

## **APPENDIX G**

### **Museum Market Plaza Specific Plan Traffic Impact Study**

Prepared by

Endo Engineering  
28811 Woodcock Drive  
Laguna Niguel, CA 92677

September 2, 2008

### **NOTICE ON APPENDIX REDUCTION**

This technical appendix has been reduced by 50% and printed double-sided to conserve paper and to allow the technical appendices to be incorporated into the EIR. If you wish to have a full-sized copy of this appendix, please contact the City of Palm Springs Planning Department at 760-323-8245.



Endo Engineering   Traffic Engineering   Air Quality Studies   Noise Assessments

September 2, 2008

Mrs. Nicole Criste  
Terra Nova Planning & Research, Inc.  
400 South Farrell Drive, Suite 205  
Palm Springs, CA 92262

**SUBJECT: Palm Springs Museum Market Plaza Specific Plan  
Traffic Impact Study**

Dear Mrs. Criste;

Endo Engineering is pleased to submit this evaluation of the circulation impacts associated with the proposed Museum Market Plaza Specific Plan in downtown Palm Springs. The 20.59-acre project site is located south of Amado Road and north of Arenas Road, between Museum Drive and Indian Canyon Drive. The area within the Museum Market Plaza Specific Plan is currently occupied by: the Desert Fashion Plaza (288,400 S.F. of retail and 41,600 S.F. of restaurant uses), the Town & Country Center (15,000 S.F. restaurant, 33,600 S.F. retail and 2,350 S.F. offices), the Zeldaz Nightclub (7,120 S.F.), the Mercado Plaza parking lot, and the vacant 0.83-acre Palm Hotel site. The proposed project is designed to serve visitors and local residents alike by re-integrating the site into the Palm Springs downtown.

The format of this report is consistent with the requirements of the City of Palm Springs. The pages which follow summarize in graphic and narrative form: (1) year 2008 peak season conditions on a typical weekday, on a Thursday evening with Villagefest, and on a Saturday during the midday peak hour, (2) future year 2030 General Plan build out conditions with fifteen cumulative developments and the Preferred Project, the No-Project Alternative, the Preserve Town and Country Center Alternative, Less-Intense Alternative A and Less-Intense Alternative B; and (3) specific mitigation measures required to reduce any potentially significant impacts identified to acceptable levels.

I trust that the information provided herein will be of value to you, the project applicant, and the City of Palm Springs in reviewing of the impacts and conditions of approval associated with the proposed development. Should questions or comments arise regarding the findings and recommendations within this report, please do not hesitate to contact me by telephone, by facsimile, or by electronic mail (endoenr@cox.net).

Cordially,  
ENDO ENGINEERING  
*Vicki Lee Endo*  
Vicki Lee Endo, P.E., T.E.  
Registered Professional  
Traffic Engineer TR 1161



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

## MUSEUM MARKET PLAZA SPECIFIC PLAN

### TRAFFIC IMPACT STUDY

SOUTH OF AMADO ROAD AND NORTH OF ARENAS ROAD  
BETWEEN MUSEUM DRIVE AND INDIAN CANYON DRIVE

CITY OF PALM SPRINGS

SEPTEMBER 2, 2008

**Prepared For:**

Mrs. Nicole Criste  
Terra Nova Planning & Research, Inc.  
400 South Farrell Drive, Suite 205  
Palm Springs, CA 92262  
Phone: (760) 320-9040  
Facsimile: (760) 322-2760

**Prepared By:**

Endo Engineering  
28811 Woodcock Drive  
Laguna Niguel, CA 92677-1330  
Telephone: (949) 362-0020  
Facsimile: (949) 362-0015  
E-Mail: endoenr@cox.net

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## **1. EXECUTIVE SUMMARY**

### **1A. PROJECT LOCATION**

The project site is located in the Coachella Valley, nestled against the base of the San Jacinto Mountains. The 20.59-acre site is south of Interstate 10, in the heart of downtown Palm Springs. The project site is more precisely located south of Amado Road and north of Arenas Road, between Museum Drive and Indian Canyon Drive.

The area within the Museum Market Plaza Specific Plan includes: the Desert Fashion Plaza (288,400 S.F. of retail and 41,600 S.F. of restaurant uses), the Town & Country Center (15,000 S.F. restaurant, 33,600 S.F. retail and 2,350 S.F. offices), the Zeldaz Nightclub (7,120 S.F.), the Mercado Plaza surface parking lot, and the vacant 0.83-acre Palm Hotel site. Approximately 12 percent of the Desert Fashion Plaza is currently occupied.

### **1B. PROJECT DESCRIPTION**

The proposed project is the Museum Market Plaza Specific Plan. The proposed project is designed to serve visitors and local residents alike by re-integrating the site into the Palm Springs downtown and reducing the need for travel by automobile. The proposed project would provide a vibrant high-intensity mixed-use lifestyle center with living, shopping and entertainment venues in a central location. The project would include upscale boutique shops, galleries, neighborhood conveniences, restaurants, residential uses, and boutique hotels.

The core area is located north of Tahquitz Canyon Way and west of Palm Canyon Drive. Development within the core area would provide a combination of retail and professional office space (with up to 385,000 S.F.), multiple-family attached residences (900 dwellings units), and 565 hotel rooms. In addition, the formerly proposed Palm Hotel site could be developed with limited retail space (15,000 S.F.) and 55 hotel rooms or high-density residential dwelling units.

With the Preferred Project, Belardo Road would be abandoned and vacated from the northern site boundary to the northern driveway of the Palm Springs Art Museum. Belardo Road would be reconnected across the site to Tahquitz Canyon Way as a two-lane private street with on-street parking and a 62-foot right-of-way. A new private east/west boulevard (Museum Way) would be constructed to connect the Palm Springs Art Museum to Palm Canyon Drive and Indian Canyon Drive to enhance the pedestrian environment. In addition, a private east/west street would be constructed north of Museum Way, between Palm Canyon Drive and Belardo Road. Although the precise location of this roadway has not been determined, it would be south of Andreas Road, between Block A and Block B and is referred to herein as Street "A/B". The existing surface parking lot in Block J would be replaced by a three-level parking structure providing 500 parking spaces, 75 of which would be reserved for the Mercado Plaza.

A number of project alternatives have been addressed. The No-Project Alternative would refurbish the Desert Fashion Plaza in its current configuration and maintain the Town & Country Center and adjacent buildings as well as the surface parking lot at Mercado Plaza. With the No-Project Alternative, 45 hotel rooms would be constructed in Block L, as permitted by the *Palm Springs General Plan* and Zoning designations. Belardo Road would connect to Museum Drive along the existing alignment with the No-Project Alternative.

The Preserve Town & Country Center Alternative would rehabilitate the Town & Country Center (with the exception of the old Bank of America building on Palm Canyon Drive) and generally retain the existing development in Block K. The Preserve Town & Country Center Alternative is identical to the Preferred Project for the area west of Palm Canyon Drive. With this alternative, Museum Way would not extend between Palm Canyon Drive and Indian Canyon Drive.

Less-Intense Alternative A would reduce the building heights proposed and provide substantially less retail and office space, fewer high density residences, a cinema (with 68,000 S.F.), a supermarket, and a park in the center of the core area. Like the Preserve Town & Country Center Alternative, Less-Intense Alternative A would include the rehabilitation of the Town & Country Center. A total of 1,000 parking spaces would be provided throughout the project and Block L would be developed as a parking structure. The internal circulation elements proposed with Less-Intense Alternative A would differ from those associated with the other conceptual alternatives to accommodate the central park. The east/west boulevard would be aligned further to the north, along Andreas Road.

Less-Intense Alternative B represents a less intense version of the Preferred Alternative. This alternative would include fewer than one-half the hotel rooms of the Preferred Alternative. In addition, the number of residential units proposed would be reduced, as would the office uses. The internal circulation elements would be similar to those with the Preferred Project.

The proposed project would maintain a minimum of three lanes on Palm Canyon Drive, and would provide angled parking on the west side of this roadway, but maintain the existing parallel parking on the east side of this roadway. Since Palm Canyon Drive currently has approximately 50 feet of pavement (curb-to-curb) with three lanes and parallel parking on each side of the roadway, widening to provide 63 feet of pavement (curb-to-curb) is proposed to replace the existing parallel parking on the west side of the roadway with angled parking. Indian Canyon Drive would retain four through travel lanes, with parallel parking on the east side. If the west side of Indian Canyon is modified to have angled parking, Indian Canyon Drive would need to be widened to avoid the encroachment of vehicles backing out of these angled parking spaces into the through travel lanes.

### **1C. PROJECT STUDY AREA**

The study area and key intersections were identified, following coordination with the City of Palm Springs, based upon the City of Palm Springs significance threshold of 50 project-related peak hour trips. The key intersections are shown in Figure 2-2 and include:

1. Indian Canyon Drive at Amado Road;
2. Indian Canyon Drive at Andreas Road;
3. Indian Canyon Drive at Tahquitz Canyon Way;
4. Indian Canyon Drive at Arenas Road;
5. Palm Canyon Drive at Amado Road;
6. Palm Canyon Drive at Tahquitz Canyon Way;
7. Palm Canyon Drive at Arenas Road;
8. Belardo Road at Amado Road;
9. Belardo Road at Tahquitz Canyon Way;
10. Belardo Road at Arenas Road;
11. Cahuilla Road at Tahquitz Canyon Way;
12. Cahuilla Road at Arenas Road; and
13. Museum Drive at Tahquitz Canyon Way.

Although the No-Project Alternative would include no internal roadway intersections that require analysis, the Preferred Project would include an analysis of the following on-site intersections: Belardo Road with Museum Way (Intersection 14), Palm Canyon Drive with Museum Way (Intersection 15), and Indian Canyon Drive with Museum Way (Intersection 16). The Preserve Town & Country Center Alternative would include an analysis of the on-site intersection of Belardo Road with Museum Way (Intersection 14).

Less-Intense Alternative A would include an analysis of the following on-site intersections: Belardo Road with Museum Way (Intersection 14), Palm Canyon Drive with Andreas Road (Intersection 17), and Belardo Road with Andreas Road (Intersection 18). Less-Intense Alternative A would include an analysis of the following on-site intersections: Belardo Road with Museum Way (Intersection 14), Palm Canyon Drive with Museum Way (Intersection 15), and Indian Canyon Drive with Museum Way (Intersection 16).

#### **ID. EXISTING TRAFFIC CONDITIONS**

The latest update (HCM 2000) to the *Highway Capacity Manual* (TRB Special Report 209) includes intersection operational methodologies which are the basis for determining intersection delay and levels of service (LOS) herein. The City of Palm Springs considers Level of Service D or better operation acceptable during the peak hours in the peak season.

Although a single overall intersection delay and LOS are not defined in the HCM 2000 for intersections with two-way stop control (TWSC), current peak hour levels of delay at the key intersections with TWSC correspond to LOS B or better operation, which is considered acceptable by the City of Palm Springs. None of the unsignalized key intersections currently meet peak hour traffic signal volume warrants.

Only one key intersection, Belardo Road at Arenas Road, is currently operating with all-way stop control (AWSC), and is currently operating at level of service A in the typical weekday peak hours and during Villagefest in the peak season. The intersection of Belardo Road and Arenas Road does not currently meet signal warrants.

#### **IE. TRAFFIC IMPACTS**

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

1. The trip generation associated with the existing land uses on-site currently includes approximately 6,700 external trip-ends on a typical weekday and 9,320 external trip-ends on a Saturday in the peak season which are currently using the surrounding street system in the study area for access.
2. The trip generation associated with the No-Project Alternative would include approximately 17,850 external trip-ends on a typical weekday, and 23,750 external trip-ends on a typical Saturday in the peak season.
3. The external trip generation associated with the Preferred Project would be approximately 2,750 trip-ends greater on a typical weekday and 630 trip-ends greater on a typical Saturday in the peak season than that of the No-Project Alternative.
4. The external trip generation associated with the Preserve Town & Country Center Alternative would be approximately 3,480 trip-ends greater on a typical weekday and 2,300 trip-ends greater on a typical Saturday in the peak season than that of the No-Project Alternative.

5. The external trip generation associated with Less-Intense Alternative A would be approximately 1,310 trip-ends fewer on a typical weekday and 2,280 trip-ends fewer on a typical Saturday in the peak season than that of the No-Project Alternative.
6. The external trip generation associated with Less-Intense Alternative B would be approximately 760 trip-ends fewer on a typical weekday and 1,910 trip-ends fewer on a typical Saturday in the peak season than that of the No-Project Alternative.
7. In the peak season of the year 2030 with all site development alternatives, all of the key intersections are projected to meet the City of Palm Springs minimum performance standard of LOS D in the midday and evening peak hours on typical weekdays without off-site mitigation. The levels of delay at the intersections evaluated with two-way stop control would be within the range considered acceptable by the City of Palm Springs on weekdays in the year 2030.
8. In the peak season of the year 2030 with all site development alternatives, all of the key intersections are projected to meet the City of Palm Springs minimum performance standard of LOS D in the midday peak hour on Saturdays without mitigation, except the intersection of Belardo Road and Tahquitz Canyon Way (only with the Preserve Town & Country Center Alternative). The levels of delay at this intersection with two-way stop control would be within the range considered acceptable by the City of Palm Springs on Saturdays in the year 2030, if a dedicated westbound right-turn lane were provided on Tahquitz Canyon Way (in addition to the single through lane and dedicated left-turn lane recommended with the other site development alternatives).
9. On Thursday evenings in the year 2030 when the Villagefest street fair is underway, the intersection of Belardo Road and Arenas Road is projected to operate at LOS F with all-way stop control with the Preferred Project and with the Preserve Town & Country Center Alternative. This intersection is projected to operate at acceptable levels of service with the No-Project Alternative, Less-Intense Alternative A, and Less Intense Alternative B. Although signalization would allow this intersection to operate at acceptable levels of service, urban signal warrants do not appear to be met by the projected peak hour traffic volumes at this intersection in the year 2030.
10. On Thursday evenings in the year 2030 when the Villagefest street fair is underway, the intersection of Belardo Road and Museum Way on-site is projected to operate at LOS F with all-way stop control with the Preferred Project and with all site development alternatives except the No-Project Alternative (which does not include this intersection) and Less-Intense Alternative A. This intersection appears to require signalization to meet the City of Palm Springs minimum performance standard with the Preferred Project, the Preserve Town and Country Center Alternative, and Less-Intense Alternative B.
11. On Thursday evenings in the year 2030 when the Villagefest street fair is underway and Palm Canyon Drive is closed to southbound traffic, the westbound (Amado Road) approach to the intersection of Belardo Road is projected to operate at LOS F with the Preferred Project and all site development alternatives with the existing two-way stop control. Signalization may be necessary at this intersection to maintain acceptable levels of minor-street control delay during the evening hours on Villagefest Thursdays, and urban peak hour traffic signal volume warrants appear to be met during this period. If signalization is not desirable, the following alternatives may be considered: (1) closure of the north leg of Belardo Road at Amado Road to permit the westbound left-turn movement to proceed unimpeded; (2) the provision of a traffic

control officer to manually direct traffic during peak hours; and (3) the provision of remote parking at underutilized parking lots with shuttles to Villagefest activities.

12. Andreas Road (between Palm Canyon Drive and Indian Canyon Drive) would need to be widened on the south side to permit two-way operation by removing the existing angled parking with Less-Intense Alternative A. The channelization of Andreas Road at Indian Canyon Drive would also need to be removed. The existing traffic signals may also require modification.
13. Traffic signals would be warranted and required to meet the City minimum intersection performance standard at the proposed intersection of Palm Canyon Drive with Museum Way and at Indian Canyon Drive with Museum Way, with the Preferred Project and Less-Intense Alternative B.
14. By eliminating a segment of the existing bike lanes on both sides of Belardo Road between the northern site boundary and Museum Drive, the vacation of right-of-way proposed along Belardo Road/Museum Drive would adversely affect the connectivity and continuity of the existing recreational bike trails in the area as well as access to the Las Palmas Loop, the Heritage Trail, the Citywide Loop, and the Downtown Loop bike trail.
15. All of the site development alternatives would substantially increase the number of pedestrians crossing roadways at-grade within the downtown, including Palm Canyon Drive and Indian Canyon Drive. Pedestrian travel typically peaks during the lunch hour in Central Business Districts when volumes will likely be double the average flow. The provision of Museum Way (or Andreas Road with Less-Intense Alternative A) as a pedestrian corridor would create a critical connection between the downtown core area and the City's resort amenities (including the convention center, casino, and hotels in Section 14). The pedestrian flows are expected to be greatest along the Palm Canyon Drive, Indian Canyon Drive, and Tahquitz Canyon Way block faces. Therefore, a major east/west pedestrian boulevard located along Museum Way (400 feet north of Tahquitz Canyon Way) which connects Indian Canyon Drive to Palm Canyon Drive appears to provide the requisite connectivity while minimizing conflicts with motorists entering and leaving the site.
16. All of the site development alternatives would substantially increase the demand for public transportation services within the downtown core area. The transit service improvement plan recently developed by the SunLine Transit Agency would reduce the significance of this impact by increasing access to public transportation along Indian Canyon Drive via Routes 14, 30, and 111.
17. Other than the No-Project Alternative, all site development alternatives would adversely impact the General Plan street system within the study area by providing angled parking on the west side of Palm Canyon Drive and possibly on the west side of Indian Canyon Drive. The sight distance for motorists backing out of the angled parking spaces would be very poor when large vehicles (minivans, SUVs, RVs or delivery trucks) were parked beside them, restricting the driver's view of approaching traffic until they backed a considerable distance into the travel lane to get a clear view around the adjacent vehicle. Approaching drivers would be forced to react suddenly to unexpected midblock conflicts by braking to a stop to avoid collisions, with the additional concern of being rear-ended. A major thoroughfare (such as Palm Canyon Drive and Indian Canyon Drive) that has numerous vehicles backing out of angled parking spaces into the adjacent travel lane cannot safely accommodate high traffic

volumes and would have substantially higher crash rates with angled parking than parallel parking.

18. With the exception of the No-Project Alternative, all site development alternatives would adversely impact the General Plan street system by deleting an existing "Collector" street link (Belardo Road/Museum Drive) shown in the current Circulation Element of the *Palm Springs General Plan*. The proposed improvement of Belardo Road across the site to Tahquitz Canyon Way as a private street with on-street angled parking would make through traffic movements secondary to the provision of short-duration on-street parking and access to the abutting development. Studies have shown that angled parking results in substantially higher accident rates than parallel parking in Central Business Districts. Although the capacity of Belardo Road does not appear to be of concern with year 2030 weekday or Saturday traffic volumes, Belardo Road is projected to operate near the capacity of a two-lane street during Villagefest, especially near the intersection of Museum Way. With the need to maintain capacity and pedestrian safety along Belardo Road, as well as the risk of higher accident rates associated with angled parking, Belardo Road should not provide angled parking through the study area.
19. The proposed project and all project alternatives would increase the number of pedestrians and the demand for pedestrian facilities on-site when compared to the existing uses. Pedestrian facilities need to be provided to link the parking areas with the proposed uses to provide easy and safe access throughout the project site. Pedestrian crossings of Palm Canyon Drive and Indian Canyon Drive should be provided in conjunction with the east/west streets to take advantage of the required traffic signal control. Where pedestrian boulevards are proposed across Palm Canyon Drive and Indian Canyon Drive without a new east/west street (i.e. with the Preserve Town & Country Center Alternative and Less-Intense Alternative A) signalized pedestrian crossings should be provided to insure safe pedestrian access.
20. With Palm Canyon Drive closed during Villagefest, Belardo Road provides the shortest access to the area west of Palm Canyon Drive for the Palm Springs Fire Department. If Belardo Road/ Museum Drive is vacated and abandoned as proposed, the extension of Belardo Road must be extended across the project site to Tahquitz Canyon Way. The Belardo Road extension must have adequate capacity to provide acceptable levels of service at all times (including during Villagefest) to maintain acceptable response times by emergency services responding to calls from areas west of Palm Canyon Drive.
21. The proposed project would increase the demand for off-street parking and short duration on-street parking within the immediate project vicinity. The project would eliminate some of the off-street parking spaces that have been used to meet the peak parking demands generated by the land uses within downtown Palm Springs. However, new parking facilities will be constructed at various locations throughout the project site. It may be necessary for the applicant to have a shared parking study prepared for City review and approval as well as enter into new shared parking agreements to assure sufficient off-street parking to satisfy the peak parking demands generated by the mixed-use development proposed within the Museum Market Plaza Specific Plan site. Up to 25 percent of the required parking for the Specific Plan area may be provided through the payment of in lieu fees.
23. The proposed project would increase traffic volumes on Palm Canyon Drive at the existing pedestrian crosswalks located north and south of Andreas Road and would also increase the number of pedestrians using these crosswalks to reach the proposed



development as well as the casino, the convention center, and various resorts within Section 14. These increases may adversely affect the safety of pedestrians using these crosswalks by increasing the potential for vehicle-pedestrian collisions. Provided that adequate intersection sight distance and minimum stopping sight distance is maintained along Palm Canyon Drive, the adverse effect should not be significant, as these crosswalks have been designed and constructed with appropriate features to facilitate the safe and efficient movement of large numbers of pedestrians.

#### **IF. CONSISTENCY WITH RELEVANT CIRCULATION PLANS**

The Preferred Project and all site development alternatives appear to be generally consistent with the General Plan and zoning. The project includes the vacation and abandonment of Belardo Road/Museum Drive, but proposes the southerly extension of Belardo Road as a private street with diagonal parking on both sides. If the Belardo Road extension were to be constructed to Tahquitz Canyon Way as a Collector, per the recommendations herein, a General Plan Amendment would be required to add Belardo Road as a Collector street to the Circulation Element.

#### **IG. RECOMMENDATIONS**

##### **CITY OF PALM SPRINGS REQUIREMENTS**

The following items reflect Palm Springs ordinance or policy requirements that apply to all development as conditions of approval.

1. The project proponent shall dedicate appropriate right-of-way, as needed, to accommodate the ultimate improvement of all General Plan public roadways within and adjacent to the project site. The developer may be required, prior to approval of development plans, to provide increased right-of-way through land dedications to accommodate additional demand for exclusive right-turn lanes, bus stops and lanes, bicycle facilities or other improvements required to maintain a minimum operating LOS D at intersections.
2. Master planned roadways shall be improved on and adjacent to the site per the design standards specified in the *Museum Market Plaza Specific Plan*.
3. Private roads shall be developed in accordance with the City's published engineering standards for public streets, unless otherwise approved by the City Engineer.
3. The developer shall, as a condition of approval, participate in the construction of bikeways on and/or adjacent to the site as required by the City of Palm Springs, to reconnect the existing recreational bike trails in the area known as the Las Palmas Loop, the Heritage Trail, the Citywide Loop, and the Downtown Loop that would be disconnected as a result of the removal of the segment eliminated by the vacation and abandonment of Belardo Road/Museum Drive proposed. The developer, may be required prior to approval of development plans, to provide right-of-way through land dedications to accommodate the City's network of trails and non-motorized routes.
4. The developer shall provide off-street parking and loading facilities for the proposed development, as specified in the development standards and guidelines within the Museum Market Plaza Specific Plan. Loading spaces shall be provided which meet the requirements of Section 93.07.01 of the *Palm Springs Municipal*

*Code*. The off-street parking layout shall be subject to the review and approval of the City Engineer.

5. The project proponent shall provide accessible parking spaces and accessible parking aisles (96 inches wide and designated "Van Accessible") that are ADA compliant. If valet parking facilities are provided, an accessible passenger loading zone shall also be provided on an accessible route to the entrance of the facility. If passenger loading zones are provided on-site, then at least one passenger loading zone shall be accessible.
6. The project proponent shall provide accessible routes of travel (including compliant curb ramps, sidewalks, and other improvements) along all public streets and within all public spaces and common areas, in accordance with current ADA guidelines and standards.
7. The project proponent shall contribute traffic impact mitigation fees, by participating in the Traffic Uniform Mitigation Fee (TUMF) program.

##### **RECOMMENDED MITIGATION**

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

8. The intersection approach lanes and traffic controls at the on-site and off-site key intersections should be improved consistent with Figures 5-1 through 5-7.
9. To insure compliance with City access and design standards, the final building and parking layout and site access design shall be subject to the review and approval of the City Engineer as part of the development review process.
10. Adequate reservoir capacity shall be provided at the access proposed to all parking structures to assure that cars waiting for entry to the parking garages on-site do not obstruct the adjacent street, particularly in the peak travel periods.
11. Clear unobstructed sight distances shall be maintained at the unsignalized site driveways, site access intersections, and internal intersections. All driveways with traffic exiting across public sidewalks shall have a clear sight triangle inside the property measuring 8 feet by 8 feet to allow driver visibility of pedestrians on the sidewalk. Screening fences or shrubbery shall not produce view obstructions at driveways or intersections.
12. Angled parking should not be located on-street along Palm Canyon Drive, Indian Canyon Drive, or Belardo Road since roadways with angled parking have been shown to have substantially higher crash rates than roadways with parallel parking.
13. Based on the need to maintain adequate north/south capacity during Villagefest (and other community activities that may require the closure of Palm Canyon Drive) as well as continuous access for emergency services to the area west of Palm Canyon Drive and promote pedestrian safety along Belardo Road, the extension of Belardo Road proposed across the site to Tahquitz Canyon Way should be classified as a public "Collector" street with a 66-foot right-of-way in the Circulation Element of the *Palm Springs General Plan*. To avoid an inconsistency with the General Plan Circulation Element, a Circulation Element Amendment may

be required to add the proposed extension of Belardo Road across the site as a "Collector" street to Tahquitz Canyon Way. Any on-street parking along the Belardo Road extension should be proposed in a Downtown Area Parking Study to be completed in the near future and approved by the City Engineer.

14. All off-street parking areas constructed on-site shall be adequately illuminated, to promote user safety and security as well as minimize the potential for vehicle-pedestrian collisions, without glare or excessive light beyond the property.
15. The loading facilities on-site shall be designed in a manner such that trucks will not back in or out of the loading facilities onto a public street or be required to use any public street for parking. All areas used by trucks shall be graded, properly drained, paved, and maintained.
16. All of the site development alternatives would substantially increase the demand for public transportation services within the downtown core area, the project proponent shall coordinate with SunLine Transit Agency and the City of Palm Springs regarding the need for public transit facilities on-site.
17. The project proponent shall contribute on a fair-share basis to the cost of circulation improvements required within the study area.

## **2. PROJECT DESCRIPTION**

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### **2A. PROJECT LOCATION**

The project site is located in the Coachella Valley, nestled against the base of the San Jacinto Mountains. The 20.59-acre site is south of Interstate 10, in the heart of downtown Palm Springs. Figure 2-1 depicts the project site in its regional context. The project site is more precisely located south of Amado Road and north of Arenas Road, between Museum Drive and Indian Canyon Drive, as shown in Figure 2-2.

### **SURROUNDING LAND USES**

The Museum Market Plaza site is located west of Section 14 and east of the Palm Springs Art Museum and the O'Donnell Golf Club, in the Central Business District of Palm Springs, California. The *Section 14 Master Development Plan/Specific Plan* provides development standards and regulations for a variety of land uses (including commercial uses, a casino, and hotels) designed to energize downtown Palm Springs. The Palm Springs Convention Center and numerous new, expanded, and revitalized uses are planned and being developed within Section 14 to create an integrated destination resort environment that will appeal to all age groups. The Spa Resort Casino is located directly east of the project site. The Hyatt Regency Suites Hotel is north of and abuts the project site. The Palm Mountain Resort is located immediately south of the Desert Fashion Plaza.

### **EXISTING ON-SITE LAND USES**

The area within the Museum Market Plaza Specific Plan includes: the Desert Fashion Plaza (288,400 S.F. of retail and 41,600 S.F. of restaurant uses), the Town & Country Center (15,000 S.F. restaurant, 33,600 S.F. retail and 2,350 S.F. offices), the Zeldaz Nightclub (7,120 S.F.), the Mercado Plaza surface parking lot, and the vacant 0.83-acre Palm Hotel site. Approximately 12 percent of the Desert Fashion Plaza is currently occupied.

### **2B. PROJECT DESCRIPTION**

The proposed project is the Museum Market Plaza Specific Plan. The proposed project is designed to serve visitors and local residents alike by re-integrating the site into the Palm Springs downtown and reducing the need for travel by automobile. The proposed project would provide a vibrant high-intensity mixed-use lifestyle center with living, shopping and entertainment venues in a central location. The project would include upscale boutique shops, galleries, neighborhood conveniences, restaurants, residential uses, and boutique hotels.

The various areas on-site have been divided into Planning Area Blocks, as shown in Figure 2-3. The core area is located north of Tahquitz Canyon Way and west of Palm Canyon Drive. Development within the core area would provide a combination of retail and professional office space (with up to 385,000 S.F.), multiple-family attached residences (900 dwellings units), and 565 hotel rooms. In addition, the formerly proposed Palm Hotel site (Block L in Figure 2-3), could be developed with limited retail space (15,000 S.F.) and 55 hotel rooms or high-density residential dwelling units.

