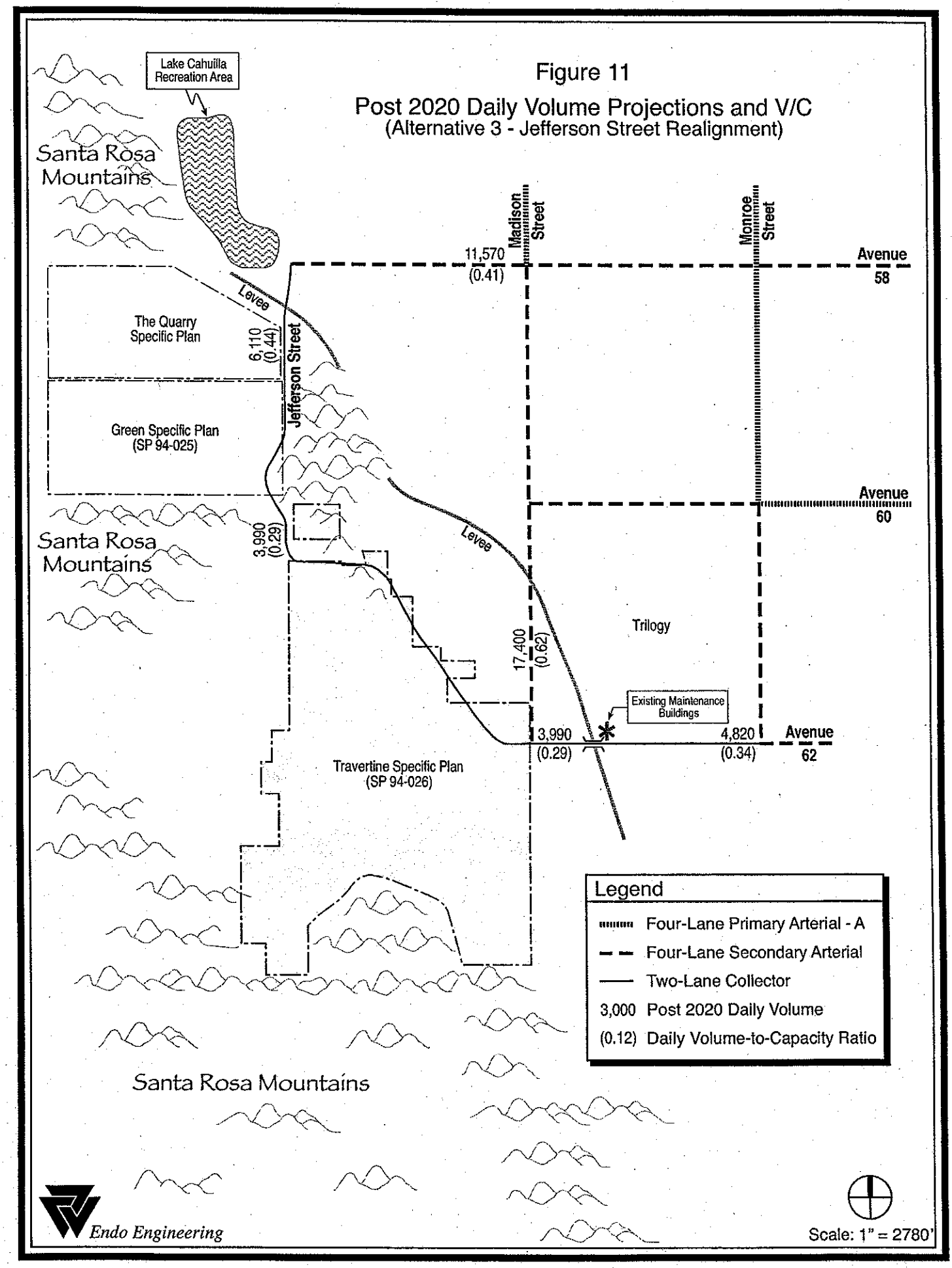


Figure 11
Post 2020 Daily Volume Projections and V/C
(Alternative 3 - Jefferson Street Realignment)
Lake Cahuilla Recreation Area
Santa Rosa Mountains
Madison Street
Monroe Street
11,570
(0.41)
Avenue 58
Levee
The Quarry Specific Plan
6,110
(0.44)
Jefferson Street
Green Specific Plan
(SP 94-025)
Avenue 60
Santa Rosa Mountains
3,990
(0.29)
Levee
Trilogy
17,400
(0.62)
Existing Maintenance Buildings
3,990
(0.29)
4,820
(0.34)
Avenue 62
Travertine Specific Plan
(SP 94-026)
Legend
Four-Lane Primary Arterial - A
Four-Lane Secondary Arterial
Two-Lane Collector
3,000 Post 2020 Daily Volume
(0.12) Daily Volume-to-Capacity Ratio
Santa Rosa Mountains
Endo Engineering
Scale: 1" = 2780'

A multi-purpose trail is shown in Exhibit 3.10 of the General Plan along Avenue 58 and along Jefferson Street, from Avenue 58 south to a point mid-way to Avenue 62. Another multi-purpose trail is shown extending west of Avenue 60 to Jefferson Street. A multi-purpose trail is shown in the General Plan along the north side of Avenue 62, east of Madison Street. Several of the multi-purpose trails planned west of the Travertine Specific Plan will be accessible from the trail heads located near the Cove community. There is no multi-purpose trail planned along Madison Street (between Avenue 62 and Avenue 58) or along Jefferson Street (east of Madison Street or south of the alignment of Avenue 60).

The General Plan shows a pedestrian/hiking trail along Avenue 58, from Madison Street west to Jefferson Street, then northwest to encircle the Cove community. This trail provides access to both the Bear Creek Trail and the Cove Oasis Trail head.

The "City of La Quinta Comprehensive General Plan" Circulation Element include Class II bikeways in the study area along: Avenue 58, Jefferson Street, Avenue 62, and Madison Street. A Class I bicycle trail (an exclusive bicycle/pedestrian lane) is shown in the General Plan as a master planned multi-purpose trail south of Lake Cahuilla, along the flood control levee shown in Figure 1, where Avenue 58 terminates and Jefferson Street begins.

4.0 General Plan Buildout Conditions

People travel to satisfy their needs for employment, shopping, an education, personal business, social recreation, etc. The amount of travel destined to a particular area depends on the type and intensity of the land uses in that area as well as the accessibility of that area with respect to the rest of the region.

To properly plan for the transportation needs of the study area, the type and amount of travel which will take place in the area must be understood. Regional travel forecasts can provide a wealth of information related to the future travel characteristics of various areas within the region. The gravity models developed to simulate the Coachella Valley and the City of La Quinta identify traffic analysis zones and simulate the trip-making characteristics of the development in each of these discrete areas. These models employ local origin-destination survey data to estimate the direction of travel and the length of the trips originating from the land in the study area. They have been calibrated with known data and forecast travel for those areas of the region which were predominantly undeveloped during the origin-destination survey.

Once the amount of travel that will be generated in the study area is known, transportation network alternatives can be evaluated to differentiate the effects of changes in accessibility for various portions of the study area. Travel can be allocated to each major section (link) of the highway network to simulate the traffic flows from the approved Specific Plans and the General Plan land uses. This traffic assignment procedure provides a forecast of future traffic flows for each future highway network and every highway section in the study area. The future traffic flows are evaluated to identify a transportation network that will fit and support the approved future land use pattern as well as meet the community goals and objectives.

As shown in Table 1, the future development in the study area is expected to include up to 3,124 residential dwelling units, upon buildout of the General Plan. Residential land uses exhibit a predictable pattern of trip generation. Between 80 and 90 percent of all trips made by residents of an area originate or end at home. Therefore, residential land uses will be important trip generators in the study area.

4.1 LQTM Trip-Generation Forecast For General Plan Buildout

Based upon Exhibit 4-A of the *La Quinta General Plan Update Traffic Study,* the projected traffic volume upon buildout of the adopted General Plan is 14,700 vehicles per day on Avenue 58 (west of Madison Street) and 19,100 vehicles per day on Avenue 62 (west of Monroe Street). Assuming that no through traffic was included in these projections, the land uses in the General Plan are expected to result in an external trip generation totaling 33,800 vehicles per day, upon full buildout of the General Plan land uses within the study area.

The existing General Plan trip generation of 33,800 vehicles per day is based upon productions and attractions associated with the number of acres of developable land with each General Plan land use designation, rather than detailed land use plans or site-specific development intensities. To determine the change in trip generation if the number of acres of development remains unchanged, but the intensity of the development decreases, the trip generation of the study area was estimated using the procedures specified in the ITE *Trip Generation* (7th Edition, 2003) manual and the ITE companion document *Trip Generation Handbook* (Second Edition, 2004).

4.2 General Plan Buildout Trip Generation Based Upon ITE Rates

All of the trip-generation rates provided by the ITE reflect isolated single-use stand-alone developments. When residential and neighborhood commercial uses are included in the same development, the traffic added to adjacent streets may be less than the sum of the residential trip generation and the commercial trip generation. The reduction is attributable to trips being made between the commercial use and adjacent residential uses that remain internal to the proposed development. These internal trip interactions are counted twice (once for the commercial use and again for the residential use) when the trip generation of the individual uses are summed to establish the "unadjusted" trip generation.

The "unadjusted" trip generation estimate for the study area is provided in Table 3, based upon the land uses included in Table 1. The "unadjusted" daily trip generation associated with the General Plan land uses in the study area is approximately 34,070 daily trips. This estimate ignores pass-by trips (i.e., those that occur when motorists passing a commercial development on their way from an origin to a destination other than the commercial center opt to stop and shop).

The "unadjusted" trip generation total in Table 3 also ignores the double counting of internal trip interactions associated with commercial development that is located adjacent to residential land uses in the Travertine Specific Plan area. Following the addition of the traffic currently generated by the existing development in the study area (2,170 vehicles per day) the total number of trips upon General Plan buildout that would be associated with development in the study area would be 36,240 daily trips (including double-counted "internal" trips, commercial pass-by trips, and "external" trips).[5]

Double Counting and Pass-By Trip Adjustments

The 36,240 "unadjusted" daily trips associated with buildout of the study area include 7 percent more trips or 2,440 daily trips more than the 33,800 external daily trips projected by the La Quinta Traffic Model. This is reasonable, since the LQTM incorporates a lower trip generation rate for commercial uses to account for pass-by trips and accounts for the double counting of internal trip interactions between the different traffic analysis zones in

5. External trips are those with either an origin or a destination outside the study area. Internal trips are those trips with both an origin and a destination within the study area.

the study area by balancing trip productions with trip attractions. The interactions in the LQTM between the commercial land uses and the residential land uses in the study area result in a smaller number of "external" trips being generated by the study area upon General Plan buildout than indicated by the "unadjusted" projection.