With the Preferred Project, Belardo Road would be abandoned and vacated from the northern site boundary to the northern driveway of the Palm Springs Art Museum, as shown in Figure 2-4. Belardo Road would be reconnected across the site to Tahquitz

Figure 2-1  
Regional Location

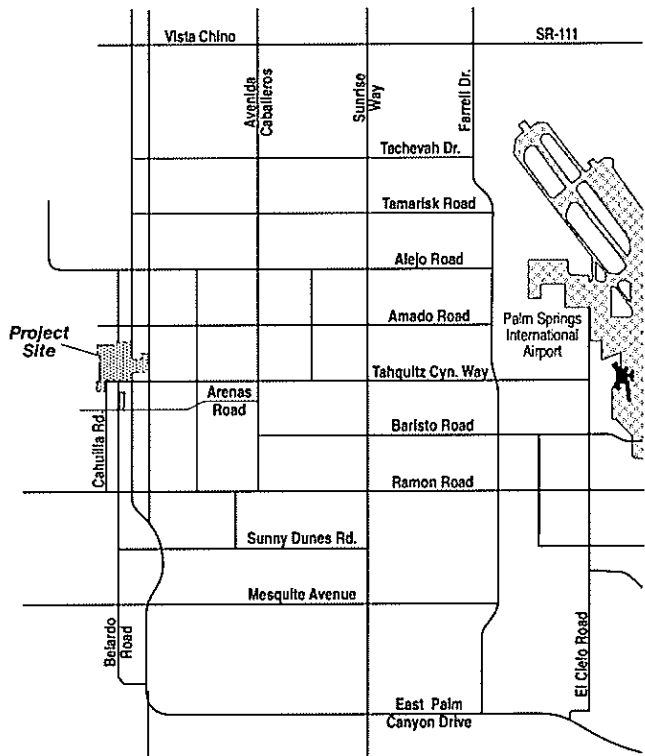
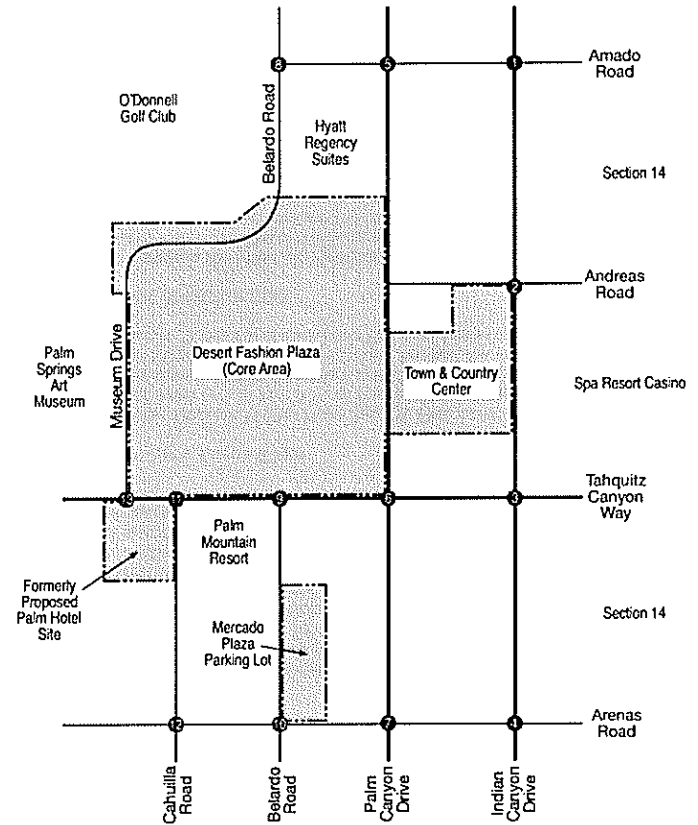


Figure 2-2  
Study Area and Key Intersections



**Legend**

- ① Key Intersection
- ▨ Project Site

Figure 2-3  
 Planning Area Blocks Within the Project Site

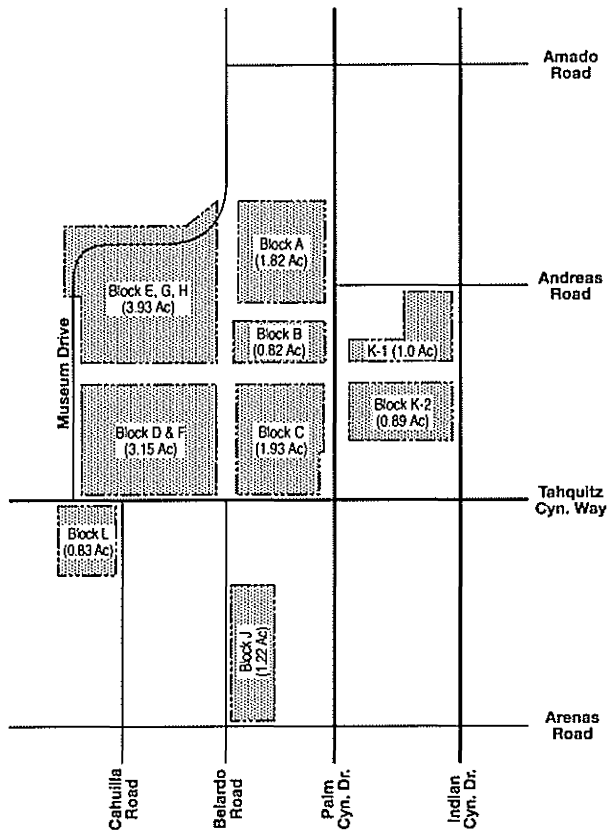
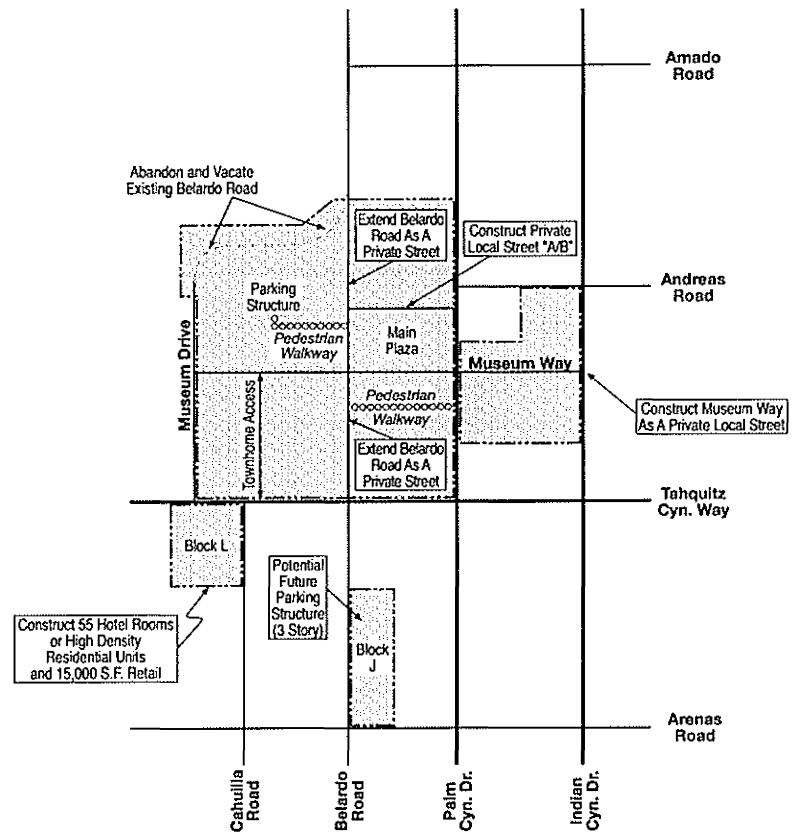


Figure 2-4  
 Key Elements of The Preferred Project



Canyon Way as a two-lane private street with on-street parking and a 62-foot right-of-way. A new private east/west boulevard (Museum Way) would be constructed to connect the Palm Springs Art Museum to Palm Canyon Drive and Indian Canyon Drive to enhance the pedestrian environment. In addition, a private east/west street would be constructed north of Museum Way, between Palm Canyon Drive and Belardo Road. Although the precise location of this roadway has not been determined, it would be south of Andreas Road, between Block A and Block B and is referred to herein as Street "A/B". The existing surface parking lot in Block J would be replaced by a three-level parking structure providing 500 parking spaces, 75 of which would be reserved for the Mercado Plaza.

**EXISTING USES TO BE REMOVED**

The proposed project would require the demolition and redevelopment of existing land uses on various portions of the project site, including those included in Table 2-1. The existing uses to be replaced would include the Town & Country Center and the Desert Fashion Plaza. With all development alternatives except the No-Project Alternative, the Mercado Plaza parking lot in Block J, would be replaced by a three-story parking structure with 500 parking spaces. The existing parking lot would be retained with the No-Project Alternative.

**Table 2-1  
Existing Land Uses/Entitlements To Be Replaced**

Land Use Type	Land Use Quantity	Development Status
<b>Town &amp; Country Center</b>		
Old Bank of America	15,980 S.F.	Existing
Restaurant Use	15,040 S.F. <sup>a</sup>	Existing
Retail	17,610 S.F.	Existing
Office	2,350 S.F.	Existing
<b>Total Square Footage</b>	<b>50,980 S.F.</b>	
<b>Desert Fashion Plaza</b>		
Restaurant Space	11,335 S.F.	Existing
Retail Space	19,591 S.F.	Existing
Office Space	8,717 S.F.	Existing
Commercial Retail (Unoccupied)	290,357 S.F.	Unoccupied
<b>Total Square Footage</b>	<b>330,000 S.F.</b>	
<b>Palm Hotel Site</b>		
Hotel	45 Units	Entitlement/Vacant

a. Includes the existing Zeldaz Nightclub/Restaurant with 7,120 square feet.

The land uses proposed on-site are detailed in Table 2-2. The Preferred Project would include: 565 to 620 hotel rooms, 300,000 square feet of retail uses, 100,000 square feet of office uses, and 900 to 955 multi-family residential dwelling units. Block J and/or Block L may be developed with parking structures to meet the parking demands generated by the proposed development. The key elements of the internal circulation system with the Preferred Project are illustrated in Figure 2-4.

**Table 2-2  
Land Use Summary By  
Museum Market Plaza Specific Plan Alternative**

Alternative/Land Use Type	Land Use Quantity
<b>Preferred Project</b>	
Hotel	565/620 Rooms <sup>a</sup>
Retail	300,000 S.F.
Office	100,000 S.F.
High Density Residential	955/900 D.U. <sup>a</sup>
<b>No-Project Alternative</b>	
Hotel	45 Rooms
Retail	330,000 S.F.
Retail	50,980 S.F.
<b>Preserve Town &amp; Country Center Alternative</b>	
Hotel	365/420 Rooms <sup>b</sup>
Retail	412,000 S.F.
Restaurants	15,000 S.F.
Offices	2,350 S.F.
High-Density Residential	955/900 D.U. <sup>b</sup>
<b>Less-Intense Alternative A</b>	
Retail (Includes a 42,500 S.F. Supermarket)	203,500 S.F.
Office	42,350 S.F.
Restaurants	15,000 S.F.
Cinema	68,000 S.F.
High-Density Residential	120 D.U.
<b>Less-Intense Alternative B</b>	
Hotel	255 Rooms
Retail	330,000 S.F.
High-Density Residential	765 D.U.

a. With the Preferred Project, a total of 55 units may be ultimately hotel rooms or high-density residential units. If 565 hotel rooms are constructed, then 955 high-density dwelling units could be built. If 620 hotel rooms are constructed, then 900 high-density dwelling units could be built.

b. With the Preserve Town & Country Center Alternative, a total of 55 units may be ultimately hotel rooms or high-density residential units. Therefore, if 365 hotel rooms are constructed then 955 dwelling units could be built, whereas if 420 hotel rooms are constructed then 900 high-density dwelling units could be built.

**DEVELOPMENT ALTERNATIVES**

Table 2-2 summarizes the land uses associated with each of the on-site development concept alternatives evaluated. The No-Project Alternative would refurbish the Desert Fashion Plaza in its current configuration and maintain the Town & Country Center and

adjacent buildings as well as the surface parking lot at Mercado Plaza. With the No-Project Alternative, 45 hotel rooms would be constructed in Block L, as permitted by the *Palm Springs General Plan* and Zoning designations. Belardo Road would connect to Museum Drive along the existing alignment with the No-Project Alternative, as shown in Figure 2-5. Museum Way would not be constructed across the site (east of Museum Drive) with the No-Project Alternative.

The Preserve Town & Country Center Alternative would rehabilitate the Town & Country Center (with the exception of the old Bank of America building on Palm Canyon Drive) and generally retain the existing development in Block K. The Preserve Town & Country Center Alternative is identical to the Preferred Project for the area west of Palm Canyon Drive. With this alternative, Museum Way would not extend between Palm Canyon Drive and Indian Canyon Drive, as shown in Figure 2-6.

Less-Intense Alternative A would reduce the building heights proposed and provide substantially less retail and office space, fewer high density residences, a cinema (with 68,000 S.F.), a supermarket, and a park in the center of the core area. Like the Preserve Town & Country Center Alternative, Less-Intense Alternative A would include the rehabilitation of the Town & Country Center. A total of 1,000 parking spaces would be provided throughout the project and Block L would be developed as a parking structure. The internal circulation elements proposed with Less-Intense Alternative A would differ from those associated with the other conceptual alternatives to accommodate the central park, as shown in Figure 2-7.

Less-Intense Alternative B represents a less intense version of the Preferred Alternative. This alternative would include fewer than one-half the hotel rooms of the Preferred Alternative. In addition, the number of residential units proposed would be reduced, as would the office uses. The internal circulation elements would be similar to those with the Preferred Project, as shown in Figure 2-8.

**PROPOSED ROADWAY MODIFICATIONS**

As shown in Figure 2-4, the Preferred Project would provide a reconnection of Belardo Road through the project site. The Preferred Project would also include a new east/west boulevard (Museum Way) extending east from the entry to the Desert Art Museum to Palm Canyon Drive and Indian Canyon Drive. The No-Project Alternative would retain the existing street system, as shown in Figure 2-5.

The Preserve Town & Country Center Alternative (shown in Figure 2-6) would terminate Museum Way at Palm Canyon Drive and would not extend a new roadway between Palm Canyon Drive and Indian Canyon Drive. With a central park, Less-Intense Alternative A, as shown in Figure 2-7, would include different internal roadway alignments with Belardo Road aligned around the central park and the east/west Museum Way extending only from Museum Drive east to Belardo Road. The street system shown in Figure 2-7 for Less-Intense Alternative B is the same as that with the Preferred Project.

An east/west private two-lane street is planned extending from Belardo Road to Palm Canyon Drive, between Block A and Block B (see Figure 2-3) with the Preferred Project, the Preserve Town & Country Center Alternative and Less-Intense Alternative B. The final location of this second east/west street has not been determined to date. This roadway is referred to herein as Street "A/B".

Figure 2-5  
Key Elements of the No-Project Alternative

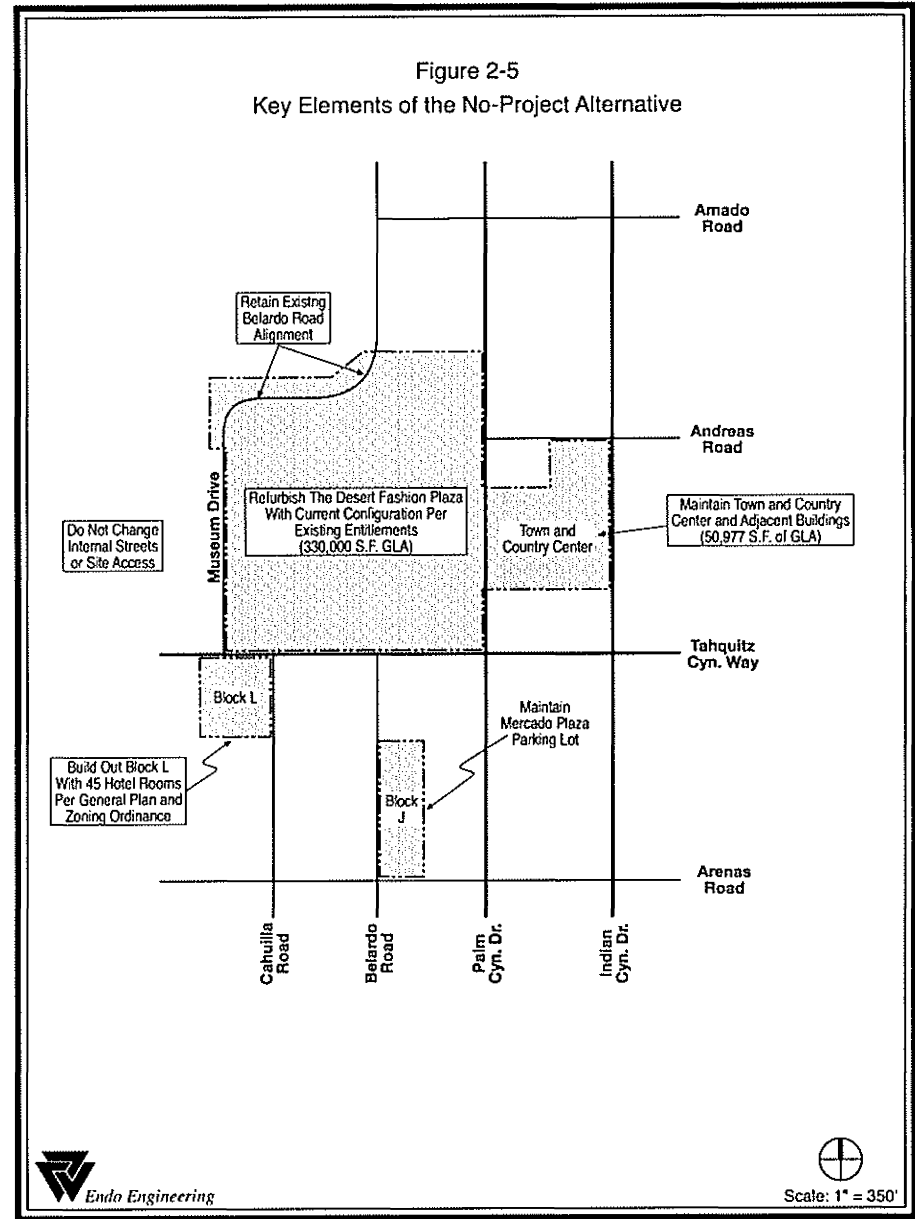


Figure 2-6  
Key Elements of the Preservation of  
Town and Country Center Alternative

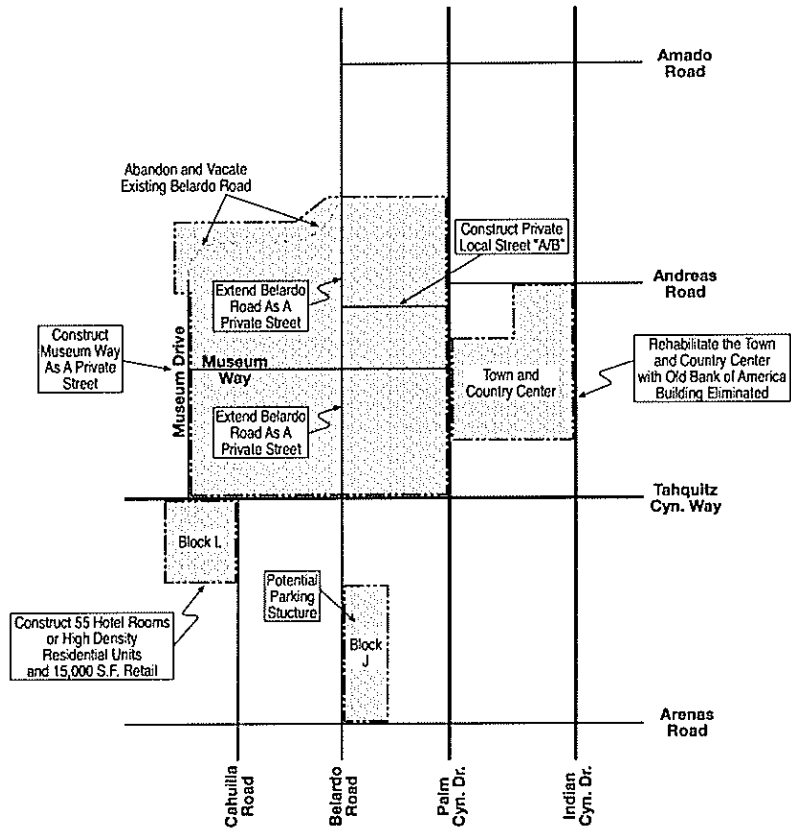


Figure 2-7  
Key Elements of Less-Intense Alternative A

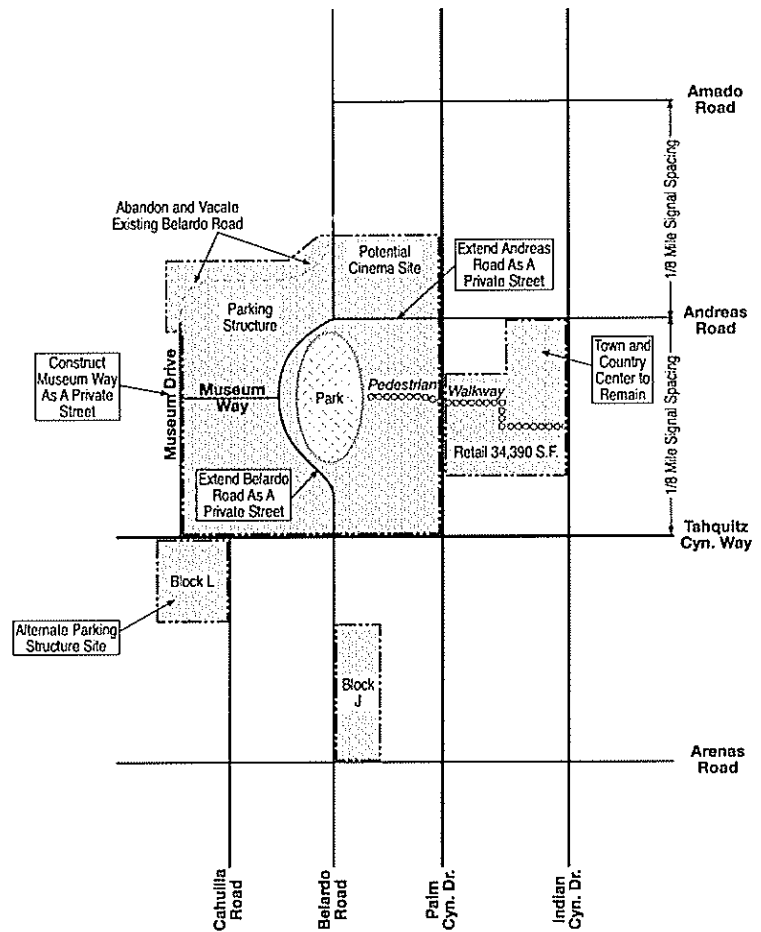
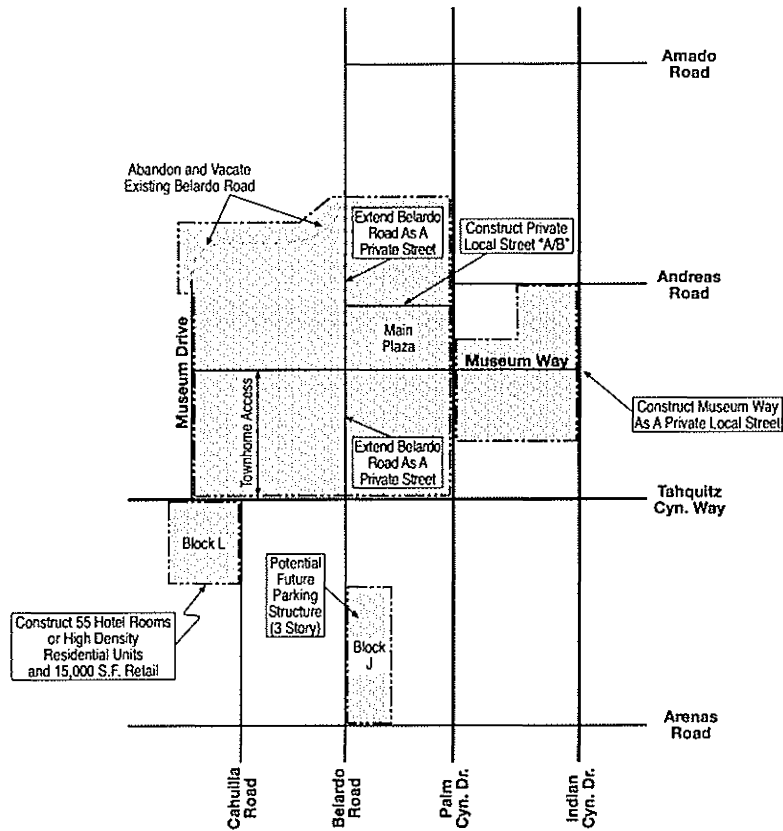


Figure 2-8  
Key Elements of Less-Intense Alternative B



As shown in Figure 2-9, the proposed project would maintain a minimum of three lanes on Palm Canyon Drive, and would provide angle parking on the west side of this roadway, but maintain the existing parallel parking on the east side of this roadway. Palm Canyon Drive has an 80-foot right-of-way and the existing pavement is approximately 50 feet wide (curb-to-curb). Therefore, pavement widening would be required to replace the existing 8-foot parking lane with a 19-foot row of 45-degree angle parking spaces. Indian Canyon Drive would retain four through travel lanes, with parallel parking on the east side. If the west side of Indian Canyon were to be modified to have angled parking, Indian Canyon Drive would need to be widened by approximately eleven feet to replace the existing 8-foot parallel parking lane with a 19-foot wide row of 45-degree angle parking spaces.

**2C. PROJECT STUDY AREA**

The study area and key intersections were identified, following coordination with the City of Palm Springs, based upon the City of Palm Springs significance threshold of 50 project-related peak hour trips. The key intersections are shown in Figure 2-2 and include:

1. Indian Canyon Drive at Amado Road;
2. Indian Canyon Drive at Andreas Road;
3. Indian Canyon Drive at Tahquitz Canyon Way;
4. Indian Canyon Drive at Arenas Road;
5. Palm Canyon Drive at Amado Road;
6. Palm Canyon Drive at Tahquitz Canyon Way;
7. Palm Canyon Drive at Arenas Road;
8. Belardo Road at Amado Road;
9. Belardo Road at Tahquitz Canyon Way;
10. Belardo Road at Arenas Road;
11. Cahuilla Road at Tahquitz Canyon Way;
12. Cahuilla Road at Arenas Road; and
13. Museum Drive at Tahquitz Canyon Way.

Although the No-Project Alternative would include no internal roadway intersections that require analysis, the Preferred Project would include an analysis of the following on-site intersections: Belardo Road with Museum Way (Intersection 14), Palm Canyon Drive with Museum Way (Intersection 15), and Indian Canyon Drive with Museum Way (Intersection 16). The Preserve Town & Country Center Alternative would include an analysis of the on-site intersection of Belardo Road with Museum Way (Intersection 14).

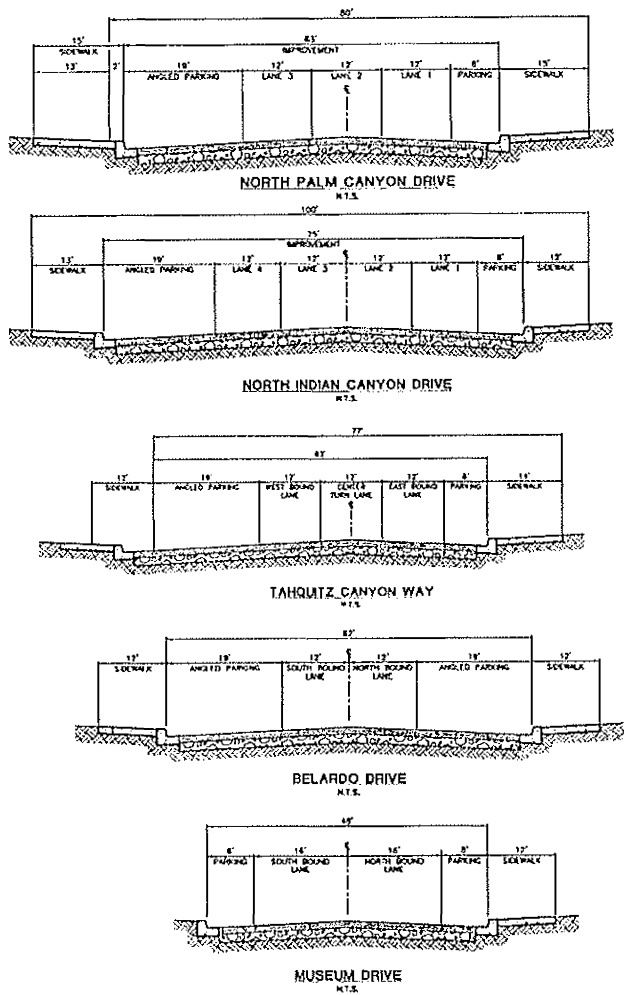
Less-Intense Alternative A would include an analysis of the following on-site intersections: Belardo Road with Museum Way (Intersection 14), Palm Canyon Drive with Andreas Road (Intersection 17), and Belardo Road with Andreas Road (Intersection 18). Less-Intense Alternative A would include an analysis of the following on-site intersections: Belardo Road with Museum Way (Intersection 14), Palm Canyon Drive with Museum Way (Intersection 15), and Indian Canyon Drive with Museum Way (Intersection 16).

**2D. CUMULATIVE PROJECTS**

Through coordination with the City of Palm Springs, fifteen cumulative projects were identified that would generate traffic through the study area, as shown in Table 2-3. The area encompassed by the cumulative projects extended north to Tamarisk Road, east to Farrell Drive, and south to East Palm Canyon Drive. The location of each of the cumulative developments addressed herein is shown in Figure 2-10.



Figure 2-9  
Proposed Street Cross-Sections



Source: Terra Nova Planning and Research Inc.

Figure 2-10  
Fifteen Cumulative Projects

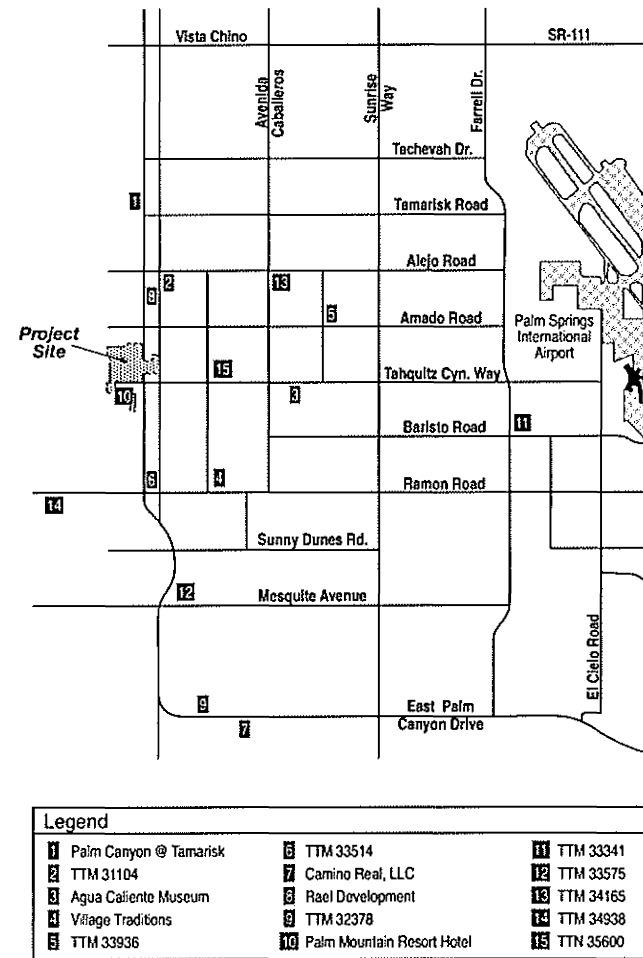


Table 2-3  
Cumulative Projects Evaluated

Project	Land Use Category	ITE Code <sup>a</sup>	Quantity <sup>b</sup>
1. Palm Cyn @ Tamarisk	Commercial	814	3,500 SF
	Residential- MFA	230	12 DU
2. T.T. Map 31104	Residential- MFA	230	20 DU
3. Agua Caliente Museum	Museum	Rael TIA	90,000 SF
4. Village Traditions	Residential- MFA	230	104 DU
5. T.T. Map 33936	Residential- MFA	230	21 DU
6. The Palm Canyon (TTM 33514) - Existing (50% Occupied) - Proposed	Retail	820	45,936 SF
	Retail	820	39,250 SF
	Residential - MFA	230	125 DU
7. Camino Real, LLC	Residential- MFA	230	25 DU
	Residential- SFD	210	9 DU
8. Rael Development - Existing  - Proposed	Commercial	814	17,490 SF
	General Office	SANDAG	2,500 SF
	Restaurant	932	1,620 SF
	Commercial	814	28,000 SF
	Residential- MFA	230	130 DU
General Office	SANDAG	4,400 SF	
9. T.T. Map 32378	Residential- MFA	230	11 DU
10. Palm Mountain Resort	Hotel	310	40 Rooms
11. T.T. Map 33341	Residential- MFA	230	156 DU
12. T.T. Map 33575	Residential- MFA	230	100 DU
	Commercial	814	32,580 SF
13. T.T. Map 34165	Residential- MFA	230	84 DU
14. T.T. Map 34938	Residential- MFA	230	34 DU
15. T.T. Map 35600	Hotel	Hard Rock TIA	482 Rooms

a. The ITE Trip Generation Land Use Code is shown except for the museum (where the Rael trip generation forecast was assumed) and the small General Office use for which rates in the SANDAG *Traffic Generators* publication were assumed because the floor area was too small to fall within the cluster of data in the ITE *Trip Generation* manual.

b. SF = Square Feet. DU = Dwelling Units.

### 3. CIRCULATION BACKGROUND ANALYSIS

#### 3A. EXISTING AND APPROVED LAND USES

The project site is located within the heart of Downtown Palm Springs, a world-famous premier desert resort destination and community. Within the City of Palm Springs central business district (CBD) the dominant land uses include pedestrian-oriented shopping and entertainment districts, destination resorts, businesses, and commercial/retail uses for residents, tourists, and the regional market. Commercial vehicle loading of goods and people occurs on a regular basis in the Downtown and a heavy demand exists for parking with a high degree of parking turnover.

Most of the streets in the study area currently permit parallel on-street curb parking. Parking bays have been constructed along both sides of Palm Canyon Drive and Indian Canyon Drive to provide for the short-duration parking needs of abutting uses while minimizing the potential for adverse impacts on capacity and safety that are typically associated with on-street parking along arterial streets.

#### EXISTING ON-SITE LAND USES

The area within the Museum Market Plaza Specific Plan includes: the Desert Fashion Plaza (288,400 S.F. of retail and 41,600 S.F. of restaurant uses), the Town & Country Center (15,000 S.F. restaurant, 33,600 S.F. retail and 2,350 S.F. offices), the Zeldaz Nightclub (7,120 S.F.), the Mercado Plaza surface parking lot, and the vacant 0.83-acre Palm Hotel site. Approximately 12 percent of the Desert Fashion Plaza is currently occupied.

Belardo Road (south of Amado Road), Museum Drive, and Tahquitz Canyon Way (east of Museum Drive) currently provide an important link in several citywide bikeway loops. The Heritage Trail Citywide Loop, the Tahquitz Creek Citywide Loop, the Downtown Loop and the Las Palmas Loop all include bikeways along the portion of Belardo Road that would be abandoned and vacated with the proposed project but retained with the No-Project Alternative.

#### Villagefest Street Fair

Villagefest and other special events, festivals, and parades occur in Downtown Palm Springs periodically throughout the year. Every Thursday night, the Villagefest street fair occurs on Palm Canyon Drive, between Amado Road and Baristo Road.

Started in 1991, Villagefest occurs between 6:00 PM and 10:00 PM from October through May, and between 7:00 PM and 10:00 PM from June through September. Villagefest attracts thousands of visitors each week by offering street entertainment and more than 200 booths with art, hand-crafted items, and unique food.

The closure of Palm Canyon Drive to southbound traffic on Thursday evenings to accommodate Villagefest activities dramatically increases traffic volumes (through traffic, local traffic, and Villagefest visitor traffic alike) on Belardo Road (between Amado Road and Baristo Road) and on Museum Drive. Traffic volumes also increase east of the study area (along Calle Encilia) during Villagefest.

**APPROVED ON-SITE LAND USES**

The area within the Museum Market Plaza Specific Plan has entitlements for 330,000 square feet of retail floor space within the core area as well as the 50,980 square feet of retail floor space associated with the Town & Country Center, and 45 hotel rooms (based upon the entitlements of the former Palm Hotel site). Full development per these entitlements is addressed herein as the No-Project Alternative.

The No-Project Alternative would refurbish the Desert Fashion Plaza in its current configuration and maintain the Town & Country Center and adjacent buildings as well as the surface parking lot at Mercado Plaza. With the No-Project Alternative, 45 hotel rooms would be constructed in Block L, as permitted by the *Palm Springs General Plan* and Zoning designations. Belardo Road would remain connected to Museum Drive along its existing alignment with the No-Project Alternative.

**3B. SURROUNDING STREET SYSTEM**

Figure 3-1 depicts the street system within the study area. North/south access is provided primarily by a one-way couplet formed by Palm Canyon Drive and Indian Canyon Drive. One-way streets typically have a somewhat greater capacity than two-way streets due to the reduced friction and because left-turn movements can be made more easily when there is no opposing traffic. Better traffic signal progression is often possible on one-way streets. Where cross streets are also one-way, (e.g., Palm Canyon Drive at Andreas Road and Indian Canyon Drive at Andreas Road) turning movement conflicts are further reduced. The reduction in total possible movements reduces pedestrian-vehicular conflicts.

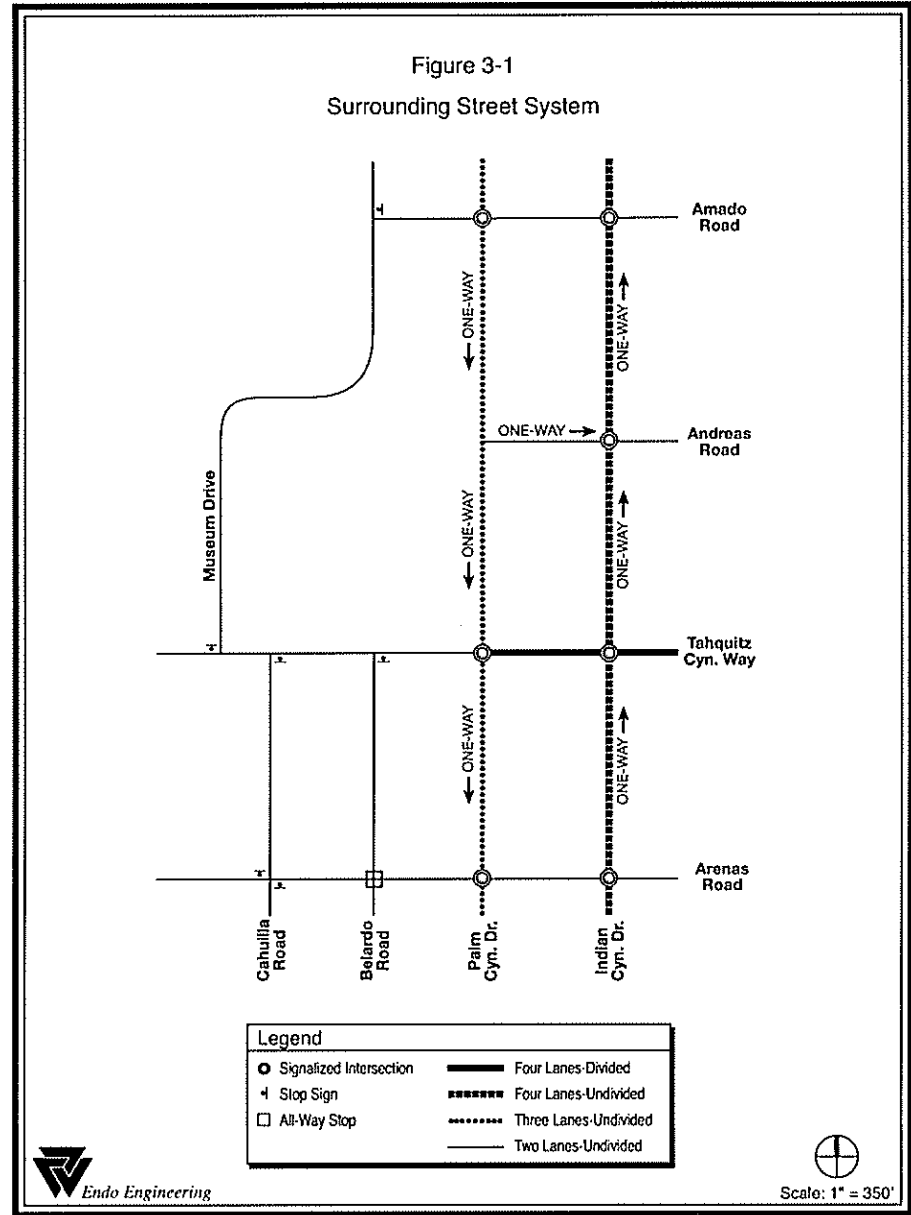
East/west access is provided primarily by Tahquitz Canyon Way, which connects downtown Palm Springs to the Resort/Convention Center District within Section 14 and the Palm Springs International Airport (to the east). Tahquitz Canyon Way also provides access to the residential neighborhood located southwest of the project site.

Local access is provided by Belardo Road, Amado Road, Andreas Road, and Arenas Road. Direct site access is provided by Belardo Road, Palm Canyon Drive, Indian Canyon Drive, Museum Drive, Cahuilla Road, Andreas Road, and Arenas Road. The existing traffic control devices at the key intersections and the number of mid-block through lanes are shown in Figure 3-1, based upon field reconnaissance in the project vicinity.

**Palm Canyon Drive** is a 3-lane one-way roadway within the study area serving southbound traffic. A significant portion of the traffic approaching the site from the north on Palm Canyon Drive is regional traffic from the Interstate 10 Freeway. The posted speed limit along Palm Canyon Drive is 25 miles per hour (MPH). On-street parallel parking is currently permitted on both sides of Palm Canyon Drive throughout the study area. The existing pavement width is approximately 50 feet curb-to-curb.

**Indian Canyon Drive** is a 4-lane one-way roadway within the study area serving northbound traffic. The posted speed limit along Indian Canyon Drive is 30 mph. Indian Canyon Drive provides direct access to the Interstate 10 Freeway, via an interchange located north of the study area. In conjunction with Palm Canyon Drive, Indian Canyon Drive provides the primary north/south arterial access to Downtown Palm Springs as the northbound side of a one-way couplet. Parallel on-street parking is currently permitted along both sides of Indian Canyon Drive within the study area. The existing pavement width is approximately 61 feet curb-to-curb.

Figure 3-1  
Surrounding Street System



Scale: 1" = 350'

**Tahquitz Canyon Way** is the most direct link between the Palm Springs International Airport terminal and the study area. East of Indian Canyon Drive, Tahquitz Canyon Way is a 4-lane divided east/west roadway with a raised landscaped median and a posted speed limit of 30 mph. West of Indian Canyon Drive, Tahquitz Canyon Way is a 52-foot wide two-lane undivided street with on-street parallel parking on both sides of the roadway and sufficient pavement width for a dedicated left-turn lane at intersections. West of Museum Drive, Tahquitz Canyon Way provides access to a condominium complex. The intersections of Tahquitz Canyon Way with Palm Canyon Drive and with Indian Canyon Drive are both signalized.

**Belardo Road** is a north/south two-lane undivided roadway located approximately 325 feet west of Palm Canyon Drive (at Amado Road). South of Amado Road, Belardo Road diverts to the west to connect to Museum Drive. From Tahquitz Canyon Way south, Belardo Road appears to be located approximately 335 feet west of Palm Canyon Drive. Belardo Road is controlled by a STOP sign at Tahquitz Canyon Way. An all-way STOP controls the intersection of Belardo Road and Arenas Road. The prima facie speed on Belardo Road appears to be 25 mph.

**Amado Road** is a two-lane undivided roadway that is signalized at the intersections of Palm Canyon Drive and Indian Canyon Drive. Amado Road provides access from the project site to the Spa Resort Casino and Palm Springs Convention Center. East of Indian Canyon Drive, Amado Road has sufficient pavement width to accommodate four travel lanes. The prima facie speed on Amado Road in the study area appears to be 25 mph.

**Andreas Road** is a two-lane undivided roadway with sufficient pavement width to accommodate four travel lanes east of Indian Canyon Drive. Between Palm Canyon Drive and Indian Canyon Drive, Andreas Road is a single lane one-way (eastbound) street with angled parking on the south side and parallel on-street parking on the north side of the roadway. The intersection of Andreas Road and Indian Canyon Drive is signalized, and the eastbound approach is channelized to prevent eastbound through movements across Indian Canyon Drive. With the angled parking on the south side of Andreas Road, the eastbound approach is sufficiently off-set to the north of receiving lane on Andreas Road (east of Indian Canyon Drive) as to make it impractical to allow the eastbound vehicles to make a through movement. Traffic on Andreas Road currently moves at low speeds (15 mph) throughout the day.

**Arenas Road** is an east/west two-lane undivided roadway that extends across the southern portion of the study area. The intersection of Arenas Road and Cahuilla Road is two-way stop controlled with STOP signs on Cahuilla Road. The intersection of Arenas Road and Belardo Road is all-way stop controlled. The two intersections of Palm Canyon Drive and Indian Canyon Drive with Arenas Road are controlled by traffic signals. West of Indian Canyon Drive, the posted speed limit is 25 mph. East of Indian Canyon Drive, Arenas Road has angled parking on the north and south side of the street and operates with a prima facie speed of 15 mph.

**Museum Drive** is a north/south two-lane undivided roadway that extends from Tahquitz Canyon Way north to Belardo Road, along the western edge of the project site. Museum Drive provides access to the Palm Springs Art Museum as well as parking areas for the Desert Fashion Plaza. The posted speed limit on Museum Drive is 25 mph. Bike lanes are located on both sides of Museum Drive/Belardo Road. On-street parallel parking is permitted on Museum Drive.

**Cahuilla Road** is a north/south two-lane undivided roadway which extends south of Tahquitz Canyon Way approximately 310 feet west of Belardo Road. The two intersections of Cahuilla Road with Tahquitz Canyon Way and Arenas Road are two-way stop controlled with STOP signs on Cahuilla Road. The speed on Cahuilla Road is approximately 25 mph.

### 3C. GENERAL PLAN CIRCULATION SYSTEM

Proposals for development and redevelopment must be reviewed for consistency with the goals and policies in the Palm Springs General Plan. Where inconsistencies are found, mitigation measures must be identified to address those impacts.

#### **PALM SPRINGS CIRCULATION ELEMENT**

The City of Palm Springs General Plan Circulation Element details the general location, character, and extent of the circulation system required to serve future travel demands associated with build-out per the Land Use Element of the General Plan. It details the roadway classification (i.e. major thoroughfare, secondary thoroughfare or collector street), the required right-of-way width, designated truck routes, master planned bikeways and horse trails. The *Palm Springs General Plan* Circulation Element Map does not include all local streets.

The roadway classifications shown in the *Palm Springs General Plan* for the roadways within the study area are illustrated in Figure 3-2. Figure 3-3 illustrates typical street cross-sections within the City of Palm Springs. The *City of Palm Springs General Plan* was updated in October of 2007. The revisions made at that time included changes in the Circulation Element classification of the streets within the study area. Tahquitz Canyon Way was designated a collector street, west of Belardo Road, and a major thoroughfare east of Belardo Road.

As shown therein, Amado Road, Indian Canyon Drive, Palm Canyon Drive, and Tahquitz Canyon Way (east of Belardo Road) are classified as major thoroughfares. Major thoroughfares are typically high capacity streets with a 10-foot to 14-foot wide median that provide four or more travel lanes within a 100-foot to 110-foot right-of-way. They have a limited number of cross streets and provide stacking and turning lanes at intersections.

Arenas Road is classified as a secondary thoroughfare. Secondary thoroughfares are four-lane undivided roadways with 64 feet of pavement and an 80-foot or 88-foot right-of-way that chiefly serve locally destined traffic and secondary traffic generators.

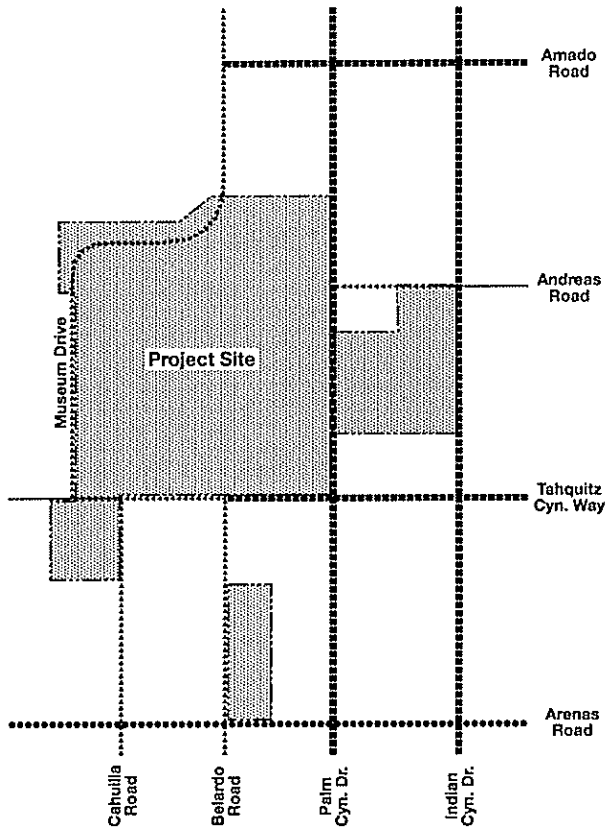
Collector streets are typically two-lane undivided roadways with 40 feet of pavement within a 60-foot to 66-foot right-of-way. Collector streets include: Andreas Road (between Palm Canyon Drive and Indian Canyon Drive), Belardo Road, Cahuilla Road, and Tahquitz Canyon Way (between Belardo Road and Museum Drive).

The City of Palm Springs Circulation Element includes numerous circulation goals, policies, and actions that may be relevant to the project, which have been included as Appendix E. Policy CR2.1 specifies that Level of Service D or better be maintained for the City's circulation network, as measured using "in season" peak hour conditions.

### 3D. EXISTING TRAFFIC VOLUMES

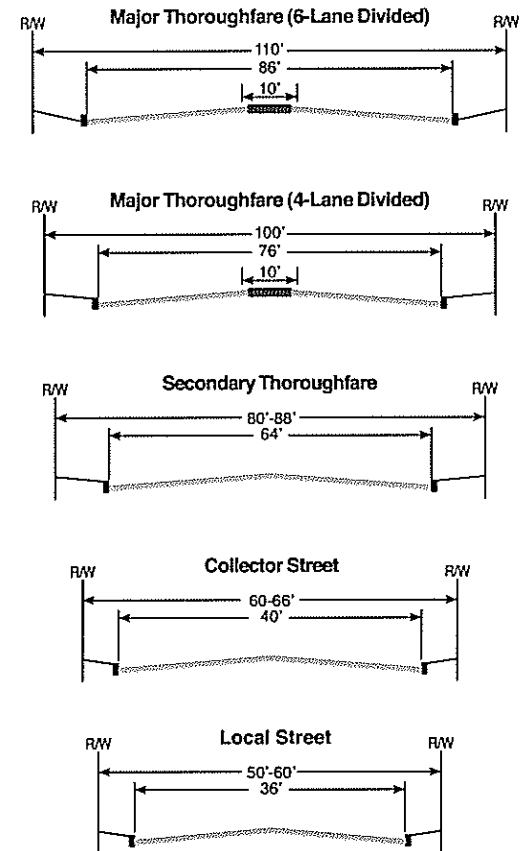
Within the study area, it is not enough to show that adequate capacity exists to handle peak morning and evening commute periods on typical weekdays. The midday peak hour traffic

Figure 3-2  
Palm Springs General Plan Circulation System



Legend	
	Major Thoroughfare
	Secondary Thoroughfare
	Collector Street
	Local Street

Figure 3-3  
Typical Street Cross-Sections  
(City of Palm Springs)



Additional right-of-way may be required for sidewalks and bike lanes in some cases

volumes in the study area exceed the morning peak hour traffic volumes. On weekends, the highest travel demand occurs in the midday on Saturdays and it can exceed the weekday peak hour demand at some intersections.

The north/south travel demand in the study area on Belardo Road and Museum Drive increases dramatically on Thursday evenings during Villagefest, when Palm Canyon Drive is closed to southbound traffic. The potential exists for peak travel demands during the midday on Saturdays and during the evening on Thursdays with Villagefest to exceed the travel demands at some of the key intersections in the study area on typical weekdays. Even though the daily capacity of Belardo Road may not be exceeded on weekends or Thursdays with Villagefest traffic, these scenarios were evaluated to assure that long back-ups will not develop in the future during peak travel hours on weekends or during special events if Belardo Road is realigned through the project site.

Within the study area, 24-hour traffic count data has shown that the midday peak hour traffic volumes are significantly greater than the traditional morning commuter peak hour volumes. To reflect the peaking characteristics in the project vicinity, the analysis herein addressed the midday (11:00 AM to 1:00 PM) peak hour and the evening (4:00 PM to 6:00 PM) peak hour.

To determine the peak hour traffic volumes at the existing key intersections, two-hour midday peak (11:00 AM to 1:00 PM) and two-hour evening peak (4:00 PM to 6:00 PM) manual turning movement traffic counts were made on Wednesday, July 9, 2008 at six key intersections by Counts Unlimited, Inc. Peak hour traffic volumes were available from previous studies for the remaining key intersections.

Twenty-four hour machine traffic counts were also made on Wednesday, Thursday, and Saturday (July 9, 10, and 12, 2008) on five of the study area roadways. The resulting 24-hour traffic count data (included in Appendix A) was used to identify an appropriate seasonal correction factor for the peak hour intersection count data collected on the same three days at the key intersections in the study area. Seasonal adjustments were also made by comparing the 24-hour traffic count data collected to peak season traffic counts published by CVAG, peak season counts in other traffic studies for the area, and City of Palm Springs traffic count data.

#### **PEAK SEASON CORRECTION FACTOR**

A 24-hour machine traffic counter was placed on Palm Canyon Drive, south of Andreas Road, which identified 9,788 VPD on Wednesday, July 9, 2008. The CVAG 2007 Traffic Census report included a peak season 2007 count of 13,395 VPD on Palm Canyon Drive, south of Alejo Road, and a count of 12,582 VPD on Palm Canyon Drive, south of Tahquitz Canyon Way. Since Andreas Road is centrally located between the two CVAG count locations, the traffic volume on Palm Canyon Drive at Andreas Road was assumed to be the average of the two counts, or 12,988 vehicles. The July 9 (off-peak) traffic counts were seasonally corrected (expanded by 33 percent) to reflect current peak season conditions.

#### **ANNUAL TRAFFIC GROWTH RATE**

Based upon historical traffic counts compiled by CVAG on Palm Canyon Drive, average weekday traffic volumes in the study area have remained approximately constant for the past thirteen years. Therefore, the traffic counts were corrected to reflect the peak season, but the recent traffic counts did not include an annual traffic growth rate. Appendix A includes the new traffic count data.

The existing 2008 peak season midday and evening peak hour turning movement traffic volumes on a typical weekday are shown in Figure 3-4. The 24-hour machine traffic counts determined that 8.0 percent of the daily traffic volume occurs during the evening peak hour in the study area. Assuming this 8.0 percent factor, the year 2008 peak season daily traffic volumes adjacent to the key intersections were estimated from the peak hour volumes shown in Figure 3-4. The peak season typical weekday traffic volume estimates made in this fashion are shown in Figure 3-5 and Table 3-1.

#### **EXISTING TRAFFIC DIVERTED TO BELARDO ROAD**

Villagefest is located on Palm Canyon Drive, between Amado Road and Baristo Road. From June through September, Villagefest is open between 7:00 PM and 10:00 PM on Thursday nights. From October to May, the Villagefest hours are between 6:00 PM and 10:00 PM. Although Villagefest occurs after the typical 4:00 PM to 6:00 PM commuter peak hours, traffic volumes along some routes within the study area increase dramatically during Villagefest activities. Motorists diverting around the closed section of Palm Canyon Drive increase traffic volumes along Belardo Road and Museum Drive.

With the closure of Palm Canyon Drive during Villagefest, traffic volumes on Belardo Road are greater throughout the study area. However, traffic volumes on other streets in the study area can be lower because the Villagefest activities require the closure of cross streets which intersect Palm Canyon Drive and Villagefest activities occur after the typical evening commuter peak hour. Therefore, the three existing key intersections along Belardo Road were evaluated with the highest hour Thursday night Villagefest volumes.

#### **Traffic Volumes Associated With Villagefest**

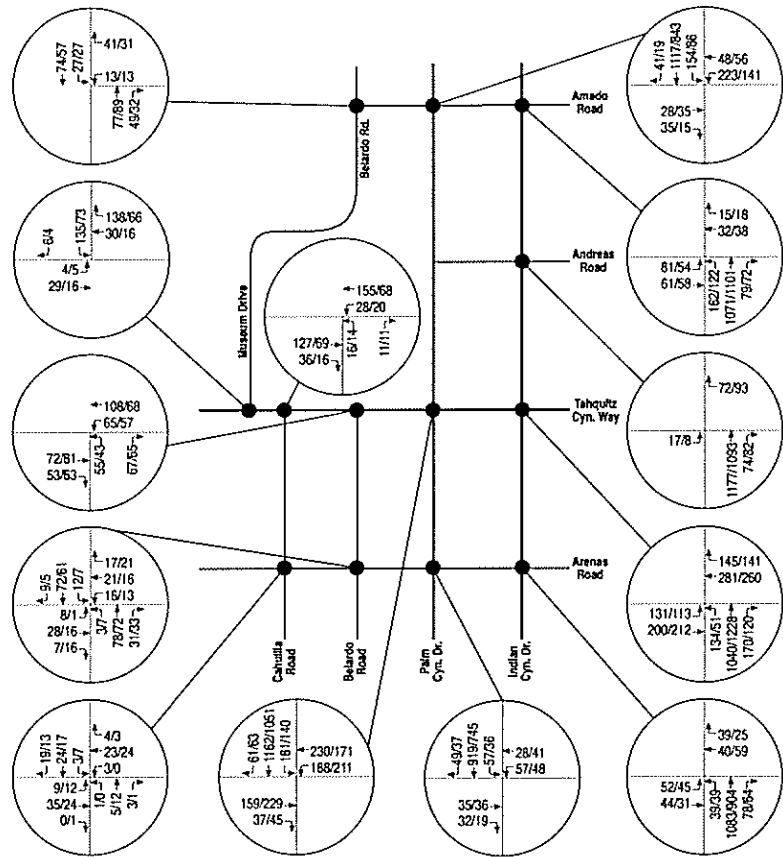
Villagefest conditions were documented with three Thursday night intersection counts (from 6:30 PM through 8:30 PM) at the key intersections along Belardo Road on Thursday, July 10, 2008. The count data (included in Appendix A) was expanded by 33 percent to reflect peak season conditions.