Table 3
"Unadjusted" Trip Generation Associated With All Approved Undeveloped Land Uses Within the Study Area

Land Use Category (ITE Land Use Code)	Land Use Quantity[a]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily 2-Way
Travertine S.P.[b]								
Residential SFD (210)	1526 DU	269	808	1,077	785	461	1,246	12,760
Residential MFA (230)	774 DU	45	220	265	216	106	322	3,650
Hotel (310)	500 Rooms	183	117	300	156	139	295	4,100
Commercial Retail (820)	100 TSF	95	61	156	301	327	628	6,790
Subtotal		592	1,206	1,798	1,458	1,033	2,491	27,300
Green Specific Plan								
Residential SFD(210)	277 DU	51	152	203	169	99	268	2,650
Other Residential[c]								
Residential SFD(210)	447 DU	81	242	323	260	153	413	4,120
Total		724	1,600	2,324	1,887	1,285	3,172	34,070

a. DU=Dwelling Units; TSF=Thousand Square Feet of Gross Floor Area. Rooms=Hotel Rooms.
b. Based upon the regression equations for ITE Land Use Code 210 (Single-Family Detached Residential), Land Use Code 230 (Multi-Family Attached Residential), Land Use Code 310 (Hotel), and Land Use Code 820 (Shopping Center) published by the ITE in *Trip Generation* (7th Edition, December, 2003).
c. Does not include the 100 occupied dwelling units shown in Table 1. The trips generated by the 100 occupied dwellings are included in the 24-hour traffic count made on Avenue 58, west of Madison Street.

Although the external trip generation projected with the LQTM and the "unadjusted" trip generation estimated with the ITE rates for the study area as a whole are comparable (within 7 percent), they are not identical because the ITE projection includes external and internal trips as well as commercial pass-by trips. To maintain consistency with the LQTM, the "adjusted" ITE trip generation was equated to the LQTM external trip forecast by reducing the "unadjusted" ITE commercial trip generation by 2,440 daily trips. This adjustment to the commercial trip generation represents only a small portion (less than 7 percent) of the total trip generation of the study area as a whole.

For the number of trips generated by the approved specific plans and General Plan land uses within the study area to be consistent with the "external" traffic assignment developed with the LQTM, the "external" trip generation associated with the 10-acre commercial development approved for the Travertine Specific Plan was assumed to be 4,350 adjusted weekday trips (64 percent of the "unadjusted" 6,790 weekday commercial trip generation shown in Table 3). This reduction of 36 percent of the "unadjusted" commercial trip generation corrects the double counting of internal trip interactions and reflects the assignment of "internal" commercial trips to nearby residential uses that will be constructed within the Travertine Specific Plan area and the study area as a whole. A total of 4,350

weekday external commercial trips (including employee trips, delivery vehicle trips, service vehicle trips, and retail patron trips) would be expected to enter or leave the study area. Any commercial trips in excess of 4,350 per day was assumed to remain within the study area (i.e., have an origin and a destination within the study area). Given the isolated location of the commercial site and the number of residences planned for the study area, this assumption appears to be reasonable and conservative.

SANDAG publishes both driveway and community-wide trip generation rates for commercial centers which permit pass-by trip adjustments to be incorporated as well as trip reductions associated with mixed-use developments where residential and commercial/retail uses are combined. Driveway and community-wide trip generation rates published by SANDAG were reviewed to validate the assumption that an appropriate correction for the "unadjusted" ITE commercial trip generation estimate would be the use of an adjusted value that represents 64 percent of the "unadjusted" commercial trip generation projected with ITE rates developed through counts of the driveway volumes of isolated stand-alone commercial centers.

The SANDAG publication entitled *San Diego Traffic Generators* (May, 2003) documents the weekday trip generation rate for the driveways of neighborhood shopping centers. The community-wide weekday trip generation rate of a new neighborhood commercial project (after pass-by trips and mixed-use development internal trips are accounted for) is identified as 60 percent of the driveway rate cited.

SANDAG also identifies the trip generation of community shopping centers at their driveways. The community-wide weekday shopping center trip generation rate, following adjustments for pass-by trips and internal trip interactions at mixed-use developments is cited as 70 percent of the driveway rate. This data indicates that the community-wide impact of a commercial center is 30 to 40 percent less than indicated by ITE trip generation rates developed through counts of the driveway volumes of isolated stand-alone commercial centers. It validates the assumption advanced above that an appropriate correction for the "unadjusted" ITE commercial trip generation estimate would be the use of an adjusted value which is 36 percent less than the "unadjusted" ITE commercial trip generation forecast.

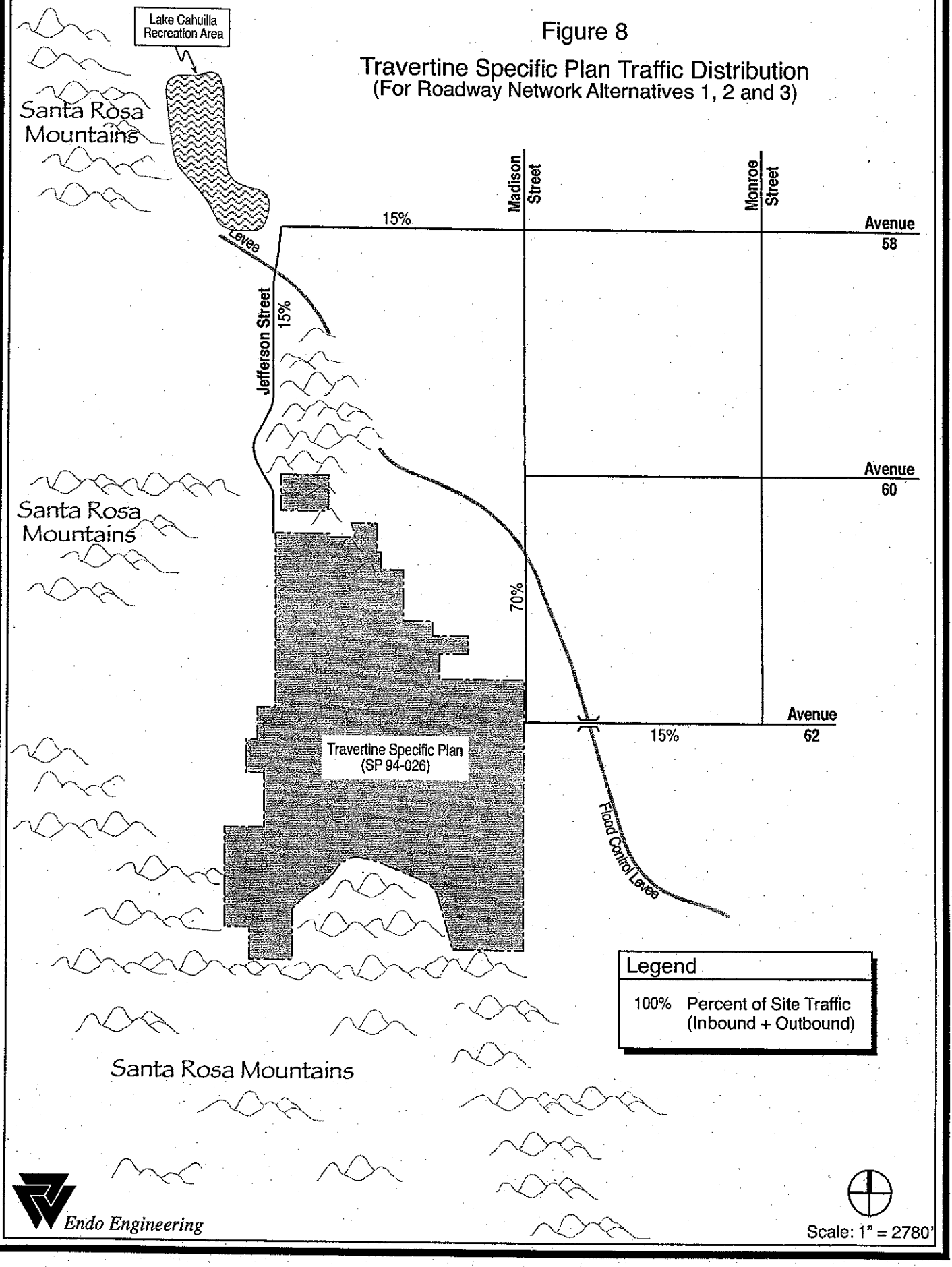
4.3 Traffic Distribution and Assignment

Transportation planning studies typically estimate the direction of travel and the length of the trips originating in a study area with a gravity model simulation. The majority of the trips generated by the Travertine Specific Plan will be generated near the intersection of Madison Street and Avenue 62. Most of the trips originating in the Travertine Specific Plan area will have destinations to the north, and utilize Madison Street as the quickest and shortest access route from the project site. A portion of the traffic generated in the northern portion of the Travertine site will find Jefferson Street and Avenue 58 a quicker access route when leaving the study area. A small portion of the traffic from the study area may utilize Avenue 62 to reach destinations to the east, or to access the future South Valley Parkway. The traffic distribution assumed for the Travertine Specific Plan is shown in Figure 8.

In addition, ten percent of the traffic from the Green Specific Plan was assigned to Avenue 62 for roadway network Alternatives 1, 2 and 3. No traffic was assigned to Avenue 62 with Alternative 4, as Avenue 62 would be closed to through traffic at the levee with this roadway network alternative.