Figure 3-6 illustrates the existing traffic volumes in the peak hour on a peak season Thursday when Villagefest activities are under way. The turning volumes in Figure 3-6 reflect conditions in the evening when Palm Canyon Drive is closed to through traffic, between Amado Road and Baristo Road to accommodate Villagefest. Through traffic diverts to alternate parallel routes (primarily Belardo Road to the west and Calle Encilia to the east) during the hours when Palm Canyon Drive is closed.

A 24-hour directional machine traffic count was made on Belardo Road (south of Amado Road) on Wednesday (July 9, 2008) and on Thursday (July 10, 2008) to identify the change in northbound and southbound traffic volumes on Belardo Road associated with Villagefest activities (including the closure of Palm Canyon Drive between Amado Road and Baristo Road). The 24-hour directional count data (included in Appendix A) was expanded by 33 percent to reflect peak season conditions. The hourly Wednesday traffic volumes were then subtracted from the hourly Thursday volumes to show the change when Villagefest was underway. Figure 3-7 illustrates the increase in northbound and southbound traffic volumes on Belardo Road by hour during Villagefest.

Belardo Road (south of Amado Road) currently carries 191 vehicles per hour (121 northbound and 70 southbound) in the evening peak hour on a typical weekday in the peak season. However, during Villagefest, Belardo Road (south of Amado Road) carries 602 vehicles per hour (219 northbound and 383 southbound).

Figure 3-4  
Existing Weekday Peak Hour Traffic Volumes

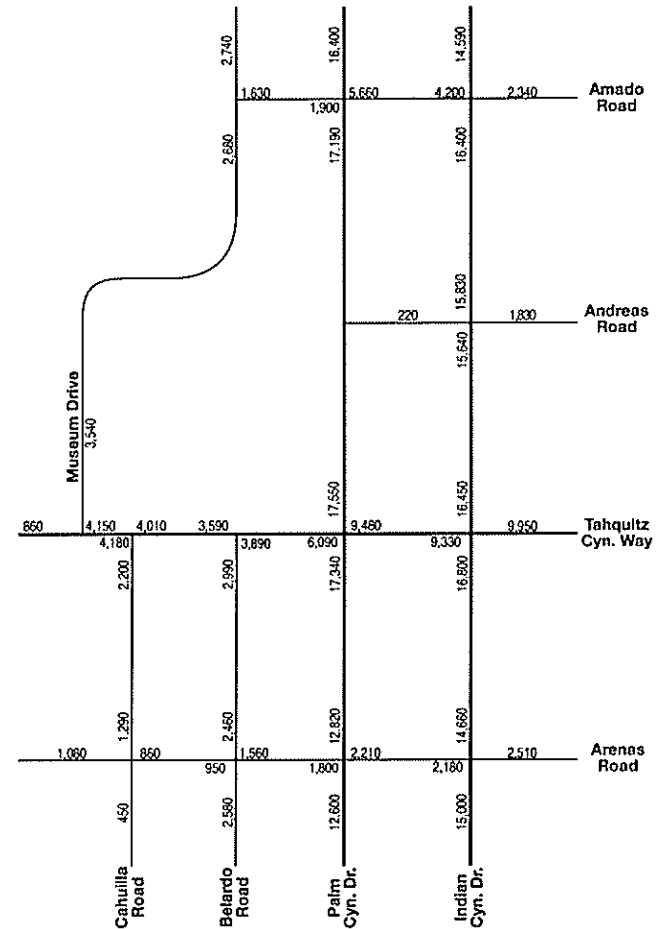


Legend  
 ↕ 5/8 Midday/Evening Peak Hour Turning Volume



Scale: 1" = 500'

Figure 3-5  
Existing Weekday Traffic Volumes  
(Year 2008 Peak Season)



Scale: 1" = 350'



Endo Engineering

Legend
4.5 Evening Peak Hour Turning Volume

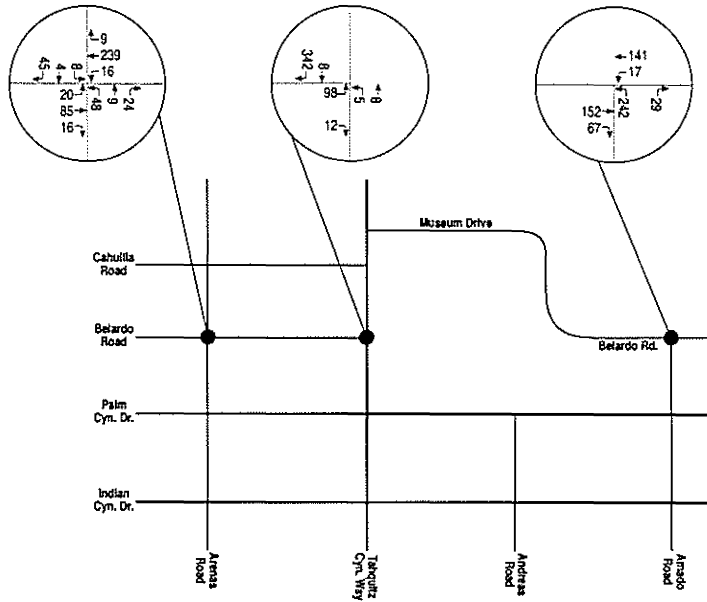


Figure 3-6 Existing Villagetest Highest Hour Traffic Volumes

Scale: 1" = 500'



Endo Engineering

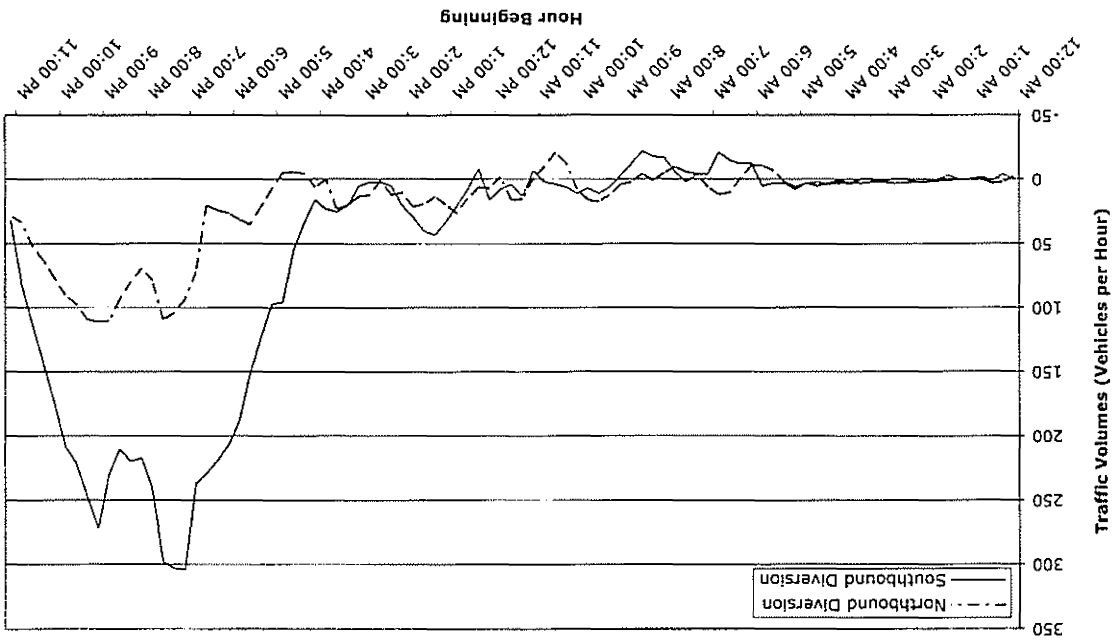


Figure 3-7 Current Traffic Diversion to Belardo Road During Days With Villagetest (Based on 24-Hour Count South of Arado Road on July 10, 2008 Minus July 9, 2008)

Figure 3-7



Table 3-1  
Existing Peak Season Typical Weekday Traffic Volumes<sup>a</sup>

Roadway Link	Peak Season 2008 Weekday Volume Estimate
<b>Amado Road</b>	
- East of Belardo Road	1,630
- West of Palm Cyn. Drive	1,900
- East of Palm Cyn. Drive	5,660
- West of Indian Cyn. Drive	4,200
- East of Indian Cyn. Drive	2,340
<b>Andreas Road</b>	
- West of Indian Canyon Dr.	220
- East of Indian Canyon Dr.	1,830
<b>Tahquitz Canyon Way</b>	
- West of Mission Drive	860
- East of Mission Drive	4,150
- West of Cahuilla Road	4,180
- East of Cahuilla Road	4,010
- West of Belardo Road	3,590
- East of Belardo Road	3,890
- West of Palm Cyn. Drive	6,090
- East of Palm Cyn. Drive	9,480
- West of Indian Cyn. Drive	9,330
- East of Indian Cyn. Drive	9,950
<b>Arenas Road</b>	
- West of Cahuilla Road	1,080
- East of Cahuilla Road	860
- West of Belardo Road	950
- East of Belardo Road	1,560
- West of Palm Cyn. Drive	1,800
- East of Palm Cyn. Drive	2,210
- West of Indian Cyn. Drive	2,180
- East of Indian Cyn. Drive	2,510
<b>Indian Canyon Drive</b>	
- North of Amado Road	14,590
- South of Amado Road	16,400
- North of Andreas Road	15,830
- South of Andreas Road	15,640
- North of Tahquitz Canyon Way	16,450
- South of Tahquitz Canyon Way	16,800
- North of Arenas Road	14,660
- South of Arenas Road	15,000
<b>Palm Canyon Drive</b>	
- North of Amado Road	16,400
- South of Amado Road	17,190
- North of Tahquitz Canyon Way	17,550
- South of Tahquitz Canyon Way	17,340
- North of Arenas Road	12,820
- South of Arenas Road	12,600

a. To estimate the daily volume from the peak hour traffic volumes, it was assumed that 8 percent of the weekday peak hour traffic volume shown in Figure 3-4 occurs during the evening peak hour.

Table 3-1 (Continued)  
Existing Peak Season Typical Weekday Traffic Volumes<sup>a</sup>

Roadway Link	Peak Season 2008 Weekday Volume Estimate
<b>Belardo Road</b>	
- North of Amado Road	2,740
- South of Amado Road	2,680
- South of Tahquitz Canyon Way	2,990
- North of Arenas Road	2,460
- South of Arenas Road	2,580
<b>Cahuilla Road</b>	
- South of Tahquitz Canyon Way	2,200
- North of Arenas Road	1,290
- South of Arenas Road	450
<b>Museum Drive</b>	
- North of Tahquitz Canyon Way	3,540

a. To estimate the daily volume from the peak hour traffic volumes, it was assumed that 8 percent of the weekday peak hour traffic volume shown in Figure 3-4 occurs during the evening peak hour.

The 411 vehicles per hour added to Belardo Road (south of Amado Road) during Villagefest is more than double the volume on a typical weekday. The total volume on Belardo Road during the highest hour of Villagefest is 315 percent of the typical weekday volume in the evening peak hour.

*Traffic Volumes Associated With the Palm Springs Art Museum*

A peak hour manual turning movement traffic count was made on Museum Drive at the Palm Springs Art Museum access. The southbound and northbound through traffic north of the northern Palm Springs Art Museum driveway was identified so that it could be reassigned to the proposed extension of Belardo Road (through the project site) with the Preferred Project.

Museum trips to the north (determined from the traffic counts at the museum driveway) were reassigned to the proposed Museum Way and adjusted to reflect peak season weekday and Saturday conditions, based upon available peak season weekly attendance figures. It was assumed that 25 percent of the weekly museum trips occur on Saturday, with the remaining trips distributed throughout the week. The museum is closed on Mondays. For museum trips, the analysis assumed an average vehicle occupancy of 2.5 visitors per vehicle, and that ten percent of the daily museum trips occur during the peak hour. The museum traffic during the Thursday Villagefest hours was assumed to equal that in the Saturday peak hour, since admission is free during Villagefest.

*Saturday Traffic Volumes*

Saturday conditions were documented with midday traffic counts at five key intersections from 11:00 AM through 1:00 PM. This count period was identified as the highest volume hour on Saturday, based upon the available Saturday traffic count data for the study area. The 24-hour machine traffic counts made from July 9, 2008 through July 12, 2008 were conducted through Saturday to ensure that the highest volume hour is addressed.

Midday peak hour traffic counts were made at the key intersections on Belardo Road and Arenas Road (east of Cahuilla Road) during Saturday, July 12, 2008. The traffic counts are provided in Appendix A and were seasonally corrected (by applying a 33 percent expansion factor). Figure 3-8 illustrates the existing peak season traffic volumes in the midday peak hour on Saturday. The peak hour on the weekends typically occurs on Saturday, between 11:00 a.m. and 1:00 p.m.

Peak season traffic counts were available for both Saturday and weekday peak hours on Palm Canyon Drive and on Indian Canyon Drive at Amado Road and at Tahquitz Canyon Way. The traffic volumes appear to be higher during the Saturday midday peak hour than during the weekday peak hours at the intersections of Palm Canyon Drive with Amado Road and Indian Canyon Drive with Amado Road. However, weekday peak hour volumes at the intersections of Palm Canyon Drive and Indian Canyon Drive with Tahquitz Canyon Way are comparable to the Saturday peak hour counts. Based upon the three-day 24-hour machine counts made on Palm Canyon Drive, the recent Saturday traffic counts were adjusted, as needed, to reflect the highest volume hour in this area.

### 3E. EXISTING LEVELS OF SERVICE

Roadway capacity has been defined as the maximum number of vehicles that can pass over a given roadway during a given time period under prevailing roadway and traffic conditions. By comparison, levels of service are a relative measure of driver satisfaction, with values ranging from A (free flow) to F (forced flow). Levels of service (LOS) reflect a number of factors such as speed and travel time, traffic interruptions, vehicle delay, freedom to maneuver, driver comfort and convenience, and vehicle operating costs. Levels of service do not reflect safety.

An important distinction exists between the concepts of capacity and levels of service. A given lane or roadway may provide a wide range of service levels depending upon traffic volumes and speeds. The design capacity of a roadway (generally defined as the upper limit of LOS D in Palm Springs) is the level at which the facility is handling the maximum traffic volume that it can accommodate while maintaining an acceptable level of driver satisfaction.

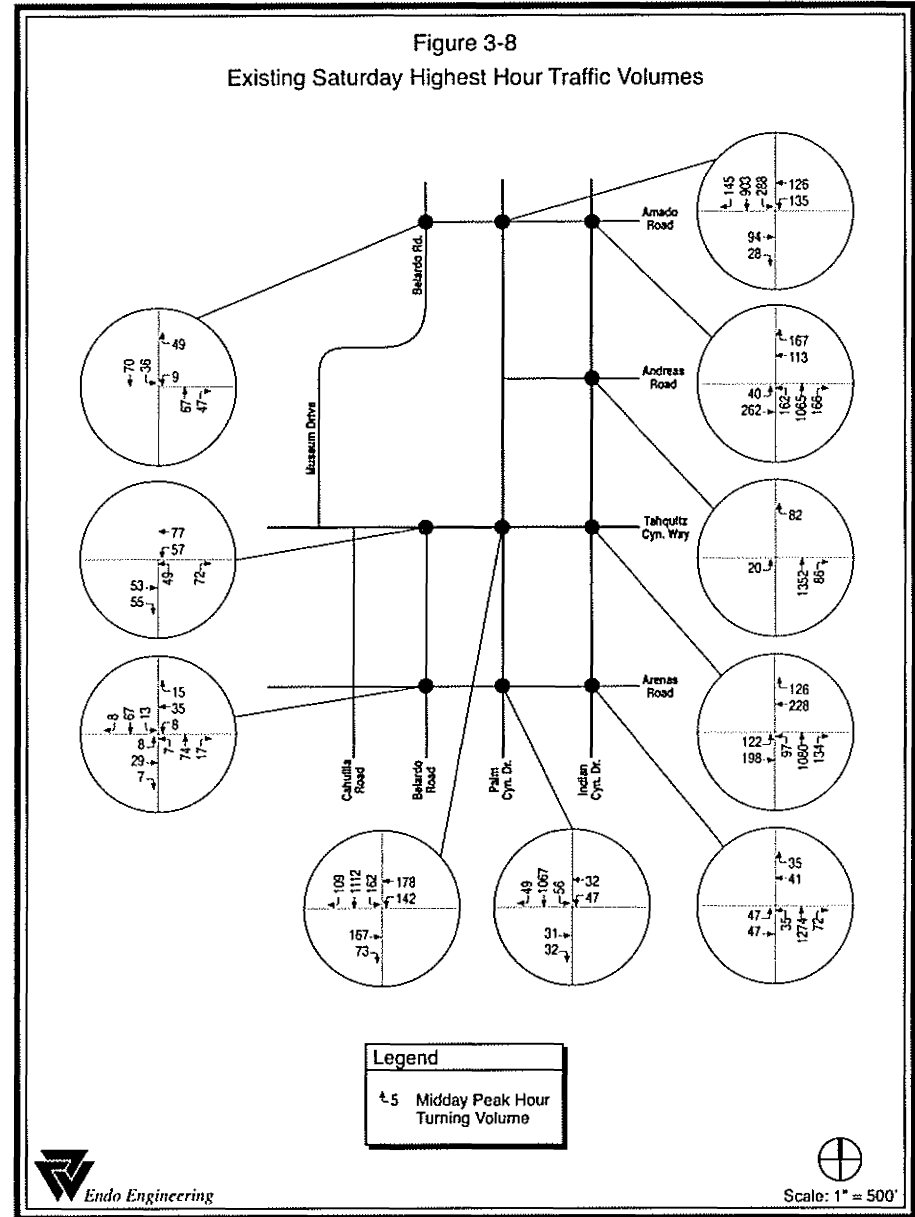
The maximum capacity of a roadway, generally defined at the upper limit of LOS E, is the maximum traffic volume that a roadway can handle. The maximum capacity is determined from roadway factors (such as lane widths, lateral clearance, shoulders, surface conditions, alignment and grades) as well as traffic factors (such as vehicle composition i.e. truck and bus mixture, distribution by lane, peaking characteristics, traffic control devices, intersections, etc.).

Peak hour traffic creates the heaviest demand on the circulation system and the lane configuration at intersections is the limiting factor in roadway capacity. Consequently, peak hour intersection capacity analyses are useful indicators of worst-case conditions.

The latest update of the *Highway Capacity Manual* (HCM 2000) presents the best available techniques for determining capacity, delay, and LOS for transportation facilities.<sup>1</sup> The City of Palm Springs requires the use of the *Highway Capacity Manual* (HCM) methodology to determine the level of service at intersections. The Circulation Element includes as a policy, the provision and maintenance of level of service (LOS) D operation for the City's circulation network, based upon peak hour conditions during the peak season.

1. *Highway Capacity Manual*; Fourth Edition; TRB Report 209; Transportation Research Board, National Research Council; Washington, D.C., 2000.

Figure 3-8  
Existing Saturday Highest Hour Traffic Volumes



The Highway Capacity Software (HCS 2000) package is a direct computerized implementation of the HCM 2000 procedures, prepared under FHWA sponsorship and maintained by the McTrans Center at the University of Florida Transportation Research Center. HCS 2000 Version 4.1c was employed to assess the key intersections in the project vicinity. The relationship between peak hour intersection capacity and levels of service is summarized in Appendix B (see Table B-1 for unsignalized intersections and Table B-2 for signalized intersections).

#### UNSIGNALIZED PEAK HOUR INTERSECTION ANALYSIS

Unsignalized intersections are typically categorized as either two-way stop-controlled (TWSC) intersections, if the minor street is controlled by stop signs, or all-way stop-controlled (AWSC) intersections, if both streets are controlled by stop signs. As shown in Figure 3-1, five of the six unsignalized key intersections are currently two-way stop-controlled. The only key intersection that is all-way stop controlled is Belardo Road at Arenas Road. As discussed below, all of the unsignalized key intersections evaluated are currently operating at levels of service considered acceptable by the City of Palm Springs during: (1) the midday and evening peak hours on typical weekdays, (2) the highest hour (midday peak) on Saturdays, and (3) the highest volume hour on Thursday evenings with Villagefest.

##### *Peak Season Conditions on Typical Weekdays*

At TWSC intersections, the approaches controlled by the stop signs are referred to as the "minor street" approaches. Minor street approaches can be either public streets or private driveways. The intersection approaches that are not controlled by stop signs at TWSC intersections are called the "major street" approaches. The left-turn movement from the minor street is normally the most difficult to execute at a TWSC intersection, because it faces the most complex set of conflicting moves.

The performance measures for unsignalized intersections are: control delay, delay to major street through vehicles, queue length, and volume-to-capacity ratio. However, the level of service is primarily related to the average control delay, which is given in terms of seconds of delay per vehicle by movement and intersection approach. The average control delay for any particular movement is a function of the capacity of the approach and the degree of saturation. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

It should be noted that the HCM 2000 does not define a single overall level of service for unsignalized TWSC intersections as a whole, but rather identifies the LOS for the minor street approaches and the conflicting left-turn movements from the major street. Since the through movements on the major street have no control delay, an evaluation of the approach with the longest average control delay allows the range of delay occurring at the intersection to be identified. Each TWSC intersection is evaluated on an individual basis by the City Engineer, with consideration given to these and other performance measures (such as the delay to the major street through vehicles, the queue length on the minor approach, and the volume-to-capacity ratio) in determining if the intersection meets the City's minimum performance standard or requires mitigation to do so.

Since it is inappropriate to make a definitive determination regarding a single intersection LOS for TWSC intersections, the Palm Springs intersection performance standard (LOS D) does not apply directly to the performance measures quantified by the HCM 2000 methodology for unsignalized intersection operation. However, in those instances where

the levels of service for the minor-street approaches and the conflicting left-turn moves from the major street are operating at LOS D or better levels of service, it may be concluded that a TWSC intersection will meet the Palm Springs intersection performance standard.

The average control delay values and the corresponding levels of service in the peak hours on typical weekdays are provided in Table 3-2 for the unsignalized key intersections. These results assume the existing approach lanes at the intersections (which are shown in Figure 3-9) and an eight percent heavy vehicle mix. As shown in Table 3-2, the left-turn movements from the major streets at all of the intersections with TWSC are currently operating at LOS A during the midday and evening peak hours. The average control delay for the major street left-turn movements currently ranges from 7.3 seconds per vehicle to 7.7 seconds per vehicle in the peak season. The average control delay for the minor-street approach with the most delay at each intersection with TWSC ranges from 9.3 seconds per vehicle (LOS A) to 10.4 seconds per vehicle (LOS B).

Although a single average intersection control delay and LOS are not defined for two-way stop-controlled intersections in the HCM 2000, it may be concluded from the HCS evaluation that current levels of delay at the key intersections with TWSC correspond to LOS B or better operation, which is considered acceptable by the City of Palm Springs. The majority of the motorists at the intersections with TWSC are traveling on the major streets and experience little or no control delay and LOS A operation during the peak hours.

The HCM 2000 procedures for all-way stop-controlled (AWSC) intersections provide the overall intersection average control delay and level of service as well as the average control delay and level of service for each intersection approach and lane group. The approach delay is the weighted average of the lane delays. The overall intersection control delay and LOS as well as the delay and LOS for the approach with the most delay are provided in Table 3-2 for the only key intersection with AWSC (Belardo Road and Arenas Road).

The intersection of Belardo Road at Arenas Road currently operates at LOS A during the midday and evening peak hours on typical weekdays in the peak season. The overall average intersection delay is currently 7.83 seconds per vehicle in the midday peak hour and 7.66 seconds per vehicle in the evening peak hour on typical weekdays. The intersection approach with the most delay during the peak hours (southbound in the midday and northbound in the evening) also operates at LOS A currently.

##### *Peak Season Conditions on Villagefest Thursdays*

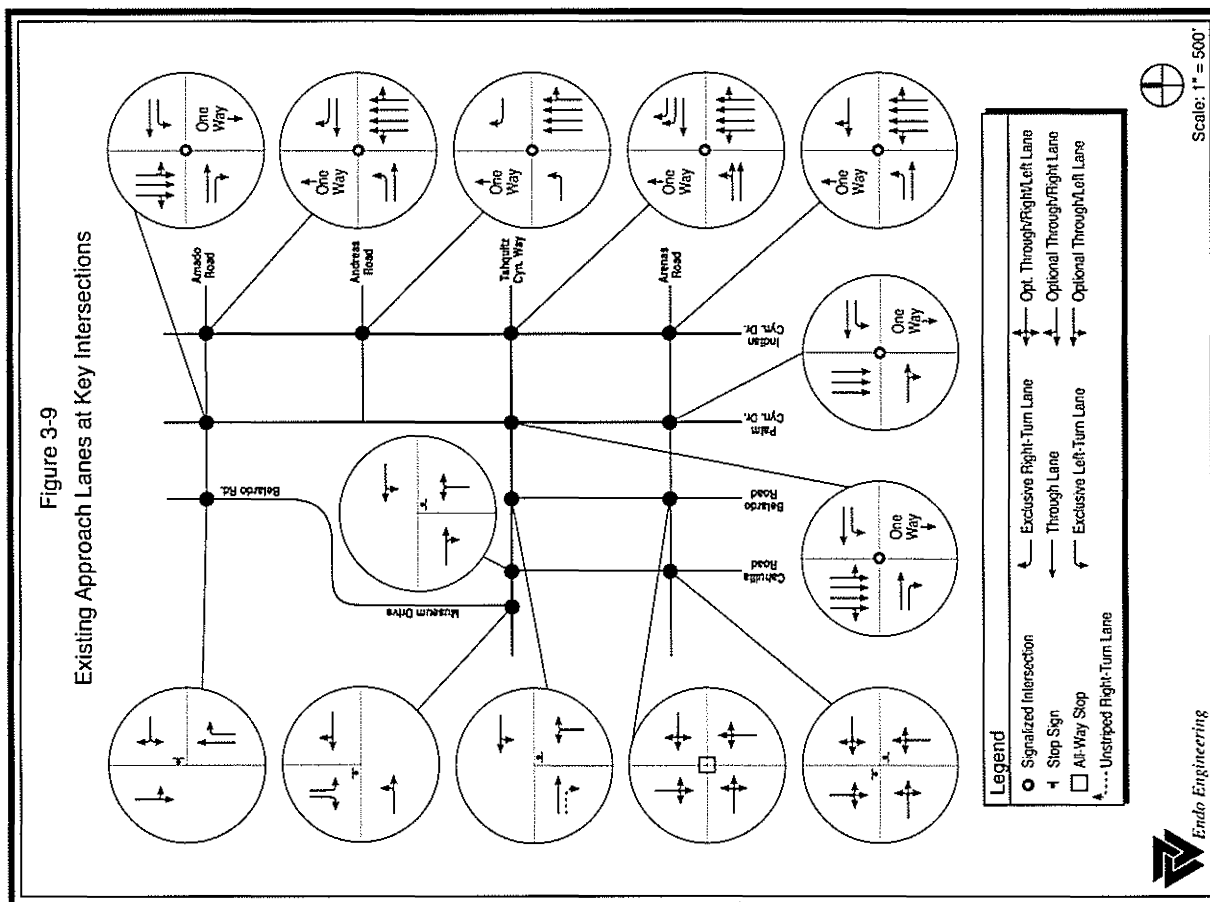
The existing average control delay values and the corresponding levels of service at the unsignalized key intersections along Belardo Road in the evening on Villagefest Thursdays are provided in Table 3-3. The traffic demand on Belardo Road is substantially greater during Villagefest, partially due to the number of people attracted to the area and partly due to the closure of Palm Canyon Drive to southbound traffic during the evening hours on Thursdays to accommodate Villagefest street fair activities.

Belardo Road functions as the major street at the intersection of Amado Road. During the highest volume hour between 6:30 p.m. and 8:30 p.m. on Thursdays with Villagefest, southbound vehicles turning left from Belardo Road onto Amado Road currently experience an average of 7.8 seconds per vehicle of control delay, which corresponds to LOS A operation. Vehicles on the westbound approach (on Amado Road) must stop at Belardo Road before turning left (southbound toward the project site) or right (northbound away from the project site). Westbound vehicles currently experience an average control delay of 14.1 seconds per vehicle, which corresponds to LOS B operation.

**Table 3-2**  
**Existing Weekday Peak Hour Delay and Levels of Service**  
**At The Unsignalized Key Intersections**

Unsignalized Intersection (Reference Number)	Existing Weekday Condition (Year 2008 Peak Season)				
	Left Turn From Major Street		Intersection Approach With The Most Delay		
	Control Delay <sup>a</sup>	Level of Service <sup>b</sup>	Move	Control Delay <sup>c</sup>	Level of Service <sup>b</sup>
Belardo Road @ Amado Road (8) - Morning Peak Hour - Evening Peak Hour	7.6	LOS A	Westbound	9.2	LOS A
	7.6	LOS A	Westbound	9.3	LOS A
Belardo Road @ Tahquitz Cyn. Way (9) - Morning Peak Hour - Evening Peak Hour	7.6	LOS A	Northbound	10.4	LOS B
	7.7	LOS A	Northbound	10.0	LOS A
Belardo Road @ Arenas Road (10) - Morning Peak Hour - Evening Peak Hour	[7.83]	[LOS A]	Southbound	7.90	LOS A
	[7.66]	[LOS A]	Northbound	7.75	LOS A
Cahuilla Road @ Tahquitz Cyn. Way (11) - Morning Peak Hour - Evening Peak Hour	7.7	LOS A	Northbound	10.3	LOS B
	7.5	LOS A	Northbound	9.3	LOS A
Cahuilla Road @ Arenas Road (12) - Morning Peak Hour - Evening Peak Hour	7.3	LOS A	Southbound	9.3	LOS A
	7.3	LOS A	Northbound	9.5	LOS A
Museum Dr. @ Tahquitz Cyn. Way (13) - Morning Peak Hour - Evening Peak Hour	7.6	LOS A	Southbound	10.0	LOS B
	7.4	LOS A	Southbound	9.3	LOS A

- a. Average control delay (seconds/vehicle) for the left-turn move from the major street onto the minor street. Values shown in brackets represent the overall average intersection control delay (seconds/vehicle) and LOS at an intersection with all-way stop control. Assumes intersection geometrics shown in Figure 3-9 and an 8 percent heavy vehicle mix. Appendix B includes the HCS unsignalized intersection worksheets.
- b. LOS was determined from the delay (0-10 sec./veh.=LOS A; 10-15 sec./veh.=LOS B; 15-25 sec./veh.=LOS C; 25-35 sec./veh.=LOS D; 35-50 sec./veh.=LOS E; 50+ sec./veh. = LOS F) per HCM 2000 page 17-2 and 17-32. LOS is not defined for the overall intersection but rather for individual movements and approaches at TWSC intersections.
- c. Delay=average approach control delay (seconds/vehicle) for the intersection approach that exhibits the most delay.



Belardo Road functions as the minor street at the intersection of Tahquitz Canyon Way. Northbound traffic on Belardo Road currently experiences an average control delay of 9.1 seconds per vehicle at the intersection of Tahquitz Canyon Way, which indicates LOS A operation. Similarly, the motorists turning left from Tahquitz Canyon Way onto Belardo Road experience LOS A operation with an average delay of 8.1 seconds per vehicle.

The AWSC intersection of Belardo Road and Arenas Road currently operates at LOS A with an overall average control delay of 7.83 seconds per vehicle. Southbound vehicles on Belardo Road experience the most control delay at this intersection (7.9 seconds per vehicle on average) and experience LOS A operation.

#### Peak Season Conditions on Typical Saturdays

The highest hour traffic volumes on Saturdays occur in the midday between 11:00 a.m. and 1:00 p.m. within the study area. These peak hour traffic volumes were evaluated at the unsignalized key intersections to identify the current levels of service. The existing average approach control delay values and the corresponding levels of service at the unsignalized key intersections in the midday peak hour on a typical Saturday in the peak season are provided in Table 3-4.

As shown in Table 3-4, the intersection approaches with the most delay currently operate at LOS C or better service levels with average control delay ranging from a low of 13.0 seconds per vehicle on (westbound Amado Road at Belardo Road) to 23.2 seconds per vehicle on northbound Belardo Road at Tahquitz Canyon Way. Motorists making left-turn movements from the major street at these intersections experience low levels of control delay and LOS A operation in the midday peak hour on Saturdays currently.

Belardo Road at Arenas Road (an all-way stop-controlled intersection) currently operates at LOS A during the midday peak hour on Saturdays. The southbound motorists on Belardo Road experience LOS A operation during the midday peak hour on Saturdays. The southbound motorists currently experience the most control delay at this intersection.

#### SIGNALIZED INTERSECTION ANALYSIS

The HCM 2000 procedures were utilized via the HCS 2000 software to evaluate the peak hour intersection control delay and levels of service at the signalized key intersections. The parameters assumed for the HCM 2000 evaluation included a saturation flow rate of 1,900 vehicles per hour; a lost time which includes a 3 second clearance interval plus any "all red" time; and the peak hour factor of 1.0. The signal timing assumed for each intersection included ample pedestrian crossing time.

The HCM 2000 methodology addresses the capacity, V/C ratio, and level of service of individual intersection approaches as well as the LOS of the intersection as a whole. The analysis is undertaken in terms of the ratio of demand flow rate to capacity (V/C ratio) for individual movements or approach lane groups during the peak hour and the composite V/C ratio for the sum of the critical movements or lane groups within the intersection. The critical V/C ratio is an indicator of whether or not the physical geometry and signal design provide sufficient capacity for the movements.

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

Table 3-3  
Existing Peak Hour Delay and Levels of Service  
At The Unsignalized Key Intersections On A Villagefest Thursday

Unsignalized Intersection	Villagefest Thursday Condition (Year 2008 Peak Season)				
	Left Turn From Major Street Control Delay <sup>a</sup>	Level of Service <sup>b</sup>	Intersection Approach With The Most Delay Move	Control Delay <sup>c</sup>	Level of Service <sup>b</sup>
Belardo Road @ Amado Road (8) - Evening Peak Hour	7.8	LOS A	Westbound	14.1	LOS B
Belardo Road @ Tahquitz Cyn. Way (9) - Evening Peak Hour	8.1	LOS A	Northbound	9.1	LOS A
Belardo Road @ Arenas Road (10) - Evening Peak Hour	[9.10]	[LOS A]	Southbound	9.76	LOS A

- a. Average control delay (seconds/vehicle) for the left-turn move from the major street onto the minor street. Values shown in brackets represent the overall average intersection control delay (seconds/vehicle) and LOS at an intersection with all-way stop control. Assumes intersection geometrics shown in Figure 3-9 and an 8 percent heavy vehicle mix. Appendix B includes the HCS unsignalized intersection worksheets.
- b. LOS was determined from the delay (0-10 sec/veh=LOS A; 10-15 sec/veh=LOS B; 15-25 sec/veh=LOS C; 25-35 sec/veh=LOS D; 35-50 sec/veh=LOS E; 50+ sec/veh. = LOS F) per HCM 2000 page 17-2 and 17-52. LOS is not defined for the overall intersection but rather for individual movements and approaches at TWSC intersections.
- c. Delay=average approach control delay (seconds/vehicle) for the intersection approach that exhibits the most delay.

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

The measures of effectiveness for signalized intersections are: average control delay per vehicle, critical V/C ratios, and levels of service. The following parameters affect levels of service: (1) V/C ratio; (2) quality of progression; (3) length of green phases; (4) cycle lengths; and (5) average control delay. The level of service is determined from the average control delay for various intersection movements. Average control delay is the total time vehicles are stopped in an intersection approach during a specified time interval divided by the volume departing from the approach during the same time period. It does not include queue follow-up time (i.e. the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position). Delay is a measure of the quality of service to the road user. An intersection cannot operate beyond its capacity indefinitely without motorists experiencing excessive delay. For planning purposes, it is critical that adequate future capacity be provided in terms of geometric design features. Delay may be improved significantly through coordination of signals and improved signal design.

#### Peak Season Conditions on Typical Weekdays

Table 3-5 summarizes the existing intersection control delay and corresponding levels of service at the signalized key intersections evaluated. An eight percent truck mix was assumed to determine the intersection control delay and levels of service in Table 3-5. The intersection approach lanes that were assumed are shown in Figure 3-9.

#### Peak Season Conditions on Villagefest Thursdays

None of the key intersections along Belardo Road are currently signalized. Therefore, conditions on Villagefest Thursday evenings were not included in Table 3-6.

#### Peak Season Conditions on Typical Saturdays

All of the signalized key intersections currently operate at acceptable levels of service during the midday peak hour on Saturdays, as shown in Table 3-6. Three of the signalized key intersections currently operate at LOS B and three currently operate at LOS A in the midday peak hour. During the midday peak hour on Saturdays, one of the signalized key intersections (Indian Canyon Drive at Tahquitz Canyon Way) currently operates at LOS C. The average control delay at this intersection is currently 26.0 seconds per vehicle during the midday peak hour.

### 3E. TRANSIT SERVICE

Twelve SunBus transit lines provide public bus service with a fleet of 27 buses throughout the Coachella Valley seven days a week (excluding Thanksgiving and Christmas). There are three SunBus lines through the study area. Line 111 is the major trunk line, which is interconnected with eleven smaller community feeder routes that provide access to every community in the Valley. Buses on line 111 enter the study area by traveling west on Tahquitz Canyon Way and travel north on Indian Canyon Drive. Line 111 also extends along Palm Canyon Drive with a major stop at Baristo Road.

Table 3-4  
Existing Saturday Peak Hour Delay and Levels of Service  
At The Unsignalized Key Intersections

Unsignalized Intersection	Typical Saturday Condition (Year 2008 Peak Season)		
	Left Turn From Major Street Control Delay <sup>a</sup> Level of Service <sup>b</sup>	Intersection Approach With The Most Delay Move	Control Delay <sup>a</sup> Level of Service <sup>b</sup>
Belardo Road @ Amado Road (8) - Midday Peak Hour	8.1	Westbound	13.0
Belardo Road @ Tahquitz Cyn. Way (9) - Midday Peak Hour	8.6	Northbound	23.2
Belardo Road @ Arcas Road (10) - Midday Peak Hour	[8.42]	Southbound	8.59

- a. Average control delay (seconds/vehicle) for the left-turn move from the major street onto the minor street at intersections with TWSC. Values shown in brackets represent the overall average intersection control delay (seconds/vehicle) and LOS at an intersection with all-way stop control. Assumes intersection geometrics shown in Figure 3-9 and an 8 percent heavy vehicle mix. Appendix B includes the HCS unsignalized intersection worksheets.
- b. LOS was determined from the delay (0-10 sec/Veh=LOS A; 10-15 sec/Veh=LOS B; 15-25 sec/Veh=LOS C; 25-35 sec/Veh=LOS D; 35-50 sec/Veh=LOS E; 50+ sec/Veh. = LOS F) per HCM 2000 page 17-2 and 17-32. LOS is not defined for the overall intersection but rather for individual movements and approaches at TWSC intersections.
- c. Delay=average approach control delay (seconds/vehicle) for the intersection approach that exhibits the most delay.

**Table 3-5  
Existing Signalized Intersection  
Peak Hour Delay and LOS Summary<sup>a</sup>  
(Year 2008 Peak Season)**

Intersection (Reference Number)	Mid-Day Peak Hour		Evening Peak Hour	
	Delay <sup>b</sup> (Sec./Veh.)	V/C Ratio (LOS)	Delay <sup>b</sup> (Sec./Veh.)	V/C Ratio (LOS)
<b>TYPICAL WEEKDAY</b>				
<b>Indian Canyon Drive @</b>				
- Amado Road (1)	5.8	0.31 (A)	5.5	0.29 (A)
- Andreas Road (2)	3.4	0.23 (A)	3.1	0.22 (A)
- Tahquitz Canyon Way (3)	18.0	0.57 (B)	17.4	0.57 (B)
- Arenas Road (4)	6.2	0.27 (A)	6.3	0.24 (A)
<b>Palm Canyon Drive @</b>				
- Amado Road (5)	9.3	0.52 (A)	7.7	0.36 (A)
- Tahquitz Canyon Way (6)	15.2	0.51 (B)	17.4	0.55 (B)
- Arenas Road (7)	6.0	0.31 (A)	6.3	0.24 (A)
<b>SATURDAY</b>				
<b>Indian Canyon Drive @</b>				
- Amado Road (1)	10.3	0.55 (B)	-	-
- Andreas Road (2)	3.7	0.35 (A)	-	-
- Tahquitz Canyon Way (3)	26.0	0.82 (C)	-	-
- Arenas Road (4)	7.5	0.48 (A)	-	-
<b>Palm Canyon Drive @</b>				
- Amado Road (5)	11.8	0.67 (B)	-	-
- Tahquitz Canyon Way (6)	19.4	0.73 (B)	-	-
- Arenas Road (7)	7.0	0.49 (A)	-	-

a. Based upon the 2000 *Highway Capacity Manual* Signalized Operation Methodology implemented by the latest release (Version 4.1e) of the Highway Capacity Software (HCS 2000). LOS is the intersection level of service. LOS was determined from the delay ( $\leq 10$  sec./veh.=LOS A;  $>10$  and  $\leq 20$  sec./veh.=LOS B;  $>20$  and  $\leq 35$  sec./veh.=LOS C;  $>35$  and  $\leq 55$  sec./veh.=LOS D;  $>55$  and  $\leq 80$  sec./veh.=LOS E;  $>80$  sec./veh. = LOS F) per 2000 HCM page 10-16. See Appendix B for the signalized intersection HCS worksheets.

Both SunBus Line 14 and Line 30 extend through the study area on Tahquitz Canyon Way and south along Palm Canyon Drive. Transit service is provided between 6:00 a.m. and 10:00 p.m. Sunline Transit has bicycle racks on every bus in its fleet. These bike racks can carry up to two bicycles per bus.

### 3G. OTHER MODES OF TRANSPORTATION

#### PEDESTRIAN FACILITIES

Pedestrian facilities include sidewalks, crosswalks, traffic control features, special walkways, curb cuts and ramps for older pedestrians and people with mobility

impairments. They may also be associated with transit stops or other loading areas, stairs, elevators, escalators, and grade separations.

AASHTO recommends in A Policy on the Geometric Design of Highways and Streets (Fourth Edition; 2001) that the number of pedestrian crossings on heavily traveled arterials be kept to a minimum. However, in and near business districts, pedestrians are critical to the viability of entertainment and commercial/retail developments within urban core areas. It is usually necessary, therefore, to provide crosswalks at every intersecting street in urban core areas.

Within the study area, there are crosswalks today at nearly every key intersection (except Cabuilla Road at Arenas Road). Pedestrian crosswalks exist on Palm Canyon Drive north of Andreas Road and on Palm Canyon Drive south of Andreas Road (with a traffic control signal). Crosswalks currently exist at the key intersections within the study area as follows:

1. Indian Canyon Drive at Amado Road (on all four legs);
2. Indian Canyon Drive at Andreas Road (on all but the north leg);
3. Indian Canyon Drive at Tahquitz Canyon Way (on all four legs);
4. Indian Canyon Drive at Arenas Road (on all four legs);
5. Palm Canyon Drive at Amado Road (on all four legs);
6. Palm Canyon Drive at Tahquitz Canyon Way (on all four legs);
7. Palm Canyon Drive at Arenas Road (on all four legs);
8. Belardo Road at Amado Road (on the north and east legs);
9. Belardo Road at Tahquitz Canyon Way (on the south leg);
10. Belardo Road at Arenas Road (on the north leg);
11. Cabuilla Road at Tahquitz Canyon Way (on the south leg); and
13. Museum Drive at Tahquitz Canyon Way (on the north leg).

Although proper and reasonable design for pedestrians is important, it can be difficult to make adequate provisions for pedestrians, given the demands of vehicular traffic in intensely developed urban core areas. However, the most successful shopping areas are often those that provide the most comfort and pleasure for pedestrians. That is likely the case because the typical pedestrian is a shopper nearly 50 percent of the time that they are a pedestrian and a commuter only eleven percent of the time.

Pedestrians tend to take the shortest route between two points. They often cross mid-block and fail to stay in crosswalks along streets. They resist changes in grade or elevation and tend to avoid underpass (potential crime areas) and overpass facilities (as climbing stairs requires much more effort). Pedestrian volumes tend to peak in the midday, rather than during the morning or evening peak commuter hours. Since vehicular traffic in Palm Springs also peaks in the midday, it will be particularly important to design facilities for the safe and orderly movement of pedestrians.

Approximately 80 percent of the distances traveled by pedestrians will be less than 1.0 kilometer. Pedestrians will most likely not be willing to walk more than 1.5 kilometers to work or more than 1.0 kilometer to catch a bus. Age is an important consideration in design, as the elderly may be affected by limitations in sensory, perceptual, cognitive, and/or motor skills brought on by the aging process.

#### EXISTING BIKEWAY FACILITIES

Bikeways and pathways are used by a wide variety of people including children on their way to school, commuters cycling to work, and people exercising, racing or touring.

While recreational riders seek routes leading to parks, through areas of interest, or racing circuits, commuters want the shortest, fastest, and safest route between two points.

The Coachella Valley Association of Governments *Non-Motorized Transportation Plan* (October, 2001) identifies existing and proposed non-motorized facilities within the project vicinity. The Coachella Valley Regional Bikeway Plan identifies regionally significant routes that link important destinations across jurisdictional boundaries. These routes are competitive candidates for joint funding applications among cities and/or the County of Riverside. The Coachella Valley Regional Bikeway Plan includes an existing regional Class III bikeway along Indian Canyon Drive that extends the length of the study area.

Class I bikeways offer a paved right-of-way completely separated from any street or highway for bicycle travel. There are no existing Class I bike routes within the study area.

Class II bikeways are often called bike lanes because they provide an unprotected striped or stenciled lane for one-way travel (preferably 6 feet wide) on a street or highway for shared use with motor vehicle traffic and signing. A Class II bikeway extends across the study area along Palm Canyon Drive, Amado Road (between Belardo Road and Palm Canyon Drive), Belardo Road (south of Amado Road), Museum Drive (south of Belardo Road), Tahquitz Canyon Way (east of Museum Drive), and Belardo Road (south of Tahquitz Canyon Way).

Class III bikeways are also referred to as bike routes. They provide for shared use with pedestrian or motor vehicle traffic and are identified only by signing. Class III bikeways include any type of bikeway, including streets signed as bikeways but offering no other accommodations for bicycles. There are existing Class III bike routes in the study area along Palm Canyon Drive, south of Amado Road, along Indian Canyon Drive, along Belardo Road, north of Amado Road, and along Arenas Road. There are several bicycle parking facilities and activity centers scattered throughout the study area.

#### PROPOSED BIKEWAY FACILITIES

The City of Palm Springs has identified thirteen Class I projects, seven Class II projects, three projects designated as either Class II or III, and four Class III projects for inclusion in the CVAG "Non-Motorized Transportation Plan" (October 2001). Class I projects are estimated to cost \$500,000 per mile. Costs for Class II projects are estimated at \$50,000 per mile. Class III projects are estimated to cost \$10,000 per mile. The City of Palm Springs has identified Palm Canyon Drive and Indian Canyon Drive for future Class I Bikeways.

Caltrans standards are used to design bikeways by most jurisdictions throughout California. These standards apply to three different classifications of bicycle facilities: Class I, Class II, and Class III bikeways. The City of Palm Springs adheres to Caltrans bikeway standards.

## 4. CIRCULATION IMPACT ANALYSIS

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### FUTURE SITE DEVELOPMENT ALTERNATIVES ADDRESSED

The traffic analysis summarized below evaluates conditions at the key intersections with five different development plans in the future planning horizon year (2030). Future conditions were evaluated at the same level of detail for the Preferred Project and each development alternative to establish whether or not mitigation would be required to achieve the City of Palm Springs minimum peak hour intersection performance standard of LOS D. The site development alternatives evaluated included:

- the Preferred Project;
- the No-Project Alternative;
- the Preserve Town & Country Center Alternative;
- Less-Intense Alternative A; and
- Less-Intense Alternative B.

### FUTURE ON-SITE ROADWAYS ADDRESSED

With the exception of the No-Project Alternative, each site development alternative would include an internal circulation system that is different than the existing on-site roadways. With the exception of the No-Project Alternative, each site development alternative would vacate the existing portion of Belardo Road/Museum Drive between the northerly access driveway to the Desert Art Museum parking lot and the proposed extension of Belardo Road through the project site to Tahquitz Canyon Way.

The Preferred Project and Less-Intense Alternative B would extend Belardo Road directly across the site, from the northern site boundary to Tahquitz Canyon Way, and provide a new local east/west street (Museum Way) from Museum Drive east across the site to Indian Canyon Drive. Museum Way would be located approximately 400 feet north of Tahquitz Canyon Way and 250 feet south of Andreas Road.

The Preserve Town & Country Center Alternative would provide the same internal circulation system as the Preferred Project and Alternative B with one exception. Museum Way would not extend from Palm Canyon Drive to Indian Canyon Drive with this alternative.

Less-Intense Alternative A would include the new Belardo Road extension across the site but with a curvilinear alignment between Andreas Road and Tahquitz Canyon Way to accommodate a park in the center of the core area. Museum Way would extend between Museum Drive and Belardo Road with this alternative. However, Andreas Road would be extended west from Palm Canyon Drive to the new alignment of Belardo Road as a new local east/west street.

### FUTURE SCENARIOS ANALYZED

Peak season year 2030+cumulative+project build out traffic volumes were evaluated for the following scenarios:

- the midday and evening peak hours on a typical weekday;
- the evening peak hour (between 6:30 PM-8:30 PM) on a Villagefest Thursday; and
- the highest hour (between 11:00 AM and 1:00 PM) on a typical Saturday.



The traffic analysis herein evaluates the traffic associated with the project site as well as additional traffic from fifteen cumulative developments identified, and incorporates the traffic projections developed by the 2005 *Palm Springs General Plan* traffic model. The list of cumulative developments was determined through coordination with the City of Palm Springs. The traffic associated with the Preferred Project and each project alternative was projected assuming the circulation network that was proposed for each development alternative.

With the Preferred Project and all development alternatives except the No-Project Alternative, site traffic volumes using the existing roadway network would access the site via a modified circulation network in the future. The traffic count data included the site traffic associated with the currently occupied portion of the existing development on-site. Traffic associated with the existing on-site development was removed from the existing traffic volumes at the key intersections, prior to the addition of the project-related traffic associated with each development alternative. This step was necessary to accurately model the development alternatives that would incorporate a modified circulation system on-site.

Other than the localized traffic increases generated by the fifteen cumulative projects addressed explicitly herein, regional cumulative traffic increases were addressed with the traffic growth forecasts developed by assuming a constant growth rate between the existing traffic volumes and the year 2030 traffic projections. A ten percent growth in existing traffic volumes was assumed as a minimum in those instances where General Plan build out 2030 traffic projections were either not available or were less than the current traffic volumes on a roadway.

In most cases, the General Plan build out traffic projection was exceeded by the sum of the existing traffic volume (plus 10 percent), the project-related traffic volume, and the cumulative traffic volume. At a few locations (e.g. Palm Canyon Drive and Indian Canyon Drive near Arenas Road), the General Plan build out traffic volume exceeded the sum of traffic volumes from known development. At these locations, the ambient traffic volume (without site traffic) was estimated by subtracting the traffic volume associated with development on-site per the No-Project Alternative (which assumed full occupancy of the existing development and development of vacant Block L per the existing zoning) from the General Plan build out traffic volume.

The typical weekday midday and evening peak hour analysis addressed thirteen existing key intersections as well as the proposed internal intersections. The Thursday evening Villagefest analysis addressed the existing key intersections along Belardo Road as well as the proposed on-site intersections along Belardo Road. The typical Saturday analysis addressed the existing key intersections and the proposed on-site intersections along Belardo Road, Palm Canyon Drive, and Indian Canyon Drive.

From October to May, Villagefest occurs every Thursday, between 6:00 p.m. and 10:00 p.m.. Even before 6:00 p.m., the cross streets providing access to Palm Canyon Drive begin to close in preparation for Villagefest. To address the traffic impacts associated with the project site on Villagefest days, the weekday evening peak hour trip generation was assumed for the project site. Cumulative traffic passing through the study area on Palm Canyon Drive on typical weekdays was assumed to divert to Belardo Road, between Amado Road and Arenas Road on Villagefest Thursdays. Cumulative traffic on Palm Canyon Drive destined for Tahquitz Canyon Way was assumed to divert to the east along Amado Road on Villagefest Thursdays.

The 2030 Saturday traffic projections included Saturday trip generation estimates for the proposed project and the fifteen cumulative projects. General Plan build out projections for Saturdays were estimated for each intersection by multiplying the General Plan build out weekday volumes by the ratio of midday peak hour Saturday volumes to midday weekday peak hour volumes.

#### **4A. SITE TRAFFIC**

The Institute of Transportation Engineers (ITE) report *Trip Generation* is the principal source of trip-generation rates used in site traffic analyses. Detailed data are provided therein for vehicular trips with "average" vehicle occupancy. The ITE *Trip Generation* database is updated periodically, with the latest revision (7th Edition; 2003) utilized herein to project the trip generation associated with the proposed development.

The recommended procedures and guiding principles outlined in the ITE *Trip Generation Handbook* (March 2001) were followed in selecting the independent variables and time periods for analysis as well as the use of the regression equations versus the weighted average trip generation rates. In addition, the procedures recommended by the ITE for estimating the trip generation at multi-use sites were employed with conservative estimates of internal trip making, as discussed below.

#### **TRIP GENERATION ASSOCIATED WITH THE PROJECT SITE**

##### ***Existing Site Traffic***

Table 4-1 provides the peak hour and daily trip generation forecast associated the existing land uses, the Preferred Project and with each of the development alternatives. The existing Town & Country Center development on-site includes 50,977 square feet of commercial floor space (occupied by retail, restaurant, and office uses) which generates approximately 4,380 trip-ends on a typical weekday. During the midday peak hour it is estimated that 143 vehicles enter and 160 vehicles depart from the Town & Country Center. During the evening peak hour on typical weekdays, 193 vehicles enter and 209 vehicles depart from the Town & Country Center.

Although the Desert Fashion Plaza has entitlements for 330,000 square feet of retail development, only 12 percent of that space is currently leased. The only portion of the Desert Fashion Plaza that is currently occupied is located adjacent to Palm Canyon Drive. There are currently a substantial number of parking spaces available on-site in parking structures located along Tahquitz Canyon Way and Museum Drive. In addition, Block J is a surface parking lot today. Block L is vacant and generates no traffic.

With approximately 39,643 square feet of commercial floor space occupied, the Desert Fashion Plaza currently generates approximately 3,720 trip-ends on a typical weekday. The number of inbound and outbound vehicles in the peak hours is relatively balanced with 121 inbound and 135 outbound in the midday peak hour and 164 inbound and 177 outbound in the evening peak hour.

The weekday trip generation associated with the currently occupied land uses on-site within the Town & Country Center and the Desert Fashion Plaza totals approximately 8,100 trip-ends. Of that total, 559 occur during the midday peak hour (264 inbound and 295 outbound) and 743 would occur during the evening peak hour (357 inbound and 386 outbound).

Table 4-1  
Site Trip-Generation Forecast By Alternative<sup>a</sup>

Land Use Category (ITE Code)	Land Use Quantity <sup>b</sup>	Midday Peak Hour			PM Peak Hour			Daily 2-Way
		In	Out	Total	In	Out	Total	
<b>EXISTING LAND USE</b>								
<b>Weekday</b>								
Town & Country (820)	50,977 TSF	143	160	303	193	209	402	4,380
Desert Fash. Plaza (820)	39,643 TSF	121	135	256	164	177	341	3,720
<b>Total</b>		<b>264</b>	<b>295</b>	<b>559</b>	<b>357</b>	<b>386</b>	<b>743</b>	<b>8,100</b>
<b>Saturday</b>								
Town & Country (820)	50,977 TSF	290	268	558	-	-	-	6,040
Desert Fash. Plaza (820)	39,643 TSF	247	228	475	-	-	-	5,160
<b>Total</b>		<b>537</b>	<b>496</b>	<b>1,033</b>	-	-	-	<b>11,200</b>
<b>NO-PROJECT ALT.</b>								
<b>Weekday</b>								
Town & Country (820)	50,977 TSF	143	160	303	193	209	402	4,380
Desert Fash. Plaza (820)	330 TSF	759	597	1,356	663	718	1,381	14,760
Hotel (310)	45 Room	15	10	25	14	12	26	370
<b>Total</b>		<b>917</b>	<b>767</b>	<b>1,684</b>	<b>870</b>	<b>939</b>	<b>1,809</b>	<b>19,510</b>
<b>Saturday</b>								
Town & Country (820)	50,977 TSF	978	903	1,881	-	-	-	19,600
Desert Fash. Plaza (820)	330 TSF	290	268	558	-	-	-	6,040
Hotel (310)	45 Room	18	14	32	-	-	-	370
<b>Total</b>		<b>1,286</b>	<b>1,185</b>	<b>2,439</b>	-	-	-	<b>26,010</b>
<b>PREFERRED PROJECT</b>								
<b>Weekday</b>								
General Office (710)	100 TSF	165	23	188	32	158	190	1,330
Commercial (820)	300 TSF	712	561	1,273	622	674	1,296	13,870
Hotel (310)	620 Room	177	145	322	194	172	366	5,180
HRMFA (232)	955 DU	50	245	295	199	122	321	3,620
<b>Total</b>		<b>1,104</b>	<b>974</b>	<b>2,078</b>	<b>1,047</b>	<b>1,126</b>	<b>2,173</b>	<b>24,000</b>
<b>Saturday</b>								
General Office (710)	100 TSF	22	19	41	-	-	-	240
Commercial (820)	300 TSF	919	849	1,768	-	-	-	18,460
Hotel (310)	620 Room	250	196	446	-	-	-	5,080
HRMFA (232)	955 DU	129	170	299	-	-	-	3,740
<b>Total</b>		<b>1,320</b>	<b>1,234</b>	<b>2,554</b>	-	-	-	<b>27,520</b>

a. Based upon trip generation data published by the ITE in *Trip Generation* (7th Edition December 2003). For the Preferred Project and all alternatives, the trip generation rates for the morning "peak hour of the generator" were utilized to forecast the midday peak hour trip generation associated with the hotel and multi-family attached residential land uses. Since the proposed number of hotel units was outside of the plotted range associated with the ITE's peak hour trip generation data for hotels, the weighted average ITE trip generation rates for hotels were used.

b. TSF=Thousand square feet of building floor area. Rooms=Hotel rooms. DU=Dwelling Units.