Figure 8

Travertine Specific Plan Traffic Distribution
(For Roadway Network Alternatives 1, 2 and 3)



4.4 General Plan Buildout Traffic Projections and V/C Ratios By Roadway Network Alternative

The "unadjusted" trip generation for the study area associated with the approved General Plan and Specific Plan land uses is shown in Table 3 as 34,070 daily trips. With the previously discussed adjustment to the Travertine Specific Plan commercial trip generation, 31,630 new daily trips were distributed to the study area street system. In addition, the current traffic generated by the existing development in the study area (as determined by the 24-hour traffic counts of 1,340 vehicles per day on Avenue 58, west of Madison Street, and 830 vehicles per daily on Avenue 62, west of Monroe Street) was added to the buildout daily volume projections for those roadway segments.

Roadway Network Alternative 1

Roadway Network Alternative 1 reflects the existing General Plan Land Use Element designations in the study area and the adopted Circulation Element roadway system alignments and functional classifications. The post-2020 daily traffic volume projections and the daily volume-to-capacity (V/C) ratios with Alternative 1 are shown in Figure 9. All of the study area arterials would be operating well below their master planned capacities, with a maximum V/C ratio of 0.62 on Madison Street, south of Avenue 60. Three of the five roadway links would be operating at less than 22 percent of their daily capacities.

Table 4 provides a summary of the functional roadway classifications with Roadway Network Alternative 1, the corresponding lane configuration, the daily capacity, the projected post-2020 daily traffic volume, and the daily volume-to-capacity ratio for each roadway segment in the study area. As shown therein, the roadway network in the Circulation Element of the existing General Plan would serve the future travel demands associated with buildout of the study area per the General Plan land use designations at acceptable levels of service, as evidenced by the low daily volume-to-capacity ratios.

Table 4
Daily Traffic Projections and V/C Ratios
Upon Buildout of the Current General Plan[a]
(Roadway Network Alternative 1)

Roadway Segment	Classification (Lane Configuration)	Volume (VPD)	Capacity (VPD)	Daily V/C Ratio
Avenue 58				
- West of Madison Street	Secondary (4U)	11,570	28,000	0.41
Jefferson Street				
- South of Avenue 58	Secondary (4U)	6,110	28,000	0.22
Madison Street				
- South of Avenue 60	Secondary (4U)	17,400	28,000	0.62
Avenue 62				
- West of the Levee	Secondary (4U)	3,990	28,000	0.14
- West of Monroe Street	Secondary (4U)	4,820	28,000	0.17

a. Assumes buildout of the land uses in the study area per the existing General Plan Land Use Element and that all roadway segments are four-lane undivided secondary arterials with alignments as shown in the existing General Plan Circulation Element.

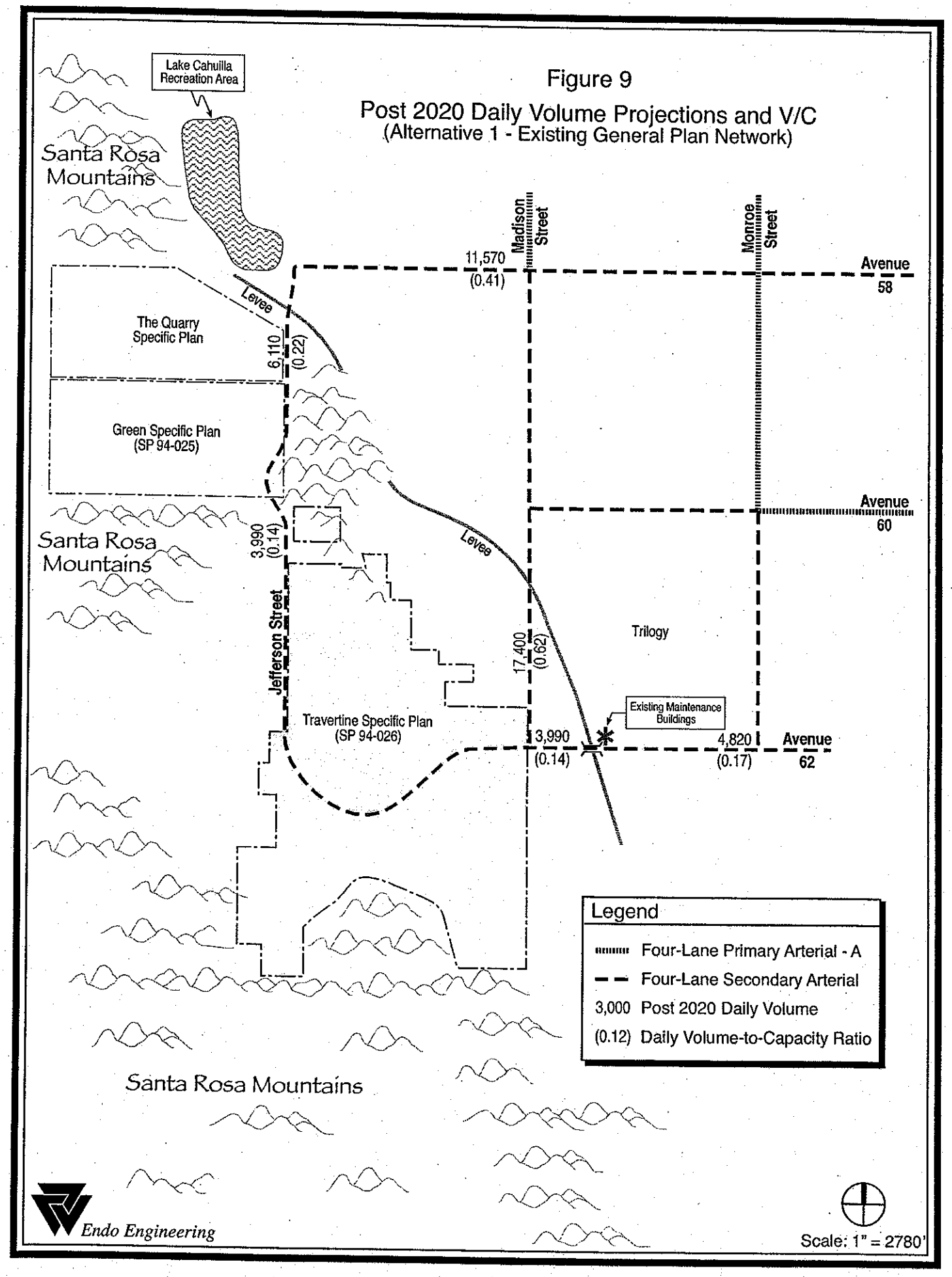


Figure 9
Post 2020 Daily Volume Projections and V/C
(Alternative 1 - Existing General Plan Network)
Lake Cahuilla Recreation Area
Santa Rosa Mountains
Madison Street
Monroe Street
11,570
(0.41)
Avenue 58
Levee
The Quarry Specific Plan
6,110
(0.22)
Green Specific Plan (SP 94-025)
Avenue 60
Santa Rosa Mountains
3,990
(0.14)
Levee
Jefferson Street
Trilogy
17,400
(0.62)
Existing Maintenance Buildings
Travertine Specific Plan (SP 94-026)
3,990
(0.14)
4,820
(0.17)
Avenue 62
Legend
Four-Lane Primary Arterial - A
Four-Lane Secondary Arterial
3,000 Post 2020 Daily Volume
(0.12) Daily Volume-to-Capacity Ratio
Santa Rosa Mountains
Endo Engineering
Scale: 1" = 2780'

It can be concluded from Table 4 that the roadway network currently planned to serve the study area is larger than necessary to accommodate the level of development expected to ultimately occur. Secondary arterials have a maximum capacity of 28,000 vehicles per day. Both Jefferson Street and Avenue 62 are projected to carry future traffic volumes low enough to be easily accommodated by a lower classification two-lane roadway. With Madison Street as a four-lane secondary highway extending from Avenue 60 to Avenue 62, the secondary arterial classifications of Avenue 58, Jefferson Street, and Avenue 62 are not warranted, based upon the future traffic projections. As secondary arterials, these transportation facilities would carry future traffic volumes which comprise between 14 and 41 percent of their daily capacity.

In the LQTM, a local street has a capacity of 9,000 vehicles per day. Consequently, a two-lane local street would provide adequate capacity to serve the future travel demands projected for Avenue 62 (west of Monroe Street) and Jefferson Street (south of Avenue 58). As a collector street, Avenue 58 (west of Madison Street) would have a capacity of 14,000 vehicles per day. With a future volume of 11,570 vehicles per day, Avenue 58 would have a daily V/C of 0.83 if classified as a two-lane collector street. Madison Street is projected to ultimately accommodate 17,400 vehicles per day upon General Plan Buildout. A daily volume of this magnitude would exceed the design capacity of a typical two-lane collector street and justify the current secondary arterial classification in the General Plan.

Roadway Network Alternative 2

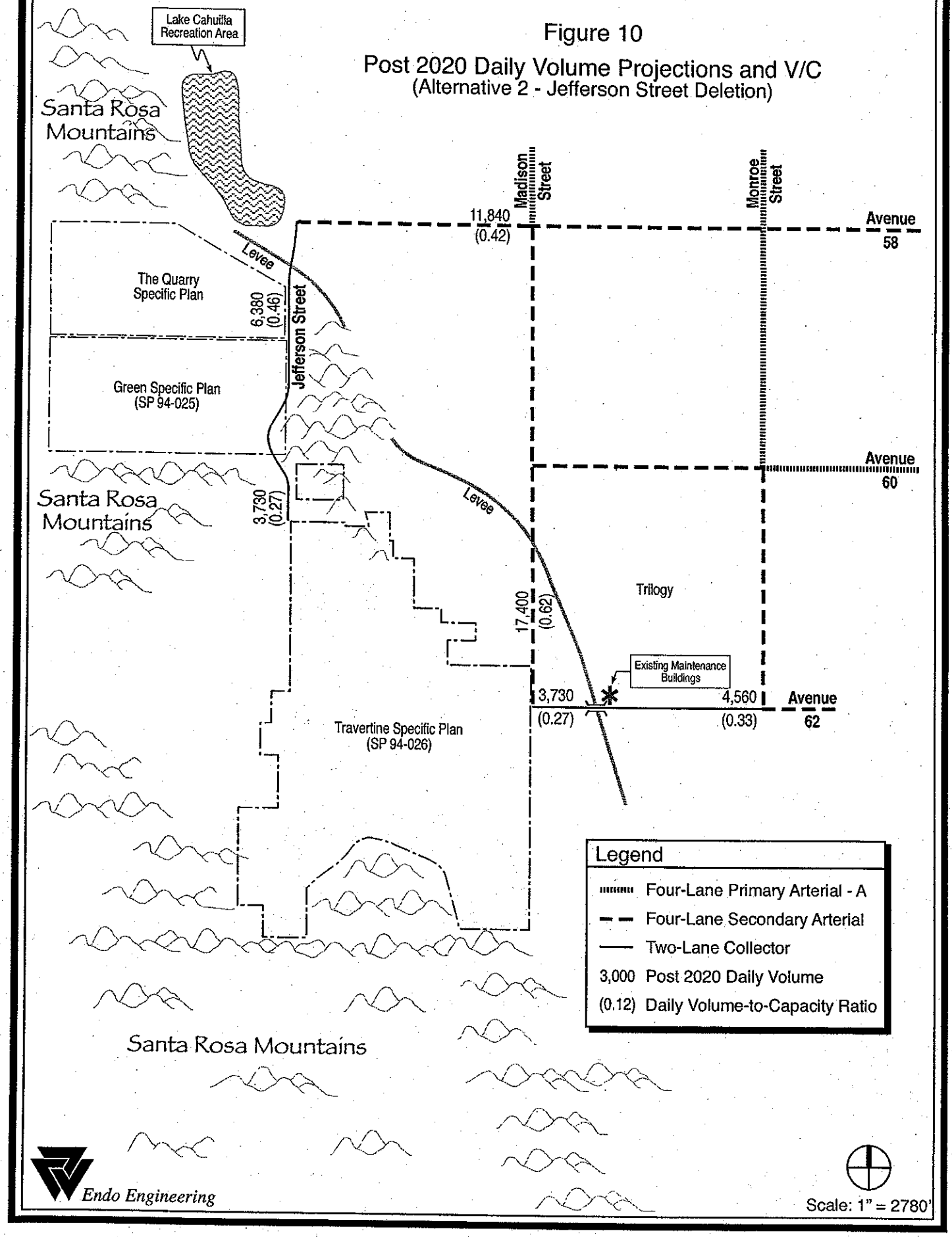
Alternative 2 would downgrade Jefferson Street (south of Avenue 58) to a 2-lane collector street that terminates at the northwest corner of the Travertine Specific Plan. Jefferson Street would be deleted from the City of La Quinta Circulation Element, between the northwest corner of the Travertine Specific Plan and Avenue 62. With this alternative, Jefferson Street and Avenue 60 would be collector streets, with Avenue 58 and Madison Street remaining secondary arterials. The post-2020 daily traffic projections upon buildout of the existing General Plan land uses with Roadway Network Alternative 2 are shown in Figure 10.

Table 5 provides a summary of: the roadway classifications assumed, lane configurations, daily capacities, projected post-2020 daily traffic volumes, and the daily volume-to-capacity ratios for each roadway segment in the study area with Roadway Network Alternative 2. As shown therein, with Jefferson Street deleted, the roadway network would serve the future travel demands associated with buildout of the study area per the adopted General Plan land use designations. The master planned roadways would carry traffic volumes comprising between 27 and 62 percent of their daily capacity. With a four-lane secondary classification, Madison Street (south of Avenue 60) would carry 17,400 vehicles per day and operate at 62 percent of its design capacity. Avenue 62 would accommodate traffic volumes comprising up to 33 percent of the capacity of a two-lane collector street. Jefferson Street north of the Travertine Specific Plan would accommodate traffic volumes which comprise 46 percent of the capacity of a two-lane collector street.

Avenue 58 could carry 11,840 vehicles per day (85 percent of the capacity of a two-lane collector street). However, Avenue 58 carries recreational traffic, which varies with the season and could grow substantially in the future. Avenue 58 will function as the primary community and recreational traffic evacuation route in the event of flooding or other natural disasters. In addition, Avenue 58 will carry a substantial number of trucks (during construction activities) in the study area as well as trucks towing trailers entering and leaving the Lake Cahuilla Recreation Area. Therefore, the current secondary classification of Avenue 58 appears to be appropriate.

Figure 10

Post 2020 Daily Volume Projections and V/C
(Alternative 2 - Jefferson Street Deletion)



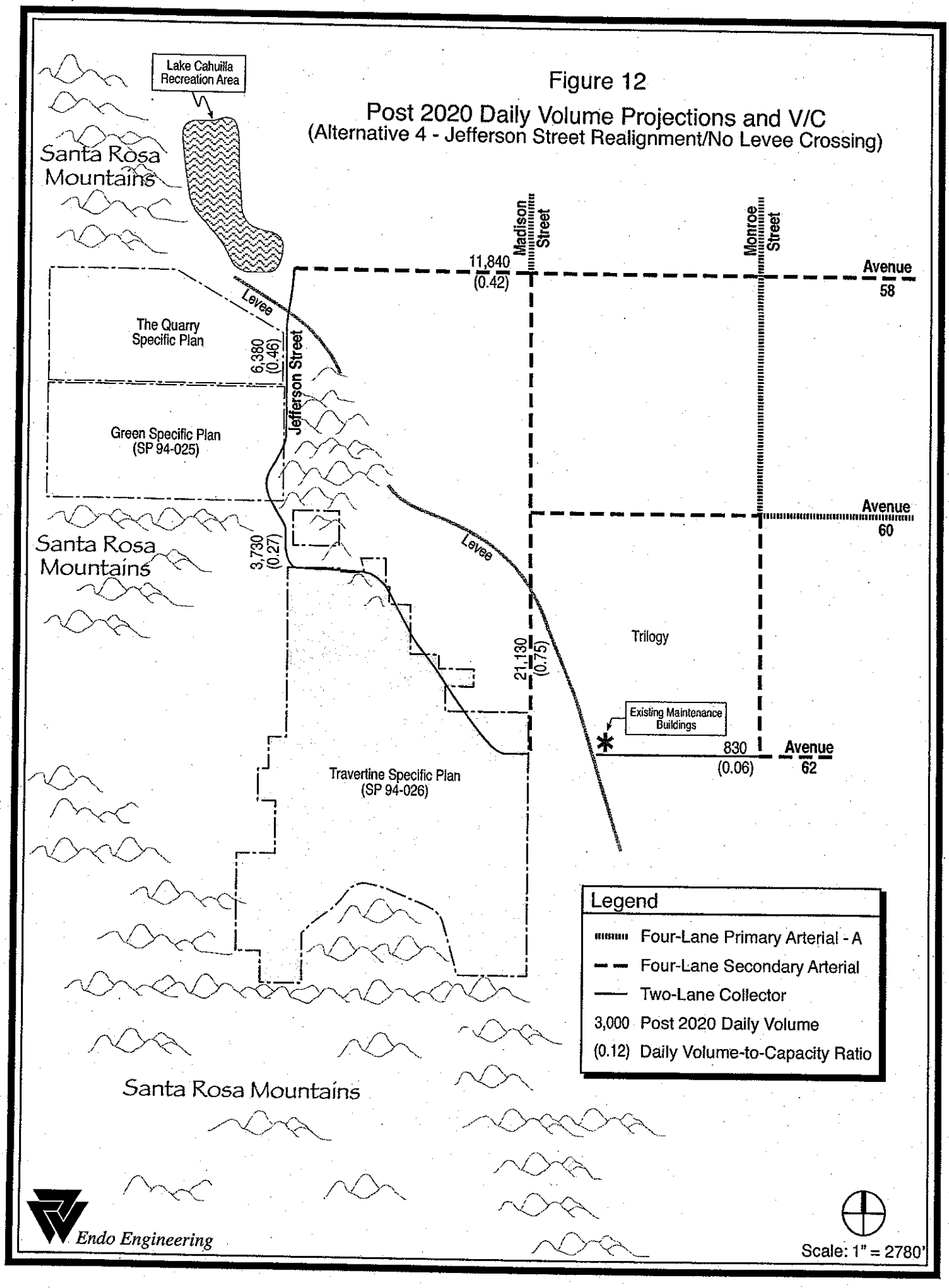


Figure 12
Post 2020 Daily Volume Projections and V/C
(Alternative 4 - Jefferson Street Realignment/No Levee Crossing)
Lake Cahuilla Recreation Area
Santa Rosa Mountains
Madison Street
Monroe Street
11,840
(0.42)
Avenue 58
Levee
The Quarry Specific Plan
6,380
(0.46)
Jefferson Street
Green Specific Plan
(SP 94-025)
Avenue 60
Santa Rosa Mountains
3,730
(0.27)
Levee
Trilogy
21,130
(0.75)
Existing Maintenance Buildings
830
(0.06)
Avenue 62
Travertine Specific Plan
(SP 94-026)
Legend
Four-Lane Primary Arterial - A
Four-Lane Secondary Arterial
Two-Lane Collector
3,000 Post 2020 Daily Volume
(0.12) Daily Volume-to-Capacity Ratio
Santa Rosa Mountains
Endo Engineering
Scale: 1" = 2780'

Table 5
Daily Traffic Projections and V/C Ratios
Upon GP Buildout With Jefferson Street Deleted[a]
(Roadway Network Alternative 2)

Roadway Segment	Classification (Lane Configuration)	Volume (VPD)	Capacity (VPD)	Daily V/C Ratio
Avenue 58				
- West of Madison Street	Secondary (4U)	11,840	28,000	0.42
Jefferson Street				
- South of Avenue 58	Collector (2U)	6,380	14,000	0.46
Madison Street				
- South of Avenue 60	Secondary (4U)	17,400	28,000	0.62
Avenue 62				
- West of the Levee	Collector (2U)	3,730	14,000	0.27
- West of Monroe Street	Collector (2U)	4,560	14,000	0.33

a. Assumes buildout of the land uses in the study area per the adopted General Plan and Roadway Network Alternative 2.

Roadway Network Alternative 3

Alternative 3 includes a public two-lane street connection between Jefferson Street and Avenue 62. With this roadway network alternative, Jefferson Street and Avenue 62 were assumed to be collector streets. Avenue 58 and Madison Street retained their secondary arterial classifications. The projected daily traffic volumes with Roadway Network Alternative 3 are shown in Figure 11.