Table 4-1 (Continued)  
Site Trip-Generation Forecast By Alternative

Land Use Category (ITE Code)	Land Use Quantity <sup>a</sup>	Midday Peak Hour			PM Peak Hour			Daily 2-Way
		In	Out	Total	In	Out	Total	
<b>PRESERVE T&amp;C ALT.</b>								
<b>Weekday</b>								
HRMFA (232)	900 DU	50	245	295	199	122	321	3,620
General Office (710)	100 TSF	165	23	188	32	158	190	1,330
Commercial (820)	295 TSF	833	655	1,488	727	788	1,515	16,170
Commercial (820)	34.39 TSF	110	123	233	149	161	310	3,390
Hotel (310)	420 Room	95	78	173	114	101	215	2,890
<b>Total</b>		<b>1,136</b>	<b>1,033</b>	<b>2,169</b>	<b>1,126</b>	<b>1,224</b>	<b>2,350</b>	<b>25,450</b>
<b>Saturday</b>								
HRMFA (232)	900 DU	129	170	299	-	-	-	3,740
General Office (710)	100 TSF	22	19	41	-	-	-	240
Commercial (820)	295 TSF	909	839	1,748	-	-	-	18,270
Commercial (820)	34.39 TSF	225	208	433	-	-	-	4,720
Hotel (310)	420 Room	169	133	302	-	-	-	3,440
<b>Total</b>		<b>1,454</b>	<b>1,369</b>	<b>2,823</b>	-	-	-	<b>30,410</b>
<b>LESS-INTENSE ALT. A</b>								
<b>Weekday</b>								
Commercial (820)	186.5 TSF	521	410	931	455	493	948	10,180
Commercial (820)	34.39 TSF	110	123	233	149	161	310	3,390
General Office (710)	40 TSF	79	11	90	21	103	124	660
Cinema (443)	68 TSF	98	98	196	394	25	419	5,310
HRMFA (232)	120 DU	10	51	61	35	21	56	680
<b>Total</b>		<b>818</b>	<b>693</b>	<b>1,511</b>	<b>1,054</b>	<b>803</b>	<b>1,857</b>	<b>20,220</b>
<b>Saturday</b>								
Commercial (820)	186.5 TSF	675	623	1,298	-	-	-	13,680
Commercial (820)	34.39 TSF	225	208	433	-	-	-	4,720
General Office (710)	40 TSF	9	8	17	-	-	-	90
Cinema (443)	68 TSF	240	80	320	-	-	-	6,750
HRMFA (232)	120 DU	28	37	65	-	-	-	670
<b>Total</b>		<b>1,177</b>	<b>956</b>	<b>2,133</b>	-	-	-	<b>25,910</b>
<b>LESS-INTENSE ALT. B</b>								
<b>Weekday</b>								
Commercial (820)	300 TSF	712	561	1,273	622	674	1,296	13,870
Hotel (310)	255 Room	73	60	133	80	71	151	1,910
HRMFA (232)	765 DU	43	212	255	171	105	276	3,110
<b>Total</b>		<b>828</b>	<b>833</b>	<b>1,661</b>	<b>873</b>	<b>850</b>	<b>1,723</b>	<b>18,890</b>
<b>Saturday</b>								
Commercial (820)	300 TSF	919	849	1,768	-	-	-	18,460
Hotel (310)	255 Room	103	81	184	-	-	-	2,090
HRMFA (232)	765 DU	111	147	258	-	-	-	3,210
<b>Total</b>		<b>1,133</b>	<b>1,077</b>	<b>2,210</b>	-	-	-	<b>23,760</b>

a. TSF=Thousand square feet of building floor area. Rooms=Hotel rooms. DU=Dwelling Units.

On Thursday evenings when Villagefest is occurring, the occupied land uses on-site were assumed to generate the same number of trips as they would during the evening peak hour on a typical weekday (as shown in Table 4-1). The evening peak hour evaluated with Villagefest (between 6:30 PM and 8:30 PM) was later than the peak hour on a typical weekday when commercial centers generate the most traffic (5:00 PM-6:00 PM). However, the Villagefest activities most likely attract more customers to the area on Thursday evenings than frequent the project site on a typical weekday evening. Therefore, the number of retail trip-ends generated on-site during the highest hour on Thursdays between 6:30 PM and 8:30 PM was assumed to be equivalent to the number of trip-ends generated on-site on a typical weekday between 5:00 PM-6:00 PM.

Commercial centers generate more traffic on Saturdays than on weekdays. As shown in Table 4-1, the trip generation associated with the currently occupied land uses on-site totals approximately 11,200 Saturday trip-ends, of which 1,033 trip-ends occur during the midday peak hour (with 537 inbound and 496 outbound).

The traffic count data collected along the roadways and at the intersections within the study area includes the traffic volumes generated by the currently occupied land uses within the project site. Therefore, future development alternatives which require a portion of or all of the existing land uses on-site to be removed would also remove the traffic volumes being generated by those occupied land uses from the surrounding streets and key intersections.

#### *Trip Generation Forecast By Alternative*

The major use in a shopping center is retail selling. Typically over 80 percent of a shopping center's gross leasable area is devoted to this use. Although a shopping center is considered by some to be a multi-use development, the ITE has collected data for shopping centers and considers them a single land use. While site specific conditions, like the availability of transit and walk-in traffic, can result in different vehicular trip-generation rates, making adjustments for small differences in auto occupancy or transit use is questionable, given the precision in the measurement of the ITE trip-generation rates for shopping centers and the variation in traffic volumes which occur from day to day.<sup>1</sup>

#### *The No-Project Alternative*

The No-Project Alternative would renovate the existing on-site development and construct a 45-room hotel on Block L, as permitted under the existing General Plan and Zoning designations. With the No-Project Alternative, the Desert Fashion Plaza would be reoccupied with 330,000 square feet of retail development and the Town & Country Center would remain unchanged (with no buildings removed).

As shown in Table 4-1, the No-Project Alternative would generate approximately 19,510 trip-ends on a typical weekday. In the midday peak hour on a typical weekday 1,684 trip-ends would be generated (917 entering the site and 767 leaving the site). During the evening peak hour on a typical weekday 1,809 trip-ends would be generated (870 entering the site and 939 leaving the site). The analysis for Villagefest (Thursday evening) assumed the weekday evening trip generation rates for the peak hour of the adjacent streets.

During the midday peak hour on a Saturday, the No-Project Alternative would generate 2,439 trip-ends (1,286 entering and 1,153 departing the site). Upon full occupancy, the No-Project Alternative would generate 26,010 trip-ends on a typical Saturday.

1. ITE: *Transportation and Land Development*; 1988.

#### *The Preferred Project*

The Preferred Project would replace the existing on-site development with the proposed land uses. In doing so, it would eliminate the Town & Country Center to facilitate the construction of Museum Way and other new elements of the development. The Preferred Project would generate approximately 24,000 trip-ends on a typical weekday, 4,490 more than the No-Project Alternative. In the midday peak hour on a typical weekday 2,078 trip-ends would be generated (1,104 entering the site and 974 leaving the site). During the evening peak hour on a typical weekday 2,173 trip-ends would be generated (1,047 entering the site and 1,126 leaving the site). The analysis for Villagefest (Thursday evening) assumed the weekday evening trip generation rates for the peak hour of the adjacent streets.

During the midday peak hour on a Saturday, the Preferred Project would generate 2,554 trip-ends (1,320 entering and 1,234 departing the site). Upon full occupancy, the Preferred Project would generate 27,520 trip-ends on a typical Saturday (1,510 trip-ends more than the No-Project Alternative).

#### *The Preserve Town & Country Center Alternative*

The Preserve Town & Country Center Alternative would be similar to the Preferred Project, but retain and rehabilitate the Town & Country Center (except for the removal of the old Bank of America building). With 25,450 trip-ends generated on a typical weekday, The Preserve Town & Country Center Alternative would generate more traffic than the other development alternatives. This alternative would generate approximately 1,450 trip-ends more than the Preferred Project on a typical weekday. It is estimated that 2,169 trip-ends would be generated during the midday peak hour on weekdays and 2,350 trip-ends would be generated during the evening peak hour on weekdays by this alternative. On Saturdays, this alternative would generate 30,410 trip-ends, of which 2,823 would occur during the midday peak hour. The Saturday trip generation associated with this alternative would exceed that of the Preferred Project by 2,890 trip-ends.

#### *Less-Intense Alternative A*

Less-Intense Alternative A would include a centrally located park at the intersection of Belardo Road and the east/west museum promenade. On a typical weekday, Less-Intense Alternative A would generate 20,220 trip-ends (710 more than the No-Project Alternative). Less-Intense Alternative A would generate 5,230 fewer trip-ends than The Preserve Town & Country Center Alternative and 3,780 fewer trip-ends than the Preferred Project on a typical weekday. On a Saturday, Less-Intense Alternative A would generate 25,910 trip-ends (100 fewer than the No-Project Alternative and 1,610 fewer than the Preferred Project). Less-Intense Alternative A would generate 2,133 trip-ends in the midday peak hour (1,177 inbound and 956 outbound) on Saturdays.

#### *Less-Intense Alternative B*

Less-Intense Alternative B represents a lower intensity version of the Preferred Project. On a typical weekday, Less-Intense Alternative B would generate an estimated 18,890 trip-ends (with 1,661 trip-ends in the midday peak hour and 1,723 trip-ends in the evening peak hour). The peak hour trip generation would be nearly evenly split between inbound and outbound trips on weekdays with this alternative. On Saturdays, Less-Intense Alternative B would generate 23,760 trip-ends, of which 2,210 would occur during the midday peak hour.

Less-Intense Alternative B would generate 620 fewer trip-ends on a typical weekday and 2,250 fewer trip-ends on a Saturday than the No-Project Alternative. Less-Intense Alternative B would generate 5,110 fewer trip-ends on a typical weekday and 3,760 fewer trip-ends on a Saturday than the Preferred Project.

#### *Internal Capture of Project-Related Trips*

All of the trip-generation rates provided by the ITE were developed from data collected at isolated single-use free-standing sites. The development of mixed-use projects reduces the trip generation associated with the development below that which is projected directly from the ITE trip generation rates. When several uses are included in the same development, the traffic added to adjacent streets may be less than the sum of the individual trip-generation volumes. The reduction is attributable to trips being made that remain internal to the proposed development (e.g., between the residential or hotel uses and one or more of the retail uses). These internal trip interactions are counted twice when the trip generation of the individual uses are summed to establish the "unadjusted" trip generation.

The proposed project is a multi-use development with various land uses that will attract a portion of each other's trip generation. Trips will be made between the various interacting land use pairs without using the off-site road system. This capture of trips internal to the site will reduce the vehicle trip generation that occurs between the project site and the external street system, compared to that generated by comparable stand-alone sites.

Mixed-use developments like that proposed on-site incorporate several different land uses in a single project. As a result, they may include retail areas that compose less than 50 percent of the total project area, rather than the 80 percent retail area that is typical of shopping centers. The development of mixed-use sites creates the potential for interactions among pairs of individual uses within the site, particularly where trips between these uses can be made by walking or by vehicle entirely on internal pathways (without using streets external to the project site). As a result, the total generation of vehicle trips entering and exiting the project site may be reduced below the sum of the individual discrete trips generated by each land use.

Variables which can affect the internal capture rate include:

- the size of the development;
- the mix of on-site land uses (the combination of land uses which tend to interact i.e., residential, office, retail, restaurant, entertainment, and hotel);
- the proximity of the on-site land uses (within reasonable walking distance);
- the availability of pedestrian connections between on-site land uses;
- the site location within the urban/suburban area; and
- the proximity of competing or complementary land uses.

Observed internal capture rates vary by time of day and the day of the week. Weekday morning peak hours may have lower internal capture rates, if retail uses and the cinema are not open for business. Office uses may generate more internal trips on weekdays than on weekend days, when many are closed. Conversely, a cinema or a hotel use may generate more internal trips on Saturday and Sunday than on weekdays, since hotel occupancy rates tend to be higher on weekends and people attending a movie on-site would likely visit other retail uses on-site before or after the movie.

The number of internal trips between a pair of land uses on-site will be a function of both the size of the receiving land use (and the number of trips it attracts) and the size of the originating land use (and the number of trips it sends). The number of internal trips that

will be captured on-site will be constrained by the smaller of these two values. Therefore, an iterative balancing procedure must be utilized to constrain internal trip making estimates to realistic values, based upon the size and mix of the various land uses on-site as well as their proximity and the availability of competing land uses in the surrounding area.

The ITE notes in *Trip Generation Handbook* that a traditional downtown or central business district (CBD) typically has a mixture of diverse employment, retail, residential, commercial, recreation, and hotel uses with extensive pedestrian interactions because of the proximity of various uses, ease of access, and scale of development. Automobile occupancy is usually higher in the CBD than in outlying areas, particularly during peak commuting hours. However, the ITE also advises caution in the direct application of the unconstrained internal capture rates identified in Table 7.1 and 7.2 of *Trip Generation Handbook* for projects within central business districts since the ITE rates were identified from data collected for paired land uses at multi-use sites located outside of traditional downtown central business districts in Florida.

After careful consideration, professional judgement was exercised in estimating the internal trip capture rates for the future multi-use development proposed on-site to ensure a conservative analysis (as shown in Figure 4-1). The land uses within the Town and Country Center portion of the site were considered separately from the core area commercial uses with respect to internal trip interactions. This was done in an effort to reflect the spatial separation between these two areas and the fact that their gross leasable areas were considered separately (not combined) to estimate the trip generation associated with each of these commercial areas.

The trip generation forecast for each alternative shown in Table 4-1 was adjusted to reflect the internal trip interactions and eliminate the double counting of internal trips, as shown in Table 4-2. The adjustments were based on Tables 7.1 and 7.2 of the ITE's *Trip Generation Handbook* which provide internal capture rates within a multi-use development. As shown therein, retail uses capture approximately 20 percent of the traffic from adjacent office, residential, and other retail uses. Although the proposed project would include a substantial leasable core area with a variety of commercial uses, the project site is located within an urban area with a substantial number of existing and future commercial developments nearby. Therefore, a maximum internal capture rate of 10 percent of the trip-ends generated by the Town & Country Center, the future hotels, residential uses, and office uses on-site was assumed to be local commercial trips destined for retail uses within the core area on-site.

This internal capture rate assumed was one-half of the ITE value of 20 percent for trip origins within offices to retail uses and one-third of the 34 percent for residential trip origins to retail uses. No internal trip adjustments were made between the residential or hotel uses and the office land uses on-site or between the offices and the Town & Country Center.

The adjusted trip generation shown in Table 4-2 assumed that a maximum of 10 percent of the shopping trips generated by the office uses, residential uses, hotel uses, and Town & Country Center uses on-site would be captured by the commercial uses in the core area and remain internal to the site. This adjustment reduced the external trip generation estimate for the Preferred Project by 14.9 percent. It reduced the external trip generation estimate for the No-Project Alternative by 8.5 percent. This adjustment reduced the number of external trips generated by the Preserve Town & Country Center Alternative by 16.2 percent. It reduced the number of external trips associated with Less-Intense Alternatives A and B by 18.2 percent and 9.5 percent, respectively.

Figure 4-1  
Internal Trip Capture Rates Assumed  
for Future Multi-Use Site Development

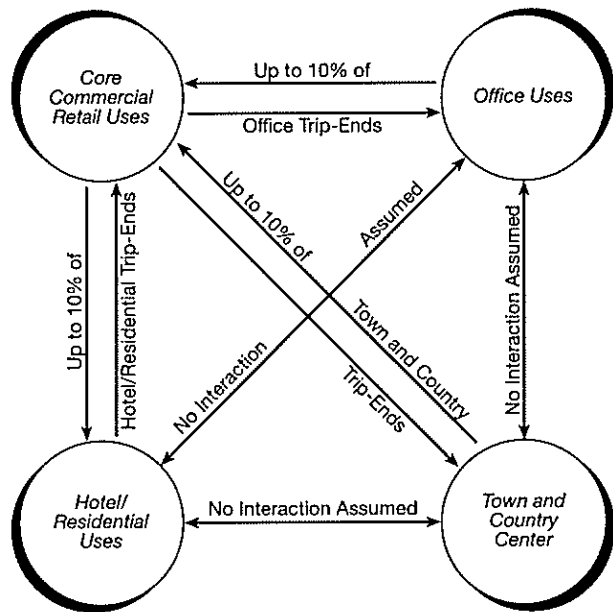


Table 4-2  
Adjusted Site Trip-Generation Forecast By Alternative

On-Site Alternative (Scenario Evaluated)	Trip Type	Midday Peak Hour			PM Peak Hour			Daily 2-Way
		In	Out	Total	In	Out	Total	
<b>EXISTING LAND USE:</b>								
<b>Weekday</b>	Unadjusted	264	295	559	357	386	743	8,100
	Adjusted	241	272	513	326	355	681	7,400
	Internal	46	46	92	62	62	124	1,400
	External	218	249	467	295	324	619	6,700
<b>Saturday</b>	Unadjusted	537	496	1,033	-	-	-	11,200
	Adjusted	493	452	945	-	-	-	10,260
	Internal	88	88	176	-	-	-	1,880
	External	449	408	857	-	-	-	9,320
<b>PREFERRED PROJECT</b>								
<b>Weekday</b>	Unadjusted	1,107	988	2,095	1,059	1,133	2,192	24,200
	Adjusted	1,036	917	1,953	978	1,052	2,030	22,400
	Internal	142	142	284	162	162	324	3,600
	External	965	846	1,811	897	971	1,868	20,600
<b>Saturday</b>	Unadjusted	1,327	1,244	2,571	-	-	-	27,740
	Adjusted	1,256	1,173	2,429	-	-	-	26,060
	Internal	142	142	284	-	-	-	3,360
	External	1,185	1,102	2,287	-	-	-	24,380
<b>NO-PROJECT ALT.</b>								
<b>Weekday</b>	Unadjusted	917	767	1,684	870	939	1,809	19,510
	Adjusted	892	742	1,634	832	901	1,733	18,680
	Internal	50	50	100	76	76	152	1,660
	External	867	717	1,584	794	863	1,657	17,850
<b>Saturday</b>	Unadjusted	1,286	1,185	2,471	-	-	-	26,010
	Adjusted	1,232	1,131	2,363	-	-	-	24,880
	Internal	108	108	216	-	-	-	2,260
	External	1,178	1,077	2,255	-	-	-	23,750
<b>PRESERVE T&amp;C ALT.</b>								
<b>Weekday</b>	Unadjusted	1,136	1,033	2,169	1,126	1,224	2,350	25,450
	Adjusted	1,054	951	2,005	1,029	1,127	2,156	23,390
	Internal	164	164	328	194	194	388	4,120
	External	972	869	1,841	932	1,030	1,962	21,330
<b>Saturday</b>	Unadjusted	1,454	1,369	2,823	-	-	-	30,410
	Adjusted	1,361	1,276	2,637	-	-	-	28,230
	Internal	186	186	372	-	-	-	4,360
	External	1,268	1,183	2,451	-	-	-	26,050

Table 4-2 (Continued)  
Adjusted Site Trip-Generation Forecast By Alternative

On-Site Alternative (Scenario Evaluated)	Trip Type	Midday Peak Hour			PM Peak Hour			Daily 2-Way
		In	Out	Total	In	Out	Total	
<b>LESS-INTENSE ALT. A</b>								
<b>Weekday</b>	Unadjusted	818	693	1,511	1,054	803	1,857	20,220
	Adjusted	770	645	1,415	982	731	1,713	18,380
	Internal	96	96	192	144	144	288	3,680
	External	722	597	1,319	910	659	1,569	16,540
<b>Saturday</b>	Unadjusted	1,177	956	2,133	-	-	-	25,910
	Adjusted	1,105	884	1,989	-	-	-	23,690
	Internal	144	144	288	-	-	-	4,440
	External	1,033	812	1,845	-	-	-	21,470
<b>LESS-INTENSE ALT. B</b>								
<b>Weekday</b>	Unadjusted	828	833	1,661	873	850	1,723	18,890
	Adjusted	793	798	1,591	835	812	1,647	17,990
	Internal	70	70	140	76	76	152	1,800
	External	758	763	1,521	797	774	1,571	17,090
<b>Saturday</b>	Unadjusted	1,133	1,077	2,210	-	-	-	23,760
	Adjusted	1,094	1,038	2,132	-	-	-	22,800
	Internal	78	78	156	-	-	-	1,920
	External	1,055	999	2,054	-	-	-	21,840

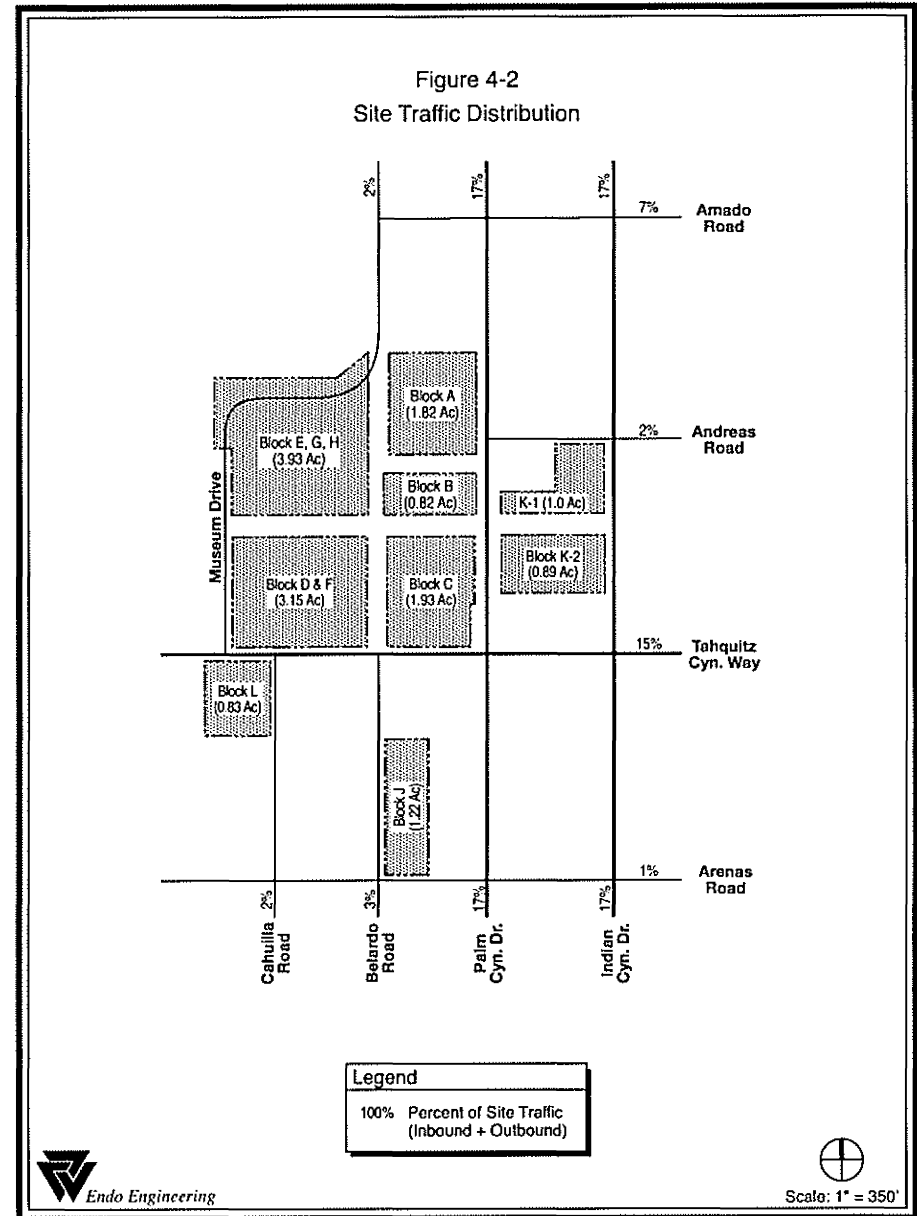
As shown in Table 4-2, the Preferred Project would have an external daily trip generation three times greater than the current site trip generation, but only 15 percent greater than the No-Project Alternative. The Preserve Town & Country Alternative is projected to have the highest external daily trip generation (approximately 3.5 percent greater than the Preferred Project). Less-Intense Alternative A would have the lowest external daily trip generation (approximately 20 percent less than the Preferred Project). Less-Intense Alternative B would have an external trip generation approximately 17 percent lower than the Preferred Project.

**SITE TRIP DISTRIBUTION AND ASSIGNMENT**

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

The trip distribution associated with site traffic was primarily based upon the traffic assignments included in other traffic studies completed for developments in the project vicinity. The site traffic distribution for the Museum Market Plaza Specific Plan is shown in Figure 4-2. The existing land uses on-site was assumed to conform to the trip

Figure 4-2  
Site Traffic Distribution



distribution shown in Figure 4-2. The trip generation from the existing land uses was subtracted from the existing traffic volumes on the existing street system.

Traffic is typically assigned to the parking location of the trips for the proposed land uses. However, the location of all of the on-site parking has not yet been determined. A three-story parking structure may be located in Block J and/or Block L. In addition, 50 percent of the residential guest parking may be located in a different block than the residential dwelling units and the parking for the hotel employees may be located in a different block than the hotel. The parking for the commercial uses may be located anywhere within the Specific Plan. A large portion of the parking is anticipated to be underground, but the location and access driveways for the underground parking have not been established.

Furthermore, a transfer of building square footage from one block to another block would be permitted by the Specific Plan, as long as the transfer does not increase the building square footage by more than 15 percent in the receiving block. In addition, the overall build out maximum development permitted for the Specific Plan area cannot be exceeded.

Therefore, the trip generation was generally assumed to be evenly distributed on site, proportional to the size of each Block. Where the location of specific land uses was known (e.g. preservation of the Town & Country), the trip generation for those uses were assumed for those Blocks. The access for Blocks K1 and K2 (Town & Country site) was assumed to be on Indian Canyon Drive for existing conditions, the No-Project Alternative, the Preserve Town & Country Center Alternative, and the Less-Intense Alternative A. For the Preferred Project and Less-Intense Alternative B, the access was assumed to be primarily on Museum Way which could be used to access to both Palm Canyon Drive and Indian Canyon Drive.

#### 4B. THROUGH TRAFFIC PROJECTIONS

##### TRIP GENERATION ASSOCIATED WITH CUMULATIVE DEVELOPMENTS

The cumulative traffic analysis included the assignment of traffic from fifteen cumulative projects (shown in Figure 2-10) that were identified through coordination with the City of Palm Springs. The location of the cumulative projects extended north to Tamarisk Road, east to Farrell Drive, and south to East Palm Canyon Drive. Cumulative traffic from developments located outside of this area were assumed to be part of the minimum 10 percent growth in existing traffic volumes.

Traffic volumes were projected for the midday and evening peak hours on typical weekdays in the peak season as well as the midday peak hour of the generators on Saturdays. Since the Villagefest starts at 6:00 PM during the winter season, and road closures begin up to an hour earlier, the cumulative development trip-generation forecast for Thursday evenings during Villagefest was assumed to be same as that of the weekday evening peak hour.

The cumulative trip-generation estimates for a typical weekday midday and evening peak hour are shown in Table 4-3. These estimates were developed from the ITE *Trip Generation* (Seventh Edition) manual by applying the recommended procedures for estimating trip generation outlined by the ITE in *Trip Generation Handbook* (March, 2001). The weekday trip generation associated with the Agua Caliente Museum was increased by 67 percent to estimate the Saturday trip generation, based upon historical visitor attendance data provided by the Palm Springs Art Museum.

Table 4-3  
Cumulative Project Weekday Trip-Generation Forecast<sup>a</sup>

Development Land Use Category	Land Use Quantity <sup>b</sup>	Midday Peak Hour			Evening Peak Hour			Daily 2-Way
		In	Out	Total	In	Out	Total	
<b>Palm Canyon at Tamarisk</b>								
- Specialty Retail	3.5 TSF	11	12	23	10	8	18	
- Residential (MFA)	12 DU	2	8	10	7	3	10	
Subtotal		13	20	33	17	11	28	
<b>TTM 31104</b>								
- Residential (MFA)	20 DU	2	12	14	11	5	16	
<b>Agua Caliente Museum</b>								
	90 TSF	89	57	146	43	104	147	
<b>Village Traditions</b>								
- Residential (MFA)	104 DU	10	44	54	42	20	62	
<b>TTM 33936</b>								
- Residential (MFA)	21 DU	3	12	15	11	6	17	
<b>The Palm Canyon</b>								
- Existing Retail (820)	45,936 TSF	133	149	282	180	195	375	
Portion Occupied <sup>c</sup>	50%	67	75	142	90	98	188	
- Proposed Retail (820)	39,25 TSF	120	135	255	163	176	339	
Net Retail Increase		53	60	113	73	78	151	
- Primary with Pass-By <sup>d</sup>	34%	35	35	70	48	48	96	
- Residential (MFA)	125 DU	10	51	61	48	24	72	
Net Increase Subtotal		45	86	131	96	72	168	
<b>Camino Real, LLC</b>								
- Residential (MFA)	25 DU	3	14	17	13	6	19	
- Residential (SFD)	9 DU	5	14	19	8	5	13	
Subtotal		8	28	36	21	11	32	

- Unadjusted trip generation forecast based upon a direct application of the peak hour of the generator trip generation rates and regression equations published by the ITE *Trip Generation* (Seventh Edition). The use of specialty retail (Land Use Code 814) was based upon similar assumptions in the *Rael Development Traffic Study*. No pass-by trip adjustments were assumed for specialty retail development.
- TSF=Thousand square feet of building floor area. DU=Dwelling units.
- The assumption that "The Palm Canyon" site is 50 percent occupied is based upon a drive-by review of the site.
- Pass-by trips are those involving motorists passing the site who opt to make an intermediate stop to visit the retail development on-site on their way to another destination. Since the inbound and the outbound volume of pass-by trips must equal (i.e. any pass-by trip that enters the site must depart) the smaller of the two volumes constrains the pass-by trip percentage.