With Jefferson Street realigned and downgraded to a collector street, the roadways evaluated would carry traffic volumes comprising between 29 and 62 percent of their daily capacity, as shown in Table 6. Jefferson Street would carry future traffic volumes comprising 44 percent of its design capacity. Similarly, Avenue 62 (west of Monroe Street) would serve future traffic representing 29 to 34 percent of its capacity as a collector street. Future traffic flows on Madison Street, south of Avenue 60, would exceed the design capacity of a collector street and be designated a secondary highway with this roadway network alternative.

Roadway Network Alternative 4

With Alternative 4, Avenue 62 would terminate east of the levee (or only allow access by emergency vehicles). As a collector street, Jefferson Street would serve daily traffic volumes equivalent to 46 percent of its collector street capacity. If Avenue 62 does not cross over the dike to connect to Jefferson Street, the future volume on Avenue 62 is expected to be substantially decreased. Fewer than 1,000 vehicles per day would be expected to use Avenue 62 in the future (6 percent of the capacity of a collector street).

Based on the projected future traffic volume, Avenue 62 could be downgraded to an at-grade local street or a cul-de-sac street east of the dike with Roadway Network Alternative 4. This alternative would eliminate the need for additional right-of-way along Avenue 62 to provide lateral support for an elevated roadway at the dike. Special provisions would, however, need to be made for the multi-purpose trail connection (from Monroe Street to

Madison Street) and the Class II bicycle trail connection (from Monroe Street to Jefferson Street) shown on Avenue 62 in the General Plan.

Table 6
Daily Traffic Projections and V/C Ratios
Upon GP Buildout With Jefferson Street Realignment[a]
(Roadway Network Alternative 3)

Roadway Segment	Classification (Lane Configuration)	Volume (VPD)	Capacity (VPD)	Daily V/C Ratio
Avenue 58				
- West of Madison Street	Secondary (4U)	11,570	28,000	0.41
Jefferson Street				
- South of Avenue 58	Collector (2U)	6,110	14,000	0.44
Madison Street				
- South of Avenue 60	Secondary (4U)	17,400	28,000	0.62
Avenue 62				
- West of the Levee	Collector (2U)	3,990	14,000	0.29
- West of Monroe Street	Collector (2U)	4,820	14,000	0.34

a. Assumes buildout of the land uses in the study area per the existing General Plan Land Use Element with Roadway Network Alternative 3.

Avenue 58 and Madison Street would retain their secondary highway classifications with Roadway Network Alternative 4. The projected daily traffic volumes with this roadway network are shown in Figure 12. As shown therein, Madison Street would serve 21,130 vehicles per day with this roadway network and operate at LOS C on a daily basis. Table 7 shows that with no levee crossing by Avenue 62, the roadways in the study area would carry traffic volumes comprising between 6 and 75 percent of their daily capacity.

Table 7
Daily Traffic Projections and V/C Ratios Upon GP Buildout
With Jefferson Street Realignment and No Levee Crossing At Avenue 62[a]
(Roadway Network Alternative 4)

Roadway Segment	Classification (Lane Configuration)	Volume (VPD)	Capacity (VPD)	Daily V/C Ratio
Avenue 58				
- West of Madison Street	Secondary (4U)	11,840	28,000	0.42
Jefferson Street				
- South of Avenue 58	Collector (2U)	6,380	14,000	0.46
Madison Street				
- South of Avenue 60	Secondary (4U)	21,130	28,000	0.75
Avenue 62				
- West of Monroe Street	Collector (2U)	830	14,000	0.06

a. Assumes buildout of the land uses in the study area per the existing General Plan Land Use Element with Roadway Network Alternative 4.

5.0 EFFECT OF TRAVERTINE DEVELOPMENT YIELD ON ROADWAY CLASSIFICATIONS

Following the determination of the street classifications necessary to serve the study area with the maximum yield permitted under the approved Travertine Specific Plan, three lower development yield scenarios were evaluated. The purpose of this analysis was to determine if a lower yield would alter the Circulation Element roadway classifications required to adequately accommodate the future travel demands generated by development in the study area.

5.1 Travertine Development Yields Evaluated

Development Plan 1 (Maximum Under Approved Specific Plan)

The Travertine Specific Plan was approved with 2,300 dwelling units, a 27.2-acre 500-room hotel, two golf courses, and 10 acres (100,000 square feet) of commercial uses. The maximum yield permitted under the approved Travertine Specific Plan was assumed as Development Plan 1 and evaluated with each of the four roadway network alternatives to determine the future daily traffic projections and daily volume-to-capacity ratios (previously shown in Figure 9 through Figure 12). Tables 4-7 above also reflect buildout of the Travertine Specific Plan site with a yield equal to the maximum allowed under the approved Travertine Specific Plan. Development Plan 1 was assumed to represent the base condition, to facilitate the comparison of each of the other development yield scenarios.

Development Plan 2 (2,000 Dwelling Units)

Development Plan 2 assumed the ultimate yield would be 300 dwelling units below the maximum under the approved Travertine Specific Plan (2,000 residential dwelling units).

Development Plan 3 (2,000 Dwelling Units, No Commercial)

Development Plan 3 assumes the ultimate development yield on the Travertine site would include 300 fewer dwelling units than the maximum under the approved Travertine Specific Plan and also that the approved 10-acre commercial land use would never be constructed.

Development Plan 4 (Trip Generation of 13,120 Vehicle-Trips Daily)

Development Plan 4 would include residential land uses, golf courses and a hotel which would generate a total of approximately 13,120 vehicle-trips daily, as shown in Table 8. This represents 87 percent of the travel demand associated with Development Plan 3 or 52.78 percent of the daily trip generation associated with the approved Travertine Specific Plan.

5.2 Trip Generation Versus Travertine Development Yield

Table 8 summarizes the trip generation associated with development of the Travertine Specific Plan site with each of the four development yield scenarios. The approved Travertine Specific Plan (which was previously evaluated in the approved 1994 traffic study) would generate an estimated 24,860 vehicle-trips daily, as shown in Table 8.

Development Plan 2 would generate an estimated 19,430 vehicle-trips daily (5,430 daily trips fewer than Development Plan 1). Development Plan 2 represents a 22 percent reduction in daily trip generation of the Travertine site, compared to Development Plan 1 (the maximum yield permitted with the approved Specific Plan). The reduction in trip

generation would result from both the 300 fewer dwelling units and a shift in housing type from single-family detached residential to multi-family attached residential uses.

Table 8
Travertine Specific Plan External Traffic Generation[a]
Forecast By Development Yield Alternative

Development Plan (ITE Land Use Code)	Land Use Quantity[b]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily 2-Way
Current Specific Plan								
Residential SFD (210)	1526 DU	269	808	1,077	785	461	1,246	12,760
Residential MFA (230)	774 DU	45	220	265	216	106	322	3,650
Hotel (310)	500 Rooms	183	117	300	156	139	295	4,100
Commercial/Retail (820)[c]	100 TSF	61	39	100	193	209	402	4,350
Subtotal		558	1,184	1,742	1,350	915	2,265	24,860
Development Plan 2								
Residential SFD (210)	500 DU	90	270	360	287	169	456	4,570
Residential MFA (230)	1500 DU	77	374	451	371	183	554	6,410
Hotel (310)	500 Rooms	183	117	300	156	139	295	4,100
Commercial/Retail (820)[c]	100 TSF	61	39	100	193	209	402	4,700
Subtotal		411	800	1,211	1,007	700	1,707	19,430
Development Plan 3								
Residential SFD(210)	500 DU	90	270	360	287	169	456	4,570
Residential MFA (230)	1500 DU	77	374	451	371	183	554	6,410
Hotel (310)	500 Room	183	117	300	156	139	295	4,100
Subtotal		350	761	1,111	814	491	1,305	15,080
Development Plan 4								
52.78% of Approved Specific Plan	Variable	294	625	919	712	483	1,195	13,120

a. Based upon the regression equations for ITE Land Use Code 210 (Single-Family Detached Residential), Land Use Code 230 (Multi-Family Attached Residential), Land Use Code 310 (Hotel), and Land Use Code 820 (Shopping Center) published by the ITE in *Trip Generation* (7th Edition; December, 2003).
b. DU=dwelling units; TSF=thousand square feet.
c. The commercial trip generation forecast shown includes only external trips and incorporates a 36 percent reduction from the unadjusted values to eliminate the double counting of internal trips and more accurately reflect internal trip interactions and pass-by trips.

Development scenario three would generate approximately 15,080 vehicle-trips per day, which represents a 39 percent reduction in daily trip generation compared to the approved Travertine Specific Plan. The reduction in trip generation would result from a shift from single-family detached to multi-family attached residential uses as well as the reduction in residential yield and the elimination of the commercial site trip generation.

The trip generation associated with Development Plan 4 was determined as the level of development on the Travertine Specific Plan site that would generate a daily traffic volume on Madison Street (south of Avenue 60) equal to 80 percent of the capacity of a two-lane collector street with Roadway Network Alternative 4 (no levee crossing at Avenue 62).

Since the reduction in trip generation could be achieved in a variety of ways by changing the land use quantities on-site, no specific number of single-family or multiple-family residential dwelling units was assumed for this development yield alternative.

5.3 Traffic Projections By Travertine Specific Plan Yield and Roadway Network Alternative

To determine the street system that would be necessary to support different ultimate yields or levels of development in the Travertine Specific Plan area, the trip generation associated with four different development yield scenarios was estimated. Future traffic projections were then developed reflecting buildout of the study area and citywide General Plan buildout with each roadway network alternative and each Travertine development scenario.

Table 9 provides the post-2020 daily traffic projections for the roadways serving the study area with each roadway network alternative and each development plan for the Travertine site. The future traffic volume projections shown in Table 9 for Development Plan 1 (with each roadway network alternative) were previously shown in Figure 9-12 and in Tables 5-7. The future traffic volume projections shown in Table 9 for Travertine Development Plans 2, 3, and 4 reflect lower development yields that could result once the Travertine site is ultimately developed. Table 9 allows the changes in future traffic volumes resulting from the various roadway network alternatives to be more readily compared. It also shows more clearly the effect of changes in the development yield within the Travertine Specific Plan on the future traffic volumes throughout the study area.

The primary effect of reducing the trip generation associated with the Travertine Specific Plan would be a reduction in the future traffic volumes on Madison Street, because the traffic assigned to Madison Street was primarily associated with the Travertine Specific Plan. If Avenue 62 does not cross the levee, then the traffic from the Travertine Specific Plan that might otherwise utilize Avenue 62 for access would divert to Madison Street.

If Avenue 62 is not connected to Jefferson Street, none of the traffic associated with the Green Specific Plan (260 ADT) would pass through the Travertine site on Jefferson Street to reach Avenue 62. Instead, the projected traffic volume on Avenue 58 would increase by 260 ADT, following the reassignment of these trips. This reassignment would also occur with Roadway Network Alternative 2, since the elimination of a public roadway connection (via Jefferson Street) across the Travertine site would force the 260 vehicles per day associated with the Green Specific Plan (that would have utilized Jefferson Street to travel south and then east) to use Avenue 58 for access.

The development of 2,000 residential dwelling units without the approved 10-acre Travertine commercial site would reduce the future Travertine Specific Plan traffic generation to 15,080 daily trips (a reduction of 9,780 vehicle-trips per day). With this level of development, the future traffic volumes projected for Madison Street (south of Avenue 60) are expected to drop to 9,180 vehicles per day. With Development Plan 4, the projected traffic volume on Madison Street is expected to drop to 11,150 vehicles per day.

5.4 Future Daily V/C Ratios and Classification By Travertine Yield and Roadway Network Alternative

Table 10 provides a summary of the daily volume-to-capacity ratios upon buildout of the study area with each roadway network alternative and development plan evaluated for the Travertine site. Each master planned roadway shown in Table 10, was sized to match the projected traffic demand with each roadway network alternative (except Alternative 1 for which the capacity of the roadways was pre-determined from their secondary arterial classifications in the current General Plan).

Table 9
Post-2020 Daily Traffic Projections
By Roadway Network Alternative and Development Plan

Roadway Network and Development Plan Alternative	Avenue 58 West of Madison St.	Jefferson Street South of Avenue 58	Madison Street South of Avenue 60	Avenue 62 West of The Levee	Avenue 62 West of Monroe St.
Network Alt. 1					
-Develop. Plan 1	11,570	6,110	17,400	3,990	4,820
-Develop. Plan 2	10,760	5,300	13,600	3,180	4,010
-Develop. Plan 3	10,110	4,650	10,560	2,530	3,360
-Develop. Plan 4	9,810	4,350	9,180	2,230	3,060
Network Alt. 2					
-Develop. Plan 1	11,840	6,380	17,400	3,730	4,560
-Develop. Plan 2	11,020	5,560	13,600	2,910	3,740
-Develop. Plan 3	10,370	4,910	10,560	2,260	3,090
-Develop. Plan 4	10,080	4,620	9,180	1,970	2,800
Network Alt. 3					
-Develop. Plan 1	11,570	6,110	17,400	3,990	4,820
-Develop. Plan 2	10,760	5,300	13,600	3,180	4,010
-Develop. Plan 3	10,110	4,650	10,560	2,530	3,360
-Develop. Plan 4	9,810	4,350	9,180	2,230	3,060
Network Alt. 4					
-Develop. Plan 1	11,840	6,380	21,130	–	830
-Develop. Plan 2	11,020	5,560	16,520	–	830
-Develop. Plan 3	10,370	4,910	12,820	–	830
-Develop. Plan 4	10,080	4,620	11,150	–	830

Jefferson Street and Avenue 62 are oversized and should be downgraded to collector streets. If both Avenue 62 and Jefferson Street were re-classified as two-lane collector streets, they would have adequate capacity to serve the buildout traffic projections in the study area. As a collector street, Jefferson Street (south of Avenue 58) would have adequate capacity with all four roadway network alternatives.

The projected traffic volumes on Avenue 58 (west of Madison Street) are expected to just exceed 80 percent of the capacity of a collector street. Therefore, to accommodate full development of all land uses in approved Specific Plans and the Land Use Element of the General Plan, Avenue 58 may need to retain its secondary arterial classification, as shown in Figure 9,10,11, and 12.

Table 10
Post-2020 Daily V/C Ratios, and Facility Classifications[a]
By Roadway Network Alternative and Development Plan

Roadway Network Alternative and Development Plan	Avenue 58 West of Madison St.	Jefferson Street South of Avenue 58	Madison Street South of Avenue 60	Avenue 62 West of The Levee	Avenue 62 West of Monroe St.
Network Alt. 1					
-Develop. Plan 1	0.41-S	0.22-S	0.62-S	0.14-S	0.17-S
-Develop. Plan 2	0.38-S	0.19-S	0.49-S	0.11-S	0.14-S
-Develop. Plan 3	0.36-S	0.17-S	0.38-S	0.09-S	0.12-S
-Develop. Plan 4	0.35-S	0.16-S	0.33-S	0.08-S	0.11-S
Network Alt. 2					
-Develop. Plan 1	0.42-S	0.46-C	0.62-S	0.27-C	0.33-C
-Develop. Plan 2	0.79-C	0.40-C	0.49-S	0.21-C	0.27-C
-Develop. Plan 3	0.74-C	0.35-C	0.75-C	0.16-C	0.22-C
-Develop. Plan 4	0.72-C	0.33-C	0.66-C	0.14-C	0.20-C
Network Alt. 3					
-Develop. Plan 1	0.41-S	0.44-C	0.62-S	0.29-C	0.34-C
-Develop. Plan 2	0.77-C	0.38-C	0.49-S	0.23-C	0.29-C
-Develop. Plan 3	0.72-C	0.33-C	0.75-C	0.18-C	0.24-C
-Develop. Plan 4	0.70-C	0.31-C	0.66-C	0.16-C	0.22-C
Network Alt. 4					
-Develop. Plan 1	0.42-S	0.46-C	0.75-S	NA	0.06-C
-Develop. Plan 2	0.79-C	0.40-C	0.59-S	NA	0.06-C
-Develop. Plan 3	0.74-C	0.35-C	0.46-S	NA	0.06-C
-Develop. Plan 4	0.72-C	0.33-C	0.80-C	NA	0.06-C

a. Format is: Daily Volume-to-Capacity Ratio followed by the roadway classification assumed to determine the V/C Ratio. An "S" indicates that a secondary arterial capacity of 28,000 vehicles per day was assumed to determine the daily V/C ratio. A "C" indicates that a collector street capacity of 14,000 vehicles per day was assumed to determine the daily V/C ratio.

Avenue 62 is projected carry future traffic volumes of less than 5,000 vehicles per day and have more than adequate capacity as a two-lane collector street with all roadway network alternatives. Roadway Network Alternative 4 (which would close Avenue 62 to through traffic at the levee) would increase traffic volumes on Madison Street by approximately 3,730 vehicles per day, compared to Roadway Network Alternative 3. However, the increase in traffic on Madison Street would not alter the roadway classification for Madison Street from the current secondary highway designation.

To develop Table 10, the trip generation assumed for the developable land within the study area, but outside of the Travertine Specific Plan reflected full buildout of the approved land uses in the General Plan. The master planned roadways in Table 10, were sized to match the projected traffic volumes for all development plan scenarios and each roadway network alternative (except Roadway Network Alternative 1). With Roadway Network Alternative 1, all of the master planned roadways evaluated were assumed to be secondary arterials, per the existing General Plan Circulation Element.

Development Plan 1 (Approved Specific Plan)

Full development of the approved Travertine Specific Plan (Development Plan 1) was evaluated with each of the roadway network alternatives, as discussed above. As shown in Table 10, with an ultimate yield at the maximum level permitted under the approved Travertine Specific Plan, Avenue 58 and Madison Street should retain their current secondary arterial classification (with all four roadway network alternatives). However, Jefferson Street and Avenue 62 would provide adequate capacity as collector streets to accommodate buildout of Development Plan 1. Even without Avenue 62 extended across the levee to Madison Street (Roadway Network Alternative 4), all of the roadways evaluated would have sufficient capacity on a daily basis with Jefferson Street and Avenue 62 downgraded to collector streets.

Development Plan 2 (2000 Dwelling Units)

The lower trip generation associated with Development Plan 2 would reduce the projected traffic volumes on Avenue 58, Jefferson Street, and Avenue 62 to levels within the capacity of two-lane collector streets. However, with Development Plan 2, Madison Street would need to retain its secondary arterial classification with all four roadway network alternatives.

Development Plan 3 (2000 Dwelling Units Without Commercial Area)

The reduced trip generation from the Travertine site with Development Plan 3 would reduce the projected traffic volumes on all access roadways to less than 80 percent of the capacity of collector streets with Roadway Network Alternatives 2 and 3. This would not be the case, however, with Roadway Network Alternative 4 (i.e., without the levee crossing at Avenue 60). With Development Plan 3 and Roadway Network Alternative 4, Madison Street (south of Avenue 60) would retain its current secondary arterial classification.

Development Plan 4 (Trip Generation of 13,120 Vehicle-Trips Daily)

Development Plan 4 would generate 52.78 percent of the daily trip generation associated with the approved Travertine Specific Plan (or 13 percent fewer daily trips than Development Plan 3). The trip generation associated with Development Plan 4 would reduce the projected traffic volumes on all of the roadways evaluated to 80 percent or less of the capacity of a collector street with all of the roadway network alternatives analyzed. With Development Plan 4, Madison Street could be constructed as a two-lane collector street south of Avenue 60.

6.0 FINDINGS AND CONCLUSIONS

1. The La Quinta Traffic Model (LQTM) included the currently approved General Plan and Specific Plan land uses in the study area and no further development activity is expected to take place in the study area that would exceed that in the adopted General Plan and Specific Plans.

2. The current General Plan Circulation Element roadway network planned to serve the study area would provide substantially more capacity than necessary to accommodate the level of building activity expected in the study area.

3. It is in the public interest to build no more roadway infrastructure than necessary to serve the future development in the study area upon General Plan buildout, particularly since the study area occupies a corner of an urban area where there is essentially no probability of development, roadways, or other infrastructure being extended in the future.

4. The connection of Avenue 62, between Madison Street and Monroe Street, is not projected to carry a significant traffic volume (fewer than 5,000 vehicles per day) upon General Plan buildout.

5. Consideration should be given to downgrading Avenue 62 to a collector street and terminating it east of the levee. The lack of sufficient right-of-way dedications and the cost of extending even a two-lane roadway over the dike does not appear to be warranted by the low projected traffic flows.