Table 4-3 (Continued)  
Cumulative Project Weekday Trip-Generation Forecast<sup>a</sup>

Development Land Use Category	Land Use Quantity <sup>b</sup>	Midday Peak Hour			Evening Peak Hour			Daily 2-Way
		In	Out	Total	In	Out	Total	
<b>Rael Development</b>								
- Existing Uses								
Specialty Retail	17.49 TSF	97	105	202	49	39	88	790
General Office	2.5 TSF	6	1	7	1	5	6	50
Restaurant	1.62 TSF	11	11	22	11	10	21	210
Existing Use Total		114	117	231	61	54	115	1,050
- Proposed Uses								
Specialty Retail	28 TSF	121	132	253	79	62	141	1,240
Residential (MFA)	130 DU	12	53	65	50	25	75	800
General Office	4.4 TSF	11	1	12	2	9	11	90
Proposed Use Total		144	186	330	131	96	227	2,130
Net Increase Subtotal		30	69	99	70	42	112	1,080
<b>TTM 32378</b>								
- Residential (MFA)	11 DU	2	7	9	7	3	10	100
<b>Palm Mtn. Resort</b>								
- Hotel	40 Rooms	14	9	23	13	11	24	330
<b>TTM 33341</b>								
- Residential (MFA)	156 DU	13	61	74	58	29	87	940
<b>TTM 33575</b>								
- Residential (MFA)	100 DU	9	43	52	40	20	60	640
Specialty Retail	32.58 TSF	132	143	275	92	72	164	1,430
Proposed Use Total		141	186	327	132	92	224	2,070
<b>TTM 34165</b>								
- Residential (MFA)	84 DU	8	37	45	35	17	52	550
<b>TTM 34938</b>								
- Residential (SFD)	34 DU	9	27	36	26	15	41	390
<b>TTM 35600</b>								
- Restaurant (932)	15 TSF	106	97	203	100	64	164	1,910
Drinking Place (936)	6 TSF				46	24	70	340
Subtotal		106	97	203	146	88	234	2,250
50% Internal		53	49	102	73	44	117	1,130
Hotel	482 Rooms	121	99	220	151	134	285	3,940
Total		174	148	322	224	178	402	5,070
<b>Cumulative Total</b>		559	803	1,362	806	616	1,422	16,030

a. Unadjusted trip generation forecast based upon a direct application of the peak hour of the generator trip generation rates and regression equations published by the ITE *Trip Generation* (Seventh Edition).  
b. TSF=Thousand square feet of building floor area. DU=Dwelling unit.

The cumulative projects are projected to generate a total of approximately 16,030 weekday trip-ends, as shown in Table 4-3. During the midday peak hour on weekdays, 1,362 trip-ends would be generated (559 inbound and 803 outbound). During the evening peak hour, 1,422 trip-ends would be generated (806 inbound and 616 outbound) by the fifteen cumulative projects evaluated.

Table 4-4 summarizes the trip generation for the cumulative projects during the midday peak hour on a typical Saturday. The Saturdays trip generation associated with the fifteen cumulative developments evaluated (1,504 trip-ends, with 757 inbound and 747 outbound trips) is expected to be greater than the typical weekday trip generation. Although the multi-family attached residential weekday trip generation forecast in Table 4-3 was developed from the ITE regression equations, the weighted average trip generation rates were utilized for the Saturday trip generation in Table 4-4, based on the limited number of trip generation studies for Saturdays and the relatively small number of dwelling units being evaluated.

The typical weekday traffic of each of the fifteen cumulative developments was assigned to the streets and intersections in the study area and then added together to identify the year 2030 cumulative daily and peak hour turning movement traffic projections shown in Figure 4-3 and Figure 4-4. Where possible, the cumulative traffic volumes of each project were assigned through the study area based upon the cumulative traffic distribution and assignment information in available traffic studies. In those instances where no traffic study was available, the location of future trip destinations and origins was considered in conjunction with the turning percentages of entering traffic at the key intersections in the vicinity of each cumulative development, as an indication of the direction future cumulative traffic would be likely to travel.

The closure of Palm Canyon Drive on Villagefest Thursdays will cause a portion of the cumulative traffic to divert to Belardo Road in the year 2030. Figure 4-5 shows the cumulative traffic turning volumes projected to be using the key intersections along Belardo Road during the highest hour between 6:30 p.m. and 8:30 p.m. on Villagefest Thursdays upon build out in the year 2030. Figure 4-6 depicts the year 2030 cumulative turning movement traffic volumes at the key intersections evaluated during the midday peak hour on Saturdays.

#### 4C. TOTAL TRAFFIC PROJECTIONS

##### YEAR 2030 TYPICAL WEEKDAY TRAFFIC PROJECTIONS

Figure 4-7 shows the typical weekday traffic projections for the roadways within the study area upon build out of the *Palm Springs General Plan*. These projections were developed in conjunction with the 2007 update of the *Palm Springs General Plan* and include the site traffic that would utilize the roadways within the study area with the No-Project Alternative.

The larger of the recently updated *Palm Springs General Plan* build out traffic projections or the sum of existing traffic plus a ten percent growth, plus cumulative project traffic, plus project-related traffic was assumed for General Plan build out year 2030 traffic volumes. For consistency between the various scenarios, the project traffic generated by the No-Project Alternative was assumed to be included in the General Plan build out traffic volumes. Table 4-5 provides the future Year 2030 General Plan build out weekday traffic projections with the Preferred Project and each project alternative.



Figure 4-3  
Year 2030 Cumulative Weekday Traffic Projections

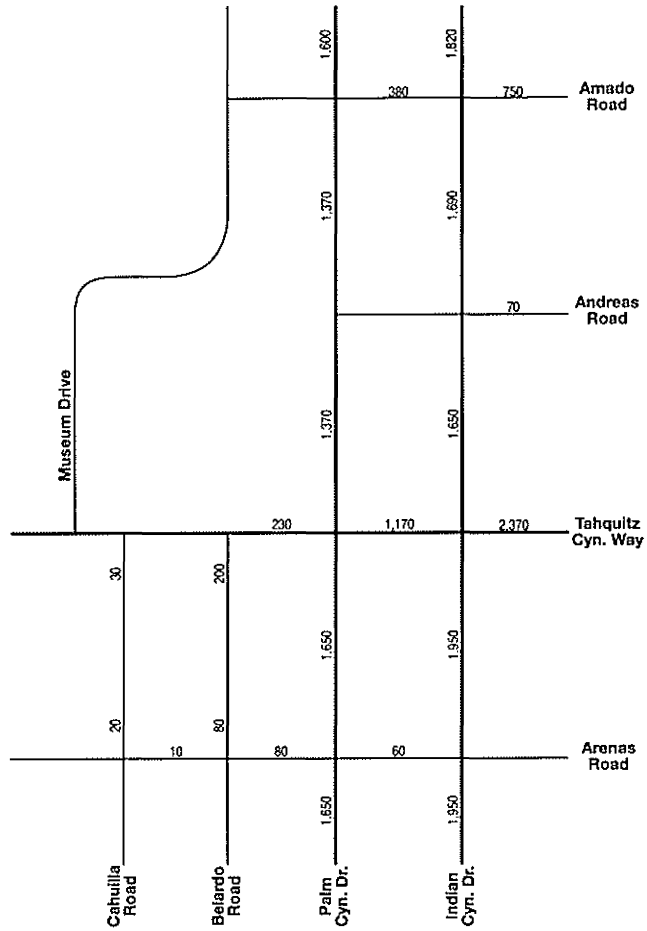
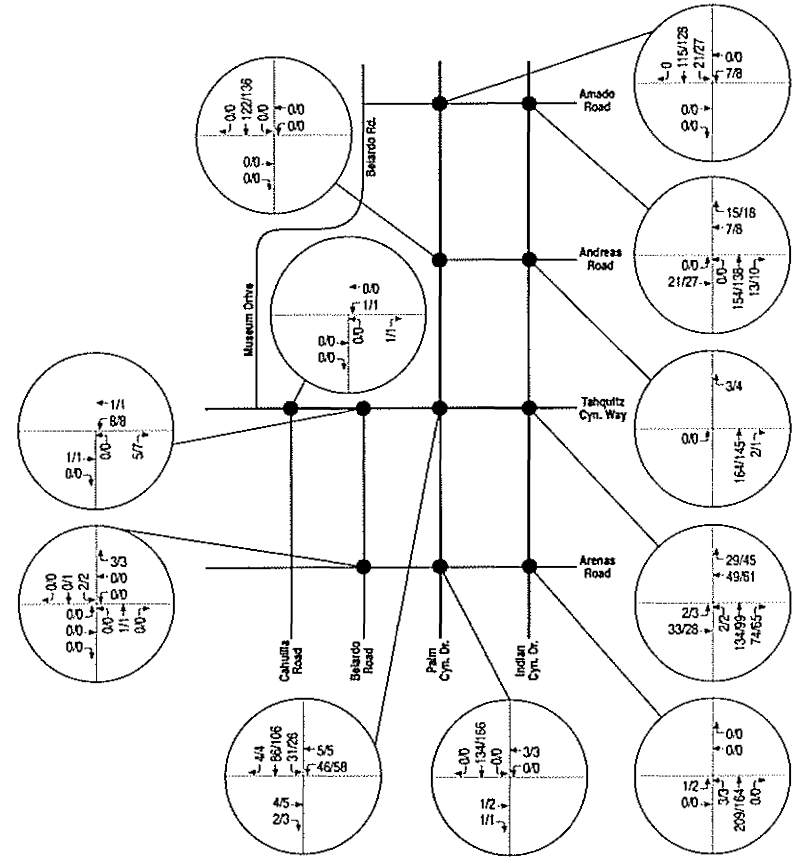
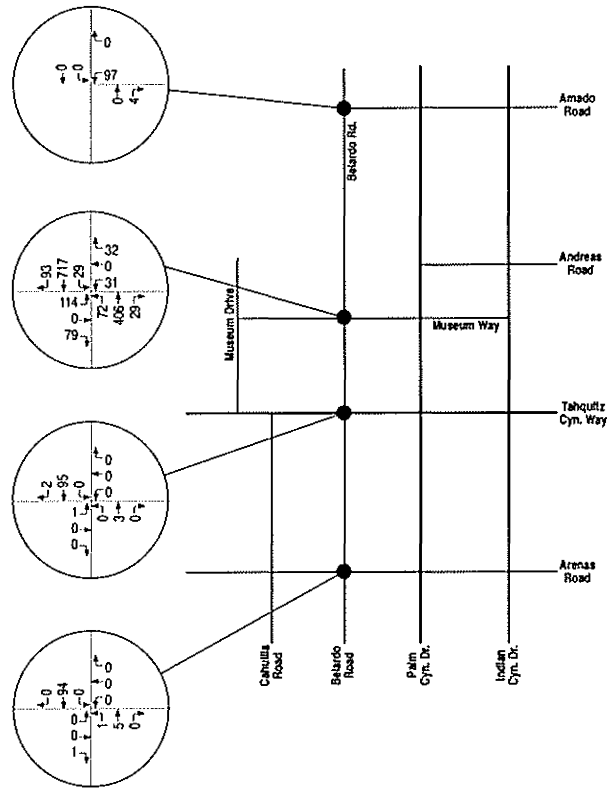


Figure 4-4  
Year 2030 Cumulative Weekday Peak Hour Traffic Projections



Legend  
 † 5/8 Midday/Evening Peak Hour Turning Volume

Figure 4-5  
Year 2030 Cumulative Peak Hour  
Traffic Projections During Villagefest

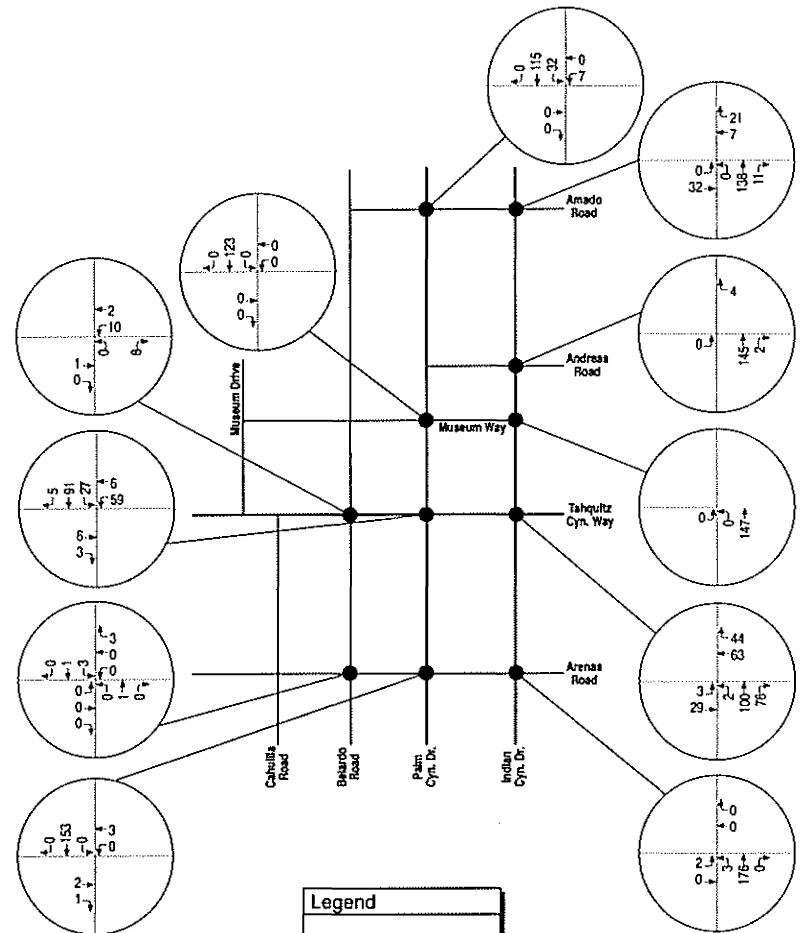


**Legend**  
t.5 Evening Peak Hour  
Turning Volume



Scale: 1" = 500'

Figure 4-6  
Year 2030 Cumulative Saturday  
Peak Hour Traffic Projections



**Legend**  
t.5 Midday Peak Hour  
Turning Volume



Scale: 1" = 500'

Figure 4-7  
General Plan Build-Out Typical Weekday Traffic Projections

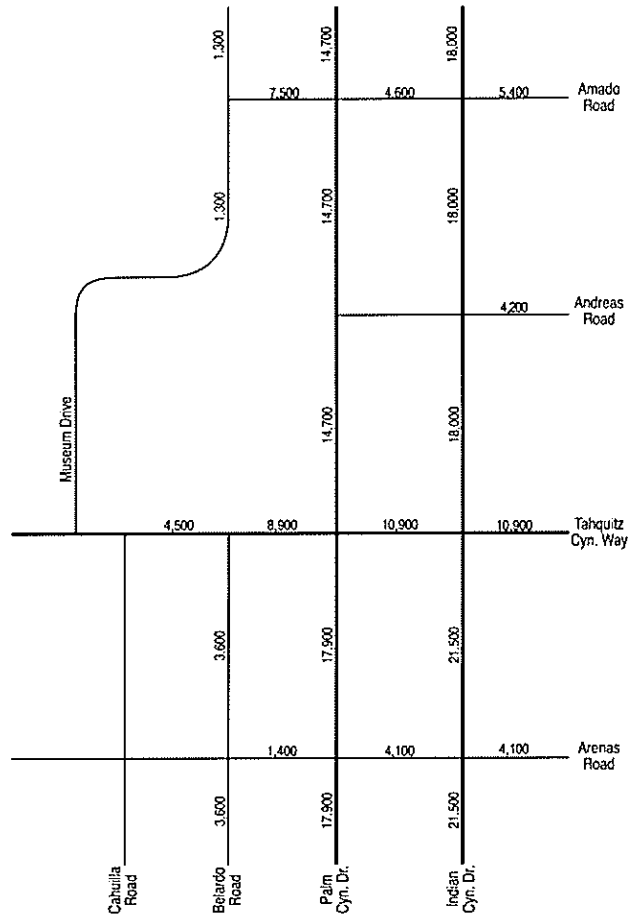


Table 4-4  
Cumulative Project Saturday Trip-Generation Forecast<sup>a</sup>

Development Land Use Category	Land Use Quantity <sup>b</sup>	Midday Peak Hour			Daily 2-Way
		In	Out	Total	
<b>Palm Canyon at Tamarisk</b>					
- Specialty Retail	3.5 TSF	10	8	18	150
- Residential (MFA)	12 DU	3	3	6	70
Subtotal		13	11	24	220
<b>TTM 31104</b>					
- Residential (MFA)	20 DU	5	4	9	110
<b>Agua Caliente Museum</b>					
- 90 TSF	90 TSF	72	173	245	3,430
<b>Village Traditions</b>					
- Residential (MFA)	104 DU	26	22	48	590
<b>TTM 33936</b>					
- Residential (MFA)	21 DU	5	5	10	120
<b>The Palm Canyon</b>					
- Existing Retail (820)	45,936 TSF	271	251	522	5,660
- Portion Occupied	50%	136	126	262	2,830
- Proposed Retail (820)	39.25 TSF	245	226	471	5,130
Net Retail Increase		109	100	209	2,300
- Primary with Pass-By <sup>c</sup>	34%	66	66	132	1,520
- Residential (MFA)	125 DU	32	27	59	710
Net Increase Subtotal		98	93	191	2,230
<b>Camino Real, LLC</b>					
- Residential (MFA)	25 DU	6	5	11	140
- Residential (SFD)	9 DU	5	4	9	90
Subtotal		11	9	20	230

a. Unadjusted trip generation forecast based upon a direct application of the peak hour of the generator trip generation rates and regression equations published by the ITE *Trip Generation* (Seventh Edition).  
b. TSF=Thousand square feet of building floor area. DU=Dwelling unit.  
c. Pass-by trips are those involving motorists passing the site who opt to make an intermediate stop to visit the retail development on-site on their way to another destination. Since the inbound and the outbound volume of pass-by trips must equal (i.e. any pass-by trip that enters the site must depart) the smaller of the two volumes (the inbound volume) constrained the pass-by trip percentage.

Table 4-4 (Continued)  
Cumulative Project Saturday Trip-Generation Forecast<sup>a</sup>

Development Land Use Category	Land Use Quantity <sup>b</sup>	Midday Peak Hour			Daily 2-Way
		In	Out	Total	
<b>Rael Development</b>					
<b>- Existing Uses</b>					
Specialty Retail	17.49 TSF	49	39	88	740
General Office	2.5 TSF	1	0	1	10
Restaurant	1.62 TSF	20	12	32	260
Existing Use Total		70	51	121	1,010
<b>- Proposed Uses</b>					
Specialty Retail	28 TSF	79	62	141	1,180
Residential (MFA)	130 DU	33	28	61	740
General Office	4.4 TSF	1	1	2	10
Proposed Use Total		113	91	204	1,930
Net Increase Subtotal		43	40	83	920
<b>TTM 32378</b>					
- Residential (MFA)	11 DU	3	2	5	60
<b>Palm Mountain Resort</b>					
- Hotel	40 Rooms	16	13	29	330
<b>TTM 33341</b>					
- Residential (MFA)	156 DU	40	34	74	880
<b>TTM 33575</b>					
- Residential (MFA)	100 DU	25	22	47	570
Specialty Retail	32.58 TSF	92	72	164	1,370
Total		117	94	211	1,940
<b>TTM 34165</b>					
- Residential (MFA)	84 DU	21	18	39	480
<b>TTM 34938</b>					
- Residential (MFA)	34 DU	17	15	32	340
<b>TTM 35600</b>					
- Restaurant (932)	15 TSF	106	97	203	2,380
Drinking Place (936)	6 TSF	46	24	70	340
Subtotal		152	121	273	2,720
50% Internal		76	61	137	1,360
Hotel	482 Rooms	194	153	347	3,950
Total		270	214	484	5,310
<b>Cumulative Total</b>		<b>757</b>	<b>747</b>	<b>1,504</b>	<b>17,190</b>

a. Unadjusted trip generation forecast based upon a direct application of the peak hour of the generator trip generation rates and regression equations published by the TTE *Trip Generation* (Seventh Edition).  
b. TSF=Thousand square feet of building floor area. DU=Dwelling unit.

Table 4-5  
Year 2030 Weekday Traffic Volume Forecast By Alternative  
(Peak Season)

Roadway Segment	Preferred Project	No-Project Alternative	Preserve Town & Country Alt.	Less-Intense Alt. A	Less-Intense Alt. B
<b>Palm Canyon Drive</b>					
- N/O Amado Road	21,770	21,070	21,790	20,940	21,130
- S/O Amado Road	21,570	20,970	21,870	21,200	20,960
- N/O Andreas Road	---	---	---	20,050	---
- S/O Andreas Road	---	---	---	19,460	---
- N/O Museum Way	21,960	---	22,250	---	21,350
- S/O Museum Way	22,230	---	22,500	---	21,560
- N/O Tahquitz Cyn Way	22,230	21,370	22,500	21,440	21,560
- S/O Tahquitz Cyn Way	22,610	22,030	22,660	21,840	20,040
- N/O Arenas Road	18,480	17,900	18,530	17,710	17,890
- S/O Arenas Road	18,600	17,900	18,660	17,770	17,970
<b>Indian Canyon Drive</b>					
- N/O Amado Road	20,000	19,300	20,020	19,170	19,370
- S/O Amado Road	20,690	20,420	20,190	20,680	20,150
- N/O Andreas Road	20,060	19,790	19,560	20,050	19,520
- S/O Andreas Road	19,560	19,540	19,180	19,460	19,020
- N/O Museum Way	20,460	---	---	---	19,920
- S/O Museum Way	21,360	---	---	---	20,630
- N/O Tahquitz Cyn Way	21,360	20,440	20,080	20,360	20,630
- S/O Tahquitz Cyn Way	22,430	21,750	22,360	21,540	21,820
- N/O Arenas Road	22,180	21,500	22,110	21,290	21,570
- S/O Arenas Road	22,200	21,500	22,220	21,370	21,560
<b>Belardo Road</b>					
- N/O Amado Road	3,260	3,180	3,260	3,160	3,190
- S/O Amado Road	5,330	5,370	6,300	4,100	4,810
- N/O Museum Way	6,470	---	6,950	5,550	5,780
- S/O Museum Way	4,920	---	6,810	4,960	4,440
- N/O Tahquitz Cyn Way	4,980	---	7,220	5,080	4,450
- S/O Tahquitz Cyn Way	4,690	3,930	4,750	4,350	4,400
- N/O Arenas Road	4,020	3,600	4,080	3,800	3,810
- S/O Arenas Road	3,720	3,600	3,720	3,570	3,610
<b>Museum Drive</b>					
- N/O Museum Way	2,650	---	2,730	2,320	2,370
- S/O Museum Way	2,030	---	2,080	1,830	1,880
- N/O Tahquitz Cyn Way	2,100	8,020	2,150	1,890	1,940
<b>Cahuilla Road</b>					
- S/O Tahquitz Cyn Way	2,200	1,780	2,260	1,920	1,530
- N/O Arenas Road	1,290	1,210	1,310	1,160	1,190
- S/O Arenas Road	630	580	630	580	590

Table 4-5 (Continued)  
Year 2030 Weekday Traffic Volume Forecast By Alternative  
(Peak Season)

Roadway Segment	Preferred Project	No-Project Alternative	Preserve Town & Country Alt.	Less-Intense Alt. A	Less-Intense Alt. B
<b>Amado Road</b>					
- E/O Belardo Road	7,320	7,500	8,330	6,230	6,870
- W/O Palm Cyn Drive	7,320	7,500	8,330	6,230	6,870
- E/O Palm Cyn Drive	7,820	8,110	8,930	7,200	7,400
- W/O Indian Cyn Drive	6,210	6,500	7,320	5,590	5,790
- E/O Indian Cyn Drive	5,690	5,400	5,710	5,350	5,430
<b>Andreas Road</b>					
- W/O Palm Cyn Drive	---	---	---	3,450	---
- W/O Indian Cyn Drive	220	220	220	2,160	220
- E/O Indian Cyn Drive	4,090	4,200	4,180	4,140	4,010
<b>Museum Way</b>					
- W/O Belardo Road	4,210	---	4,370	2,920	3,420
- E/O Belardo Road	4,390	---	2,620	---	3,460
- W/O Palm Cyn Drive	5,070	---	2,020	---	3,910
- E/O Palm Cyn Drive	4,290	---	---	---	3,380
- W/O Indian Cyn Drive	4,110	---	---	---	3,240
<b>Tahquiltz Canyon Way</b>					
- W/O Museum Drive	950	950	950	950	950
- E/O Museum Drive	2,780	8,700	2,830	2,570	2,620
- W/O Cahuilla Road	2,810	8,730	2,860	2,600	2,650
- E/O Cahuilla Road	4,290	10,150	4,410	3,610	3,770
- W/O Belardo Road	3,830	9,690	3,950	3,150	3,310
- E/O Belardo Road	8,650	9,770	10,710	7,980	7,720
- W/O Palm Cyn Drive	10,560	12,200	12,780	10,050	9,480
- E/O Palm Cyn Drive	13,390	14,870	16,010	13,190	12,610
- W/O Indian Cyn Drive	13,220	14,700	15,840	10,050	12,440
- E/O Indian Cyn Drive	15,380	14,580	15,280	13,190	14,820
<b>Arenas Road</b>					
- W/O Cahuilla Road	1,320	1,270	1,320	1,270	1,280
- E/O Cahuilla Road	1,240	1,110	1,250	1,150	1,180
- W/O Belardo Road	1,340	1,210	1,350	1,250	1,280
- E/O Belardo Road	2,400	2,140	2,510	2,310	2,260
- W/O Palm Cyn Drive	3,160	2,400	3,280	2,920	2,920
- E/O Palm Cyn Drive	4,430	4,100	4,520	4,340	4,310
- W/O Indian Cyn Drive	4,430	4,100	4,520	4,340	4,310
- E/O Indian Cyn Drive	4,150	4,100	4,150	4,100	4,120

Existing turning movement volumes were proportionally increased to represent year 2030 turning movements. Each existing turning movement volume was multiplied by the ratio of the future year 2030 weekday traffic volume divided by the current weekday traffic volume on both intersection legs associated with that turning movement. All of the cumulative projects shown in Table 2-3 were assumed to be completed by the time the proposed project is completed. Consequently, the projected cumulative traffic volumes were added to the year 2030 peak hour traffic volumes. In any instances where the current volume exceeded the future volume projection (or a future projection was not available) the current volume was increased by ten percent and then assumed as the future year 2030 traffic volume projection.

Year 2030 peak hour turning movement projections were developed by assuming that the increase in peak hour volumes between the year 2008 and the year 2030 would mirror the change in the daily volumes. The increase in peak hour turning volumes was normalized to the growth in daily traffic volumes to ensure that the future peak hour volumes would more accurately reflect the overall increase in daily traffic volumes. Peak hour turning movement volumes generated by the cumulative projects shown in Table 2-3 were added to the background traffic growth projected in the study area.

The year 2030 total weekday traffic projections for the roadways within the study area with the Preferred Project are provided in Figure 4-8. Figure 4-9 provides the year 2030 total weekday traffic volume projections with the No-Project Alternative. Figure 4-10 shows the year 2030 total weekday traffic volume projections with the Preserve Town and Country Center Alternative. Figure 4-11 depicts the year 2030 total weekday traffic volume projections with Less-Intense Alternative A. Figure 4-12 depicts the year 2030 total weekday traffic volume projections with Less-Intense Alternative B.

The year 2030 total weekday peak hour turning volumes at the key intersections in the study area with the Preferred Project are provided in Figure 4-13. Figure 4-14 depicts the year 2030 total weekday peak hour turning volumes at the key intersections in the study area with the No-Project Alternative. Figure 4-15 shows the year 2030 total weekday peak hour turning movement traffic projections at the key intersections with the Preserve Town and Country Center Alternative. Figure 4-16 depicts the year 2030 total weekday peak hour turning movement traffic volume projections with Less-Intense Alternative A. Figure 4-17 depicts the year 2030 total weekday peak hour turning movement traffic volume projections with Less-Intense Alternative B.

**YEAR 2030 BUILD OUT TRAFFIC PROJECTIONS WITH VILLAGEFEST**

Figures 4-18 through 4-22 show the year 2030 total traffic projections for the highest volume hour between 6:30 p.m. and 8:30 p.m. on Thursday evenings during Villagefest by site development alternative. Turning movement projections are shown for the key intersections along Belardo Road with Palm Canyon Drive assumed to be closed for Villagefest. The traffic volumes on Indian Canyon Drive during this period would be similar to those on a typical weekday evening peak hour.

**YEAR 2030 BUILD OUT SATURDAY TRAFFIC PROJECTIONS**

Figures 4-23 through 4-30 illustrate the year 2030 midday peak hour traffic projections on Saturdays at the key intersections by site development alternative. It should be noted that the changes in both on-site land uses and the proposed internal circulation system with each alternative affect the traffic volumes projected for the surrounding streets.

Figure 4-8  
Year 2030 Weekday Traffic Projections  
(With The Preferred Project)

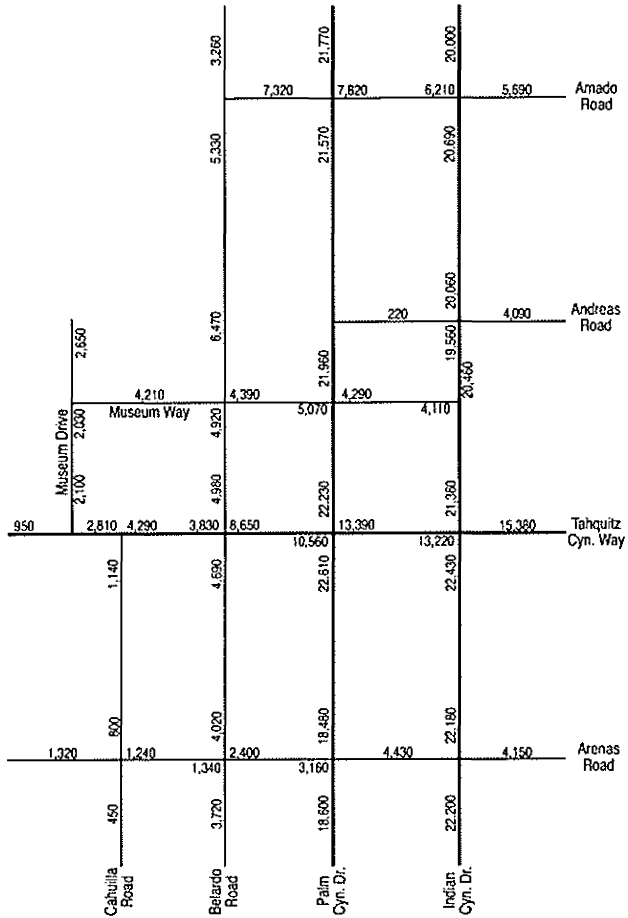


Figure 4-9  
Year 2030 Weekday Traffic Projections  
(With The No-Project Alternative)

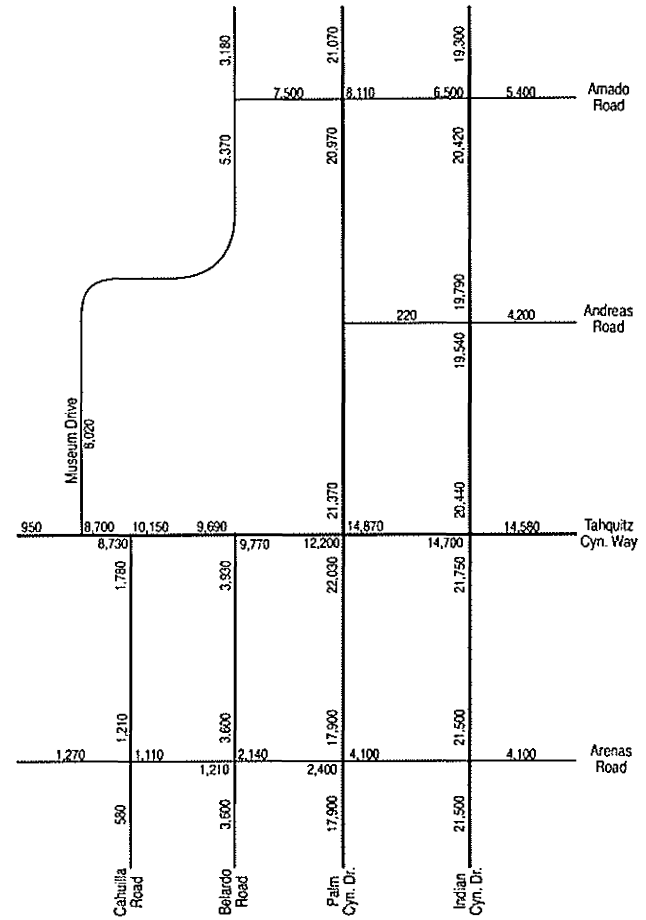


Figure 4-10  
Year 2030 Weekday Traffic Volumes  
(With The Preserve Town and Country Alternative)

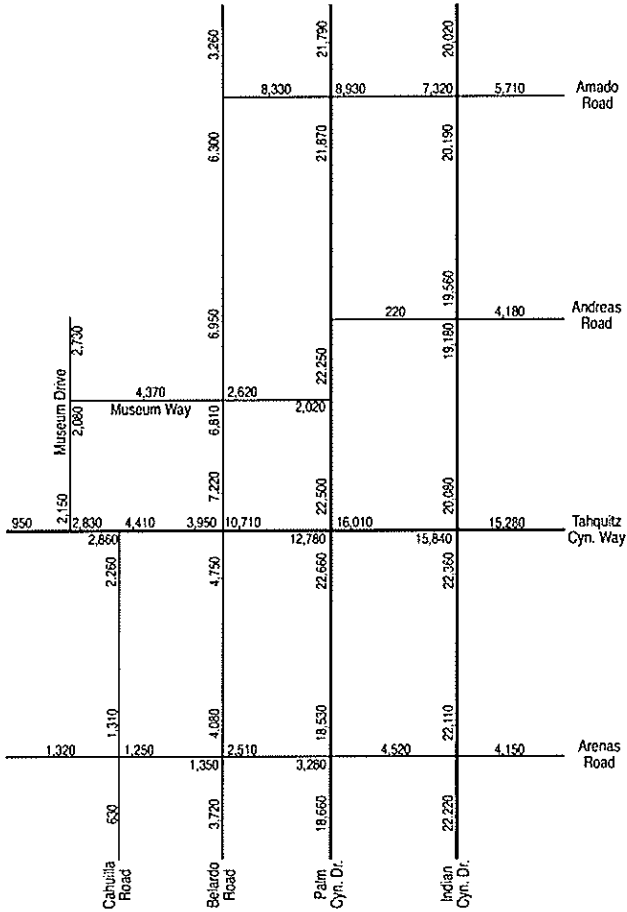


Figure 4-11  
Year 2030 Weekday Traffic Projections  
(With Less-Intense Alternative A)

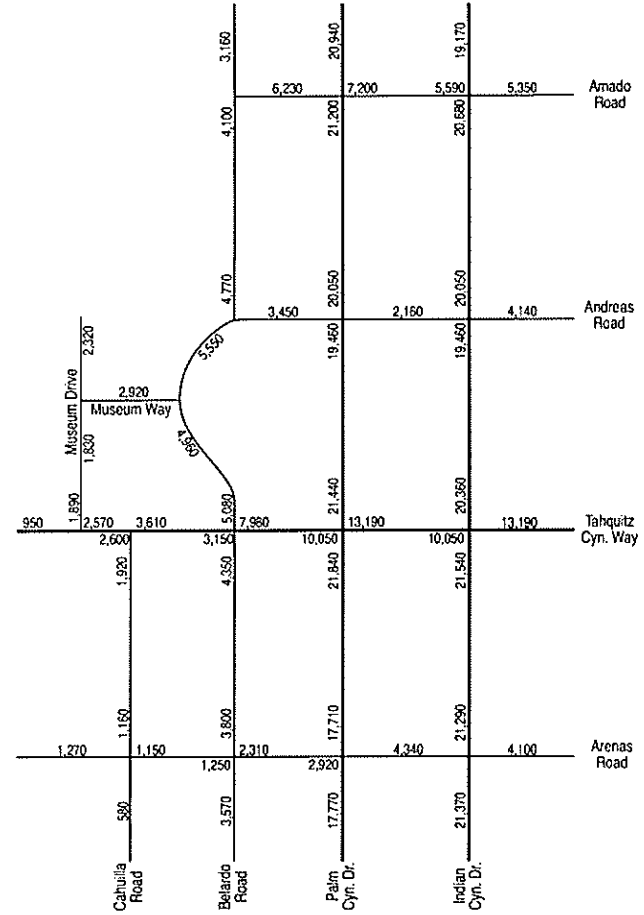


Figure 4-12  
Year 2030 Weekday Traffic Projections  
(With Less-Intense Alternative B)

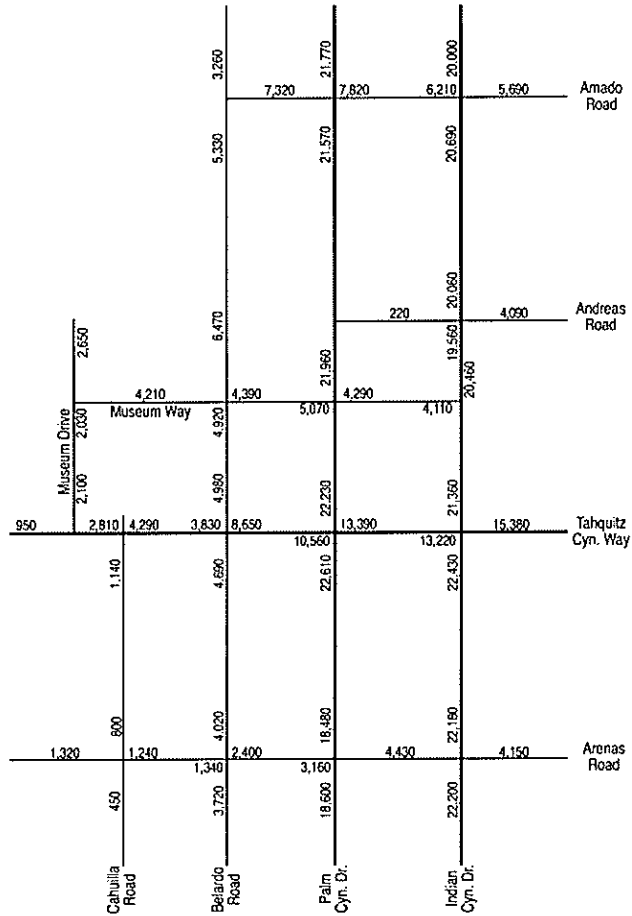
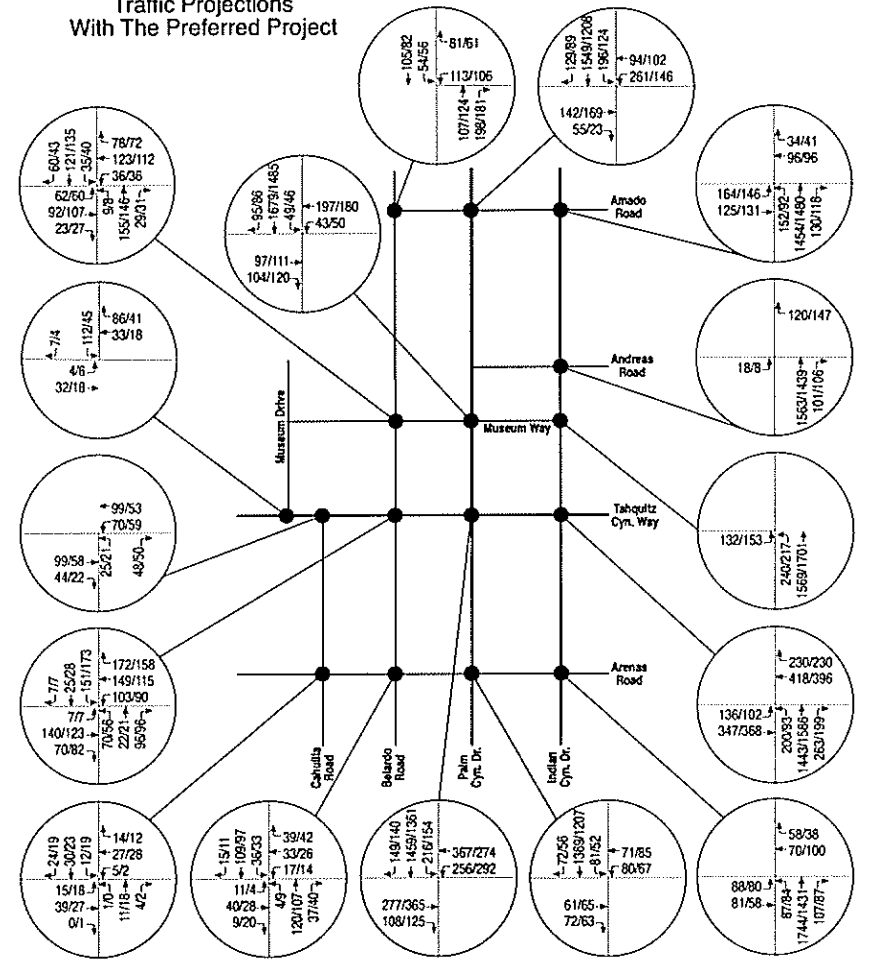


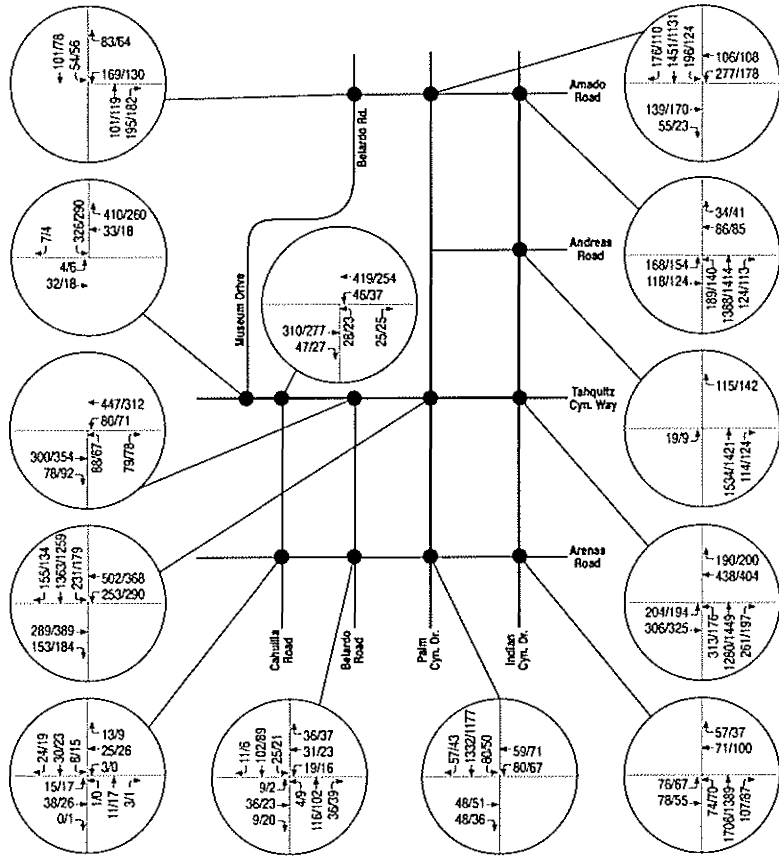
Figure 4-13  
Year 2030 Weekday Peak Hour  
Traffic Projections  
With The Preferred Project



Legend  
▲ 5/8 Midday/Evening Peak Hour Turning Volume



Figure 4-14  
Year 2030 Weekday Peak Hour Traffic Projections  
With The No-Project Alternative

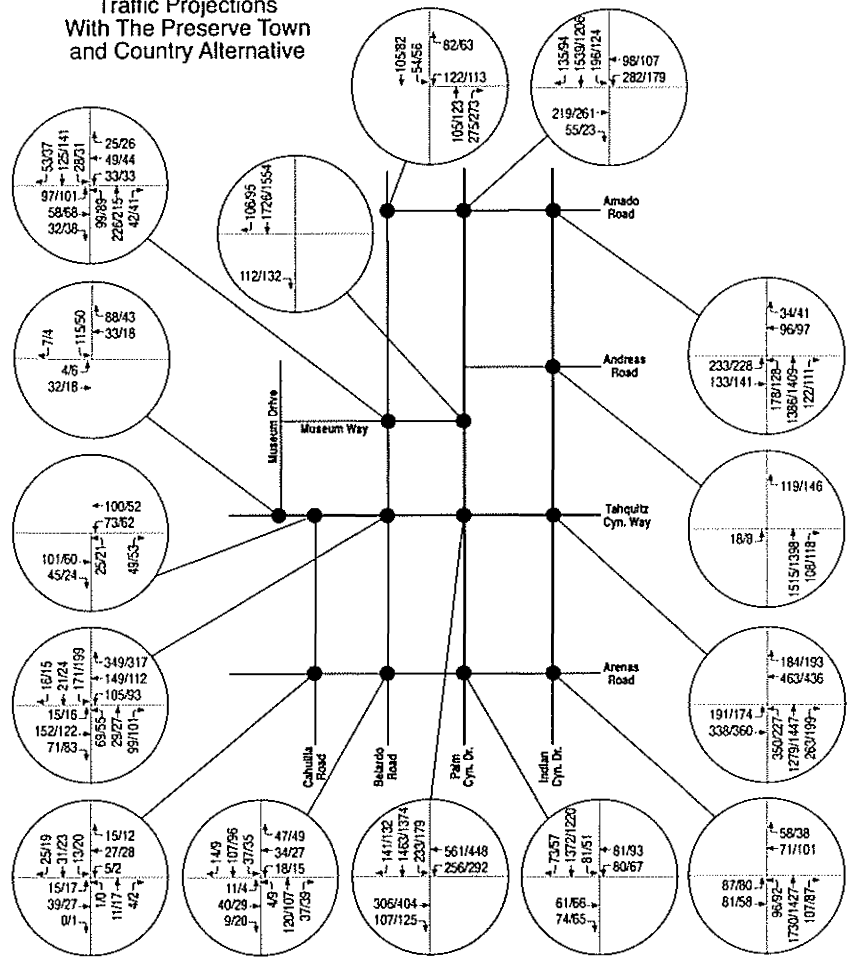


**Legend**  
↕/↔ Midday/Evening Peak  
Hour Turning Volume



Scale: 1" = 500'

Figure 4-15  
Year 2030 Weekday Peak Hour  
Traffic Projections  
With The Preserve Town  
and Country Alternative

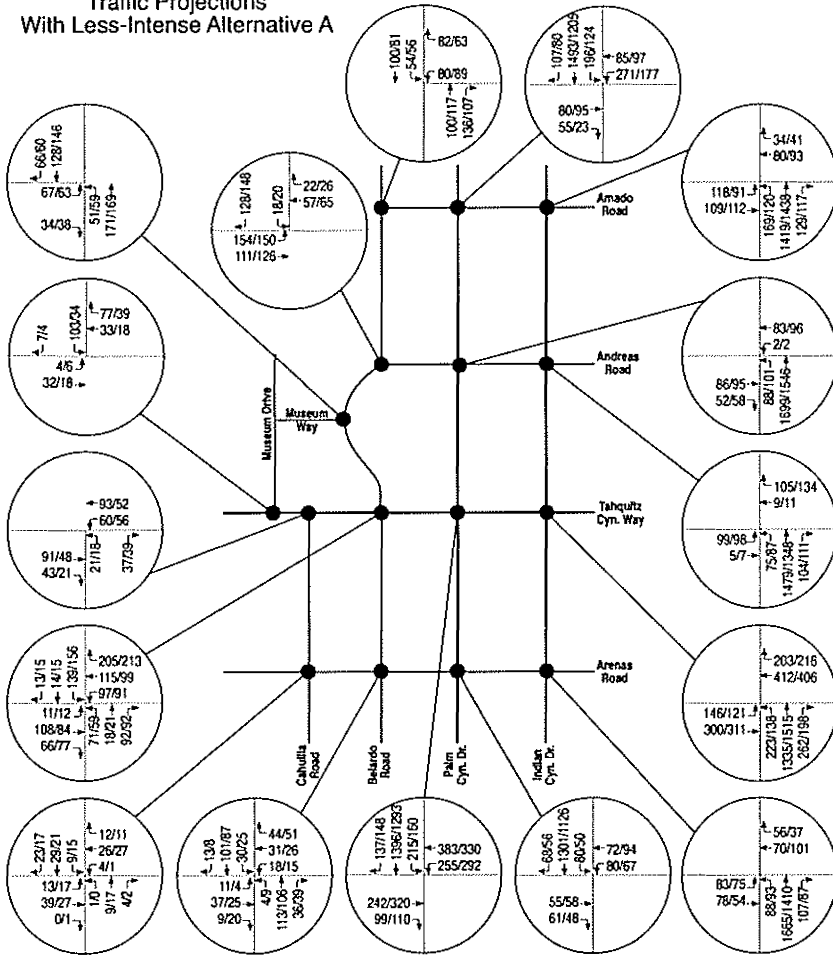


**Legend**  
↕/↔ Midday/Evening Peak  
Hour Turning Volume



Scale: 1" = 500'

Figure 4-16  
Year 2030 Weekday Peak Hour  
Traffic Projections  
With Less-Intense Alternative A



Legend  
 ↕ 50 Midday/Evening Peak  
 Hour Turning Volume



Scale: 1" = 500'

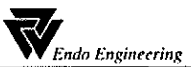
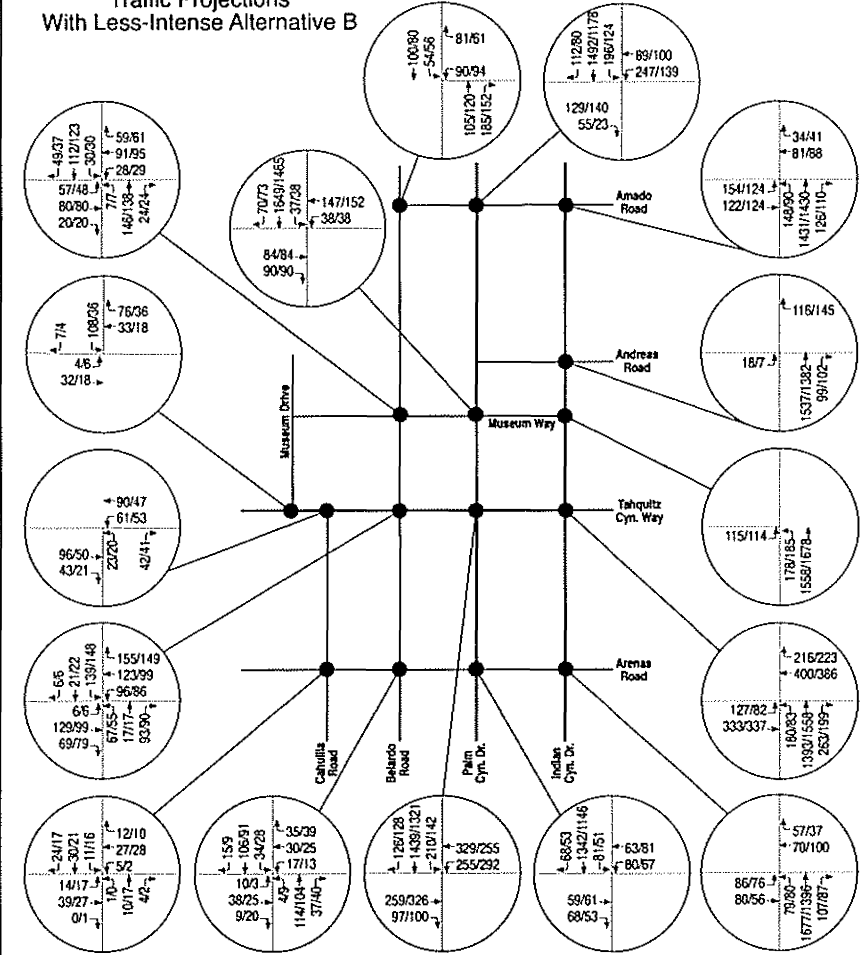


Figure 4-17  
Year 2030 Weekday Peak Hour  
Traffic Projections  
With Less-Intense Alternative B



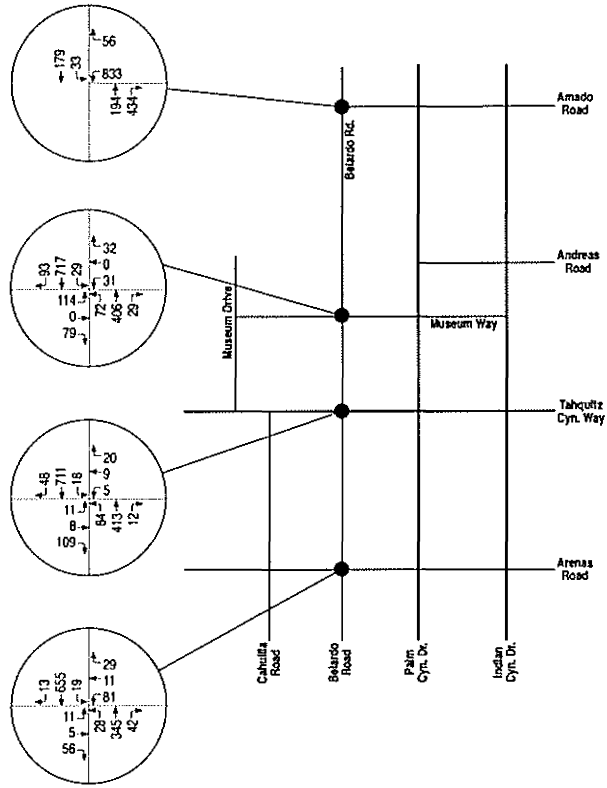
Legend  
 ↕ 50 Midday/Evening Peak  
 Hour Turning Volume



Scale: 1" = 500'



Figure 4-18  
Year 2030 Villagefest Peak Hour Traffic Projections  
With The Preferred Project

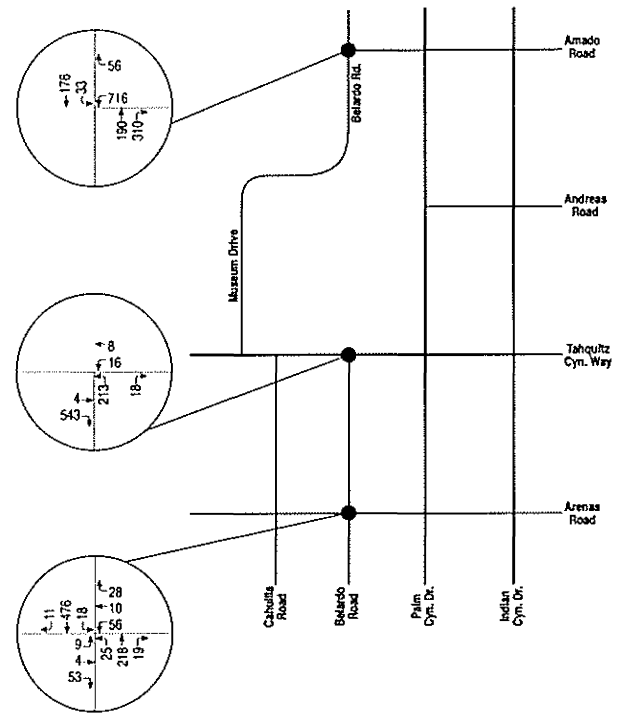


Legend  
 1.5 Evening Peak Hour Turning Volume



Scale: 1" = 500'

Figure 4-19  
Year 2030 Villagefest Peak Hour Traffic Projections  
With The No-Project Alternative

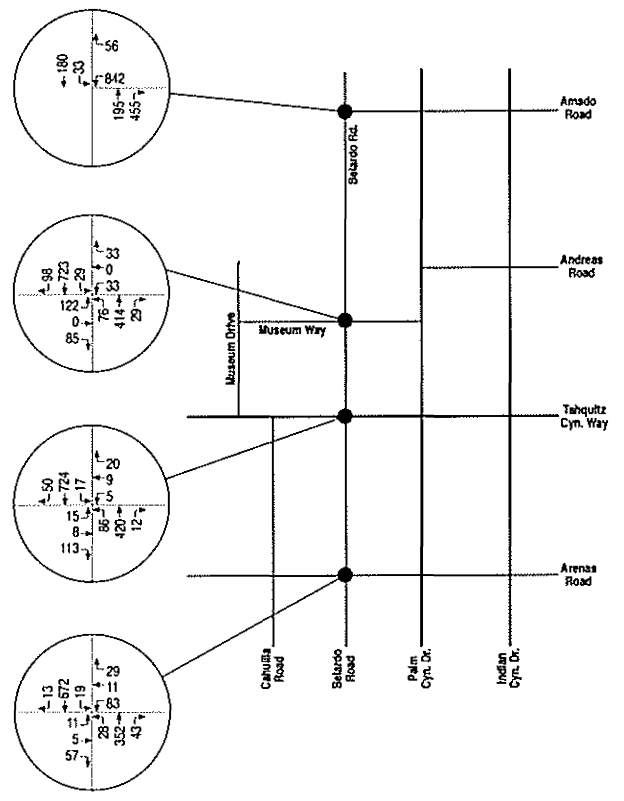


Legend  
 1.5 Evening Peak Hour Turning Volume



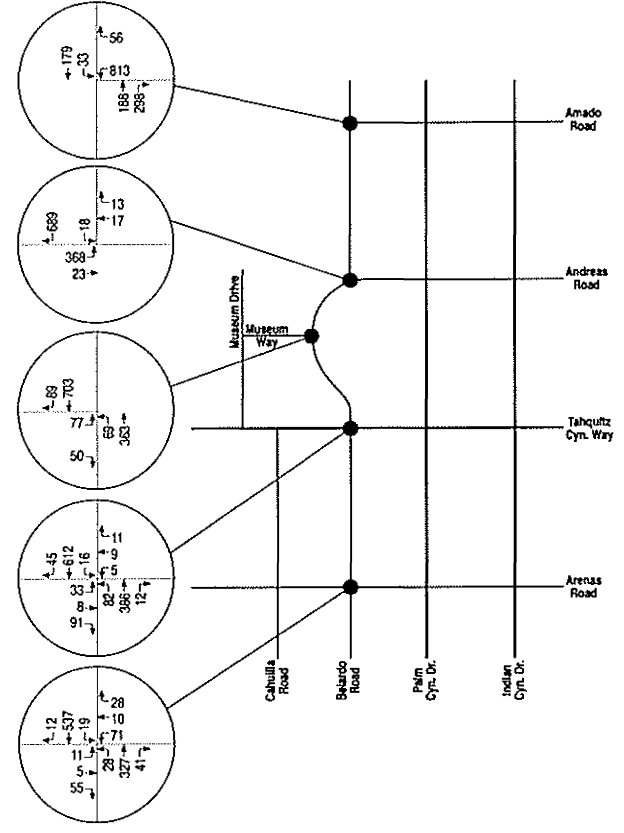
Scale: 1" = 500'

Figure 4-20  
 Year 2030 Villagefest Peak Hour Traffic Projections  
 With The Preserve Town and Country Alternative



**Legend**  
 5 Evening Peak Hour  
 Turning Volume

Figure 4-21  
 Year 2030 Villagefest Peak Hour Traffic Projections  
 With Less-Intense Alternative A



**Legend**  
 5 Evening Peak Hour  
 Turning Volume

Figure 4-22  
Year 2030 Villagefest Peak Hour Traffic Projections  
With Less-Intense Alternative