6. The City of La Quinta may determine that an elevated crossing of the dike at Avenue 62 is justified as a two-lane roadway to achieve community goals and objectives such as: (1) minimizing emergency response times, (2) providing an additional evacuation route across the levee in the event of flooding, fire or other disaster, (3) assuring system continuity for the City's master planned Class II bikeway and multi-purpose trail system. It may be feasible for Avenue 62 to satisfy the public safety needs of the future development in the study area by functioning as a limited access for emergency vehicles only.

7. Upon full buildout of the General Plan land uses in the study area, all segments of the roadway system would continue to function at less than 75 percent of their capacity without the levee crossing at Avenue 62 (as shown in Table 10 for Roadway Network Alternative 4).

8. No unnecessary pavement should be constructed on Jefferson Street, Madison Street, or Avenue 62. In particular, Avenue 62 should be downgraded from its current secondary classification and constructed to the lowest standards feasible. Avenue 62 could accommodate future traffic volumes as an at-grade cul-de-sac roadway or as a cul-de-sac roadway constructed to a width and profile to permit emergency access only over the levee.

9. Jefferson Street may be downgraded from its current secondary classification to a collector street classification, provided the one-mile long segment of Madison Street, between Jefferson Street and Avenue 60, is constructed as a four-lane secondary highway (with Development Plans 1 or 2 and Roadway Network Alternative 2, 3, or 4). Jefferson Street may be downgraded and constructed as a collector street (with Development Plan 4 and Roadway Network Alternative 2, 3 or 4 or with Development Plan 3 and Roadway Network Alternative 2 or 3).

10. Provided the Travertine Specific Plan generates no more than 16,000 vehicle-trips per day, Madison Street may be downgraded to a two-lane collector street classification (from Avenue 60 to Avenue 62) if Avenue 62 is constructed across the levee as a two-lane collector (per Roadway Network Alternative 2 or 3).

11. Madison Street could be downgraded to a collector street classification (between Avenue 60 and Jefferson Street) and Avenue 62 could terminate in a cul-de-sac east of

the levee, provided the Travertine Specific Plan were to generate no more than 13,120 vehicle trips per day. This trip generation constitutes 52.78 percent of the external trips generated by the approved Travertine Specific Plan.

12. Madison Street should retain its secondary highway classification (from Avenue 60 south to Jefferson Street) if Roadway Network Alternative 2, 3, or 4 is adopted and The Travertine Specific Plan yield is ultimately the maximum permitted by the existing entitlements (Development Plan 1) or 300 fewer residential dwelling units than permitted under the existing entitlements (Development Plan 2). Madison Street should retain its secondary highway classification (from Avenue 60 south to Jefferson Street) if Roadway Network Alternative 4 is adopted and The Travertine Specific Plan yield is 2000 dwellings without the 10-acre commercial area (Development Plan 3).

6.1 Future Mobility and Accessibility

Roadway Network Alternative 1 would provide the greatest mobility, since none of the master planned roadways in the study area would accommodate daily traffic volumes exceeding 62 percent of the daily capacity of a secondary highway. However, this roadway network would be the most expensive to construct and maintain and the oversized roadways would generate the most substantial impacts on the environment, adjacent future residents, and the unique character of the study area.

Collector streets have a capacity of 14,000 vehicles per day, whereas secondary arterials have a capacity of 28,000 vehicles per day. Both Avenue 62 and Jefferson Street are projected to carry future traffic volumes which are less than 6,400 vehicles per day. Therefore, Jefferson Street and Avenue 62 could both be downgraded to collector streets in the study area and still function well as part of an efficient and effective street network which provides adequate levels of mobility and accessibility for the community.

Both Jefferson Street and Avenue 62 could accommodate the projected future traffic volumes and meet the City of La Quinta's minimum performance standard as collector streets regardless of the development yields realized on the Travertine site. Based on the magnitude of the future traffic projections, it does not appear to be necessary to retain the current secondary highway classification of Jefferson Street (from Avenue 58 to Madison Street) or Avenue 62 (from Monroe Street to Madison Street).

The study area may be subject to flooding during heavy rains. Improvements such as new crossings of the dike may be desirable to assure accessibility in the event of earthquake, fire, or flooding. Madison Street, south of Avenue 60 would provide an additional evacuation route for the study area in the event of emergency. Even Roadway Network Alternative 2, which would delete Jefferson Street from the Circulation Element within the Travertine Specific Plan, would provide a two-lane private roadway across the Travertine site which could be utilized as an additional evacuation route in the event of a natural or man-made emergency.

Roadway Network Alternative 4 would eliminate one of the three crossings of the dike that could be used by residents and visitors as emergency evacuation routes. The two remaining crossings of the levee (at Madison Street south of Avenue 60 and at Jefferson Street south of Avenue 58) would assure that a secondary emergency access route would be available for residents and visitors in the study area if the primary access is temporarily blocked for any reason.

The ultimately approved location of the new fire station being planned within one-quarter mile of the intersection of Monroe Street and Avenue 60 will determine whether or not Roadway Network Alternative 4 would increase the response time of emergency vehicles

enroute to/from the study area. If the fire station is ultimately located one-quarter mile south of Avenue 60, then emergency vehicles will need to travel one-half mile further to reach the study area with Roadway Network Alternative 4 than the other roadway network alternatives. If Avenue 62 is not constructed across the dike, then emergency response teams will need to travel one-quarter mile north on Monroe Street, turn west on Avenue 60, and continue west to Madison Street. To access the southern half of the study area, the emergency vehicles will be required to back track one-quarter mile on southbound Madison Street with Roadway Network Alternative 4. Consequently, if Avenue 62 is ultimately improved as an at-grade roadway which does not cross the dike, it could increase the emergency vehicle response time to the southern half of the study area.

6.2 Alternative Transportation Modes

Multimodal planning is a critical aspect of safety planning because safety is increased when the exposure of pedestrians and bicyclists to roadways and traffic congestion is minimized. All of the roadway network alternatives should be designed to encourage walking, bicycling and other alternatives to automobile travel. Pedestrian and bicycle networks should be developed which link activity centers to facilitate recreational walking and biking. The optimal roadway network alternative should separate pedestrian and roadway crossings to reduce exposure, reduce the speed of motor vehicles and limit through traffic.

By downgrading secondary arterials to collector streets, the City would be adopting a lower design speed as well as a reduced right-of-way. Consequently Roadway Network Alternatives 2, 3, and 4 would reduce the speed of motor vehicles on the downgraded roadways, compared to the adopted Circulation Element. The deletion of Jefferson Street with Roadway Network Alternatives 2 would reduce through traffic in the study area. By eliminating the levee crossing at Avenue 62, Roadway Network Alternative 4 would require a modification to the master planned bikeways and multipurpose trails currently shown in the Circulation Element along Avenue 62.

6.3 Consistency With Community Goals and Objectives

Roadway Network Alternative 1 would maximize the mobility of people and goods by providing adequate capacity to accommodate future travel demands and minimizing travel time. This network would not provide a street system which devotes a minimum amount of space to streets. Since reducing pavement area reduces construction and maintenance costs, this roadway network would have the highest cost. The higher design speed would not minimize noise levels. This network would not discourage regional through traffic or truck traffic in residential areas. This network would not minimize impacts on visual or sensitive biological resources. This network would not minimize impacts on the existing development in the community, since the construction of Avenue 62 over the dike would impact the recently constructed maintenance facilities.

Roadway Network Alternative 2 would facilitate the mobility of people and goods by providing adequate capacity to accommodate future travel demands. This network would provide a street system which devotes a minimum amount of space to streets. Since reducing pavement area reduces construction and maintenance costs, this roadway network would be cost effective. The lower design speed would minimize noise levels. This network would eliminate regional through traffic and truck traffic in residential areas. This network would minimize impacts on visual and sensitive biological resources. This network would have impacts on the existing development in the community, since Avenue 62 would be constructed over the dike and therefore could impact the recently constructed maintenance facilities.

Roadway Network Alternative 3 would facilitate the mobility of people and goods by providing adequate capacity to accommodate future travel demands. This network would provide a street system which devotes a minimum amount of space to streets. Since reducing pavement area reduces construction and maintenance costs, this roadway network would be more cost effective than the adopted roadway network plan. The lower design speed would reduce noise levels. This network would eliminate regional through traffic and truck traffic in residential areas. This network would minimize impacts on visual and sensitive biological resources. This network would have impacts on the existing development in the community, since Avenue 62 would be constructed over the dike and therefore could impact the recently constructed maintenance facilities.

Roadway Network Alternative 4 would facilitate the mobility of people and goods by providing adequate capacity to accommodate future travel demands. This network would provide a street system which devotes a minimum amount of space to streets. Since reducing pavement area reduces construction and maintenance costs, this roadway network would be cost effective. The lower design speed would minimize noise levels. This network would discourage regional through traffic and truck traffic in residential areas. This network would minimize impacts on visual and sensitive biological resources. This network would minimize impacts on the existing development in the community, since Avenue 62 would not be constructed over the dike and therefore would not impact the recently constructed maintenance facilities.

7.0 SUMMARY

The *La Quinta General Plan Update Traffic Study* evaluated the Circulation Element roadway network in the vicinity of the Travertine Specific Plan assuming that a single four-lane secondary arterial loop (comprised of Avenue 58, Jefferson Street, and Avenue 62) would provide access in the future. Based upon the total trip generation from buildout of the Travertine Specific Plan and surrounding development, Jefferson Street and Avenue 62 were appropriately sized as secondary highways. After the *La Quinta General Plan Update Traffic Study* was completed, Madison Street was added as a secondary highway, between Avenue 60 and Jefferson Street. Given the additional capacity provided by Madison Street, both Jefferson Street and Avenue 62 should have been downgraded to collector streets at that time.

The future travel demand on Avenue 62 is projected to remain relatively low, even for a collector street. Upon area-wide buildout, the traffic volume on Avenue 62 is projected to remain below 4,000 vehicles per day (west of the levee) which is less than 30 percent of the capacity of a collector street. If Avenue 62 were closed to through traffic at the levee, the 4,000 vehicles per day could divert to Madison Street without exceeding its master planned secondary highway capacity (even upon buildout of the approved Travertine Specific Plan).

With full development of the approved land uses in the study area, the traffic volume on Madison Street is projected to be 17,400 vehicles per day. A volume of this magnitude would be sufficient to warrant a four-lane secondary street cross-section. However, if the Travertine Specific Plan site is ultimately developed at a lower intensity than that in the approved Specific Plan, it may be feasible to downgrade Madison Street to a collector street.

Provided Avenue 62 is extended over the levee as a two-lane street capable of carrying 4,000 ADT, Madison Street could be downgraded to a collector street if the Travertine Specific Plan trip generation ultimately remains below 16,000 daily trip-ends. Development Plan 3 is one example of a land use plan that would generate less than 16,000 daily trip-ends. If Avenue 62 is terminated at the levee and the 4,000 ADT diverts onto

Madison Street, the Travertine Specific Plan would need to generate fewer than 13,120 daily trip-ends in order for Madison Street to be downgraded to a collector street.

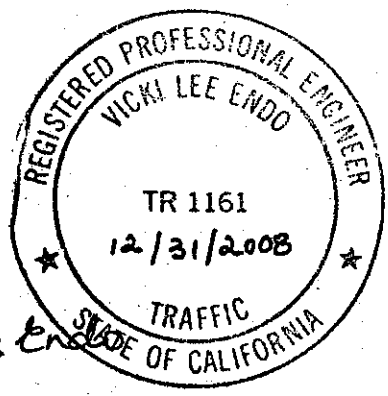
We trust that the information provided herein documents the relationship between the future land development and related circulation system needs in the vicinity of the Travertine Specific Plan sufficiently to enable the City of La Quinta to reclassify the master planned streets in the Circulation Element of the General Plan. If you have questions regarding the topics addressed or the assumptions herein, please do not hesitate to contact our offices at (949) 362-0020. I look forward to discussing the findings and conclusions of our analyses with you.

Sincerely,

ENDO ENGINEERING

Gregory Endo

Gregory Endo
Principal



Vicki Lee Endo

Vicki Lee Endo, P.E.
Registered Professional
Traffic Engineer TR 1161

cc Mr. Jim Hildenbrand, Hofmann Land Development Company
Mr. David Lennon, Hofmann Land Development Company

Attachment A
Circulation System Goals and Objectives

Circulation System Goals

1. Maximize the mobility of people and goods (by providing adequate capacity to accommodate future travel demands and minimizing travel time and travel cost).

2. Provide maximum public safety.

3. Provide adequate system reliability.

4. Minimize infrastructure construction and maintenance costs.

5. Minimize community disruption.

6. Enhance the urban environment (by fostering a desirable arrangement of land use and transportation facilities and minimizing air pollution and noise levels).

7. Minimize impacts on visual and sensitive biological resources.

8. Discourage regional through traffic and truck traffic in residential areas.

Operational Objectives

1. Provide adequate vehicular and pedestrian access to all parcels with a street arrangement which permits economical and practical patterns, shapes and sizes of development parcels.

2. Provide an efficient street pattern which minimizes excessive indirect vehicular travel and devotes a minimum amount of space to streets, since reducing pavement area reduces construction and maintenance costs.

3. Provide a street system which, by conforming to the local topography, minimizes cut and fill and therefore is more attractive, more economical, and less disruptive of the natural environment.

4. Provide a circulation system for the study area which will not detract from the efficiency of the peripheral major streets.

5. Since intersections increase the potential for accidents, provide a plan with a minimum number of intersections, especially along abutting major streets.

6. Provide a transportation plan which includes adequate accessibility for the approved major traffic generators as well as the future residential development to satisfy the needs of all users (visitors, delivery trucks, emergency vehicles, local residents, and businesses) without localized traffic congestion.

7. Provide a transportation plan which emphasizes safety by minimizing pedestrian-vehicle conflict points.

8. Adopt a transportation plan which will provide adequate evacuation routes to assure public safety in the event of a man-made or natural disaster (wild land fire, flooding, mud slides, earthquake, rock slide etc.).

9. Provide a plan that will assure adequate emergency vehicle access and response times to assure public safety.

10. Provide a plan which will preserve adequate right-of-way to accommodate future infrastructure needs.

11. Adopt a transportation plan which will make adequate provision for pedestrians, joggers, bicyclists, equestrians and golf carts and provide public access to the master planned system of bicycle and multi-purpose trails within and at the boundaries of the study area.

12. Adopt a transportation plan that is comprehensive and coordinated with the plans for the land adjacent to the borders of the study area.

Attachment B

Year 2006 24-Hour
Traffic Count Data

COUNTS UNLIMITED INC.
25424 JACLYN AVENUE
MORENO VALLEY CA. 92557
951-247-6716

LQ58WOMA
Site Code: 00978120
Date Start: 11-Apr-06
Date End: 11-Apr-06

CITY OF LA QUINTA
58TH AVENUE
W/O MADISON STREET
24 HR ENTERING VOLUME COUNT

Start Time	11-Apr-06 Tue	EASTBOUND Morning	EASTBOUND Afternoon	Hour Totals Morning	Hour Totals Afternoon	WESTBOUND Morning	WESTBOUND Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	9			1	16				
12:15		1	21			0	13				
12:30		1	24			1	20				
12:45		1	9	4	63	0	12	2	61	6	124
01:00		0	13			1	7				
01:15		0	14			0	20				
01:30		1	22			1	10				
01:45		2	18	3	67	0	12	2	49	5	116
02:00		0	7			0	13				
02:15		0	10			2	13				
02:30		0	22			0	12				
02:45		1	20	1	59	0	9	2	47	3	106
03:00		0	60			0	12				
03:15		0	14			0	11				
03:30		0	18			0	13				
03:45		1	14	1	106	1	7	1	43	2	149
04:00		0	14			0	6				
04:15		2	8			1	4				
04:30		0	11			2	8				
04:45		1	6	3	39	12	2	15	20	18	59
05:00		0	4			12	7				
05:15		1	2			11	5				
05:30		0	20			18	8				
05:45		2	6	3	32	7	2	48	22	51	54
06:00		1	3			6	4				
06:15		2	6			16	4				
06:30		2	3			13	2				
06:45		2	4	7	16	37	2	72	12	79	28
07:00		5	2			22	3				
07:15		2	4			19	2				
07:30		11	1			13	2				
07:45		6	2	24	9	16	2	70	9	94	18
08:00		3	0			21	6				
08:15		8	1			6	2				
08:30		8	2			12	2				
08:45		11	1	30	4	21	3	60	13	90	17
09:00		9	0			14	0				
09:15		13	1			27	3				
09:30		9	0			14	3				
09:45		5	2	36	3	14	2	69	8	105	11
10:00		5	2			4	0				
10:15		9	0			12	3				
10:30		13	0			15	0				
10:45		13	1	40	3	14	0	45	3	85	6
11:00		11	0			12	2				
11:15		9	1			15	0				
11:30		13	0			17	0				
11:45		12	1	45	2	18	1	62	3	107	5
Total		197	403	197	403	448	290	448	290	645	693
Combined Total		600		600		738		738		1338	
AM Peak		10:15				06:30					
Vol.		46				91					
P.H.F.		0.885				0.615					
PM Peak			02:30				12:00				
Vol.			116				61				
P.H.F.			0.483				0.763				
Percentage		32.8%	67.2%			60.7%	39.3%				
ADT/AADT		ADT 1,338		AADT 1,338							

COUNTS UNLIMITED INC.
25424 JACLYN AVENUE
MORENO VALLEY CA. 92557
951-247-6716

LQ62WOMO
Site Code: 0097875
Date Start: 11-Apr-06
Date End: 11-Apr-06

CITY OF LA QUINTA
62ND AVENUE
W/O MONROE
24 HR DIRECTIONAL VOLUME COUNT

Start Time	11-Apr-06 Tue	EASTBOUND Morning	EASTBOUND Afternoon	Hour Totals Morning	Hour Totals Afternoon	WESTBOUND Morning	WESTBOUND Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		0	7			0	8				
12:15		0	5			0	9				
12:30		0	7			0	10				
12:45		0	15	0	34	0	4	0	31	0	65
01:00		0	8			0	7				
01:15		0	3			0	7				
01:30		0	9			0	6				
01:45		0	5	0	25	0	9	0	29	0	54
02:00		0	5			0	12				
02:15		0	24			0	13				
02:30		0	35			0	7				
02:45		0	20	0	84	0	6	0	38	0	122
03:00		0	29			0	3				
03:15		0	16			0	4				
03:30		0	29			0	2				
03:45		0	16	0	90	0	2	0	11	0	101
04:00		0	6			0	3				
04:15		0	1			0	2				
04:30		0	2			0	3				
04:45		0	1	0	10	1	0	1	8	1	18
05:00		0	1			2	0				
05:15		0	1			3	2				
05:30		0	1			10	1				
05:45		1	0	1	3	17	0	32	3	33	6
06:00		1	1			16	0				
06:15		1	0			37	0				
06:30		8	0			38	0				
06:45		6	1	16	2	32	2	123	2	139	4
07:00		5	0			14	0				
07:15		7	1			18	0				
07:30		8	0			7	0				
07:45		1	0	21	1	8	0	47	0	68	1
08:00		2	1			8	1				
08:15		8	0			9	0				
08:30		6	0			4	0				
08:45		12	0	28	1	4	0	25	1	53	2
09:00		3	1			7	1				
09:15		3	0			7	0				
09:30		5	0			7	0				
09:45		10	0	21	1	6	0	27	1	48	2
10:00		8	0			7	0				
10:15		8	0			8	0				
10:30		4	0			4	0				
10:45		4	0	24	0	5	0	24	0	48	0
11:00		7	0			8	0				
11:15		12	0			5	0				
11:30		7	0			2	0				
11:45		6	0	32	0	15	0	30	0	62	0
Total		143	251	143	251	309	124	309	124	452	375
Combined Total		394		394		433		433		827	
AM Peak		11:00				06:00					
Vol.		32				123					
P.H.F.		0.667				0.809					
PM Peak			02:15				01:45				
Vol.			108				41				
P.H.F.			0.771				0.788				
Percentage		36.3%	63.7%			71.4%	28.6%				
ADT/AADT		ADT 827		AADT 827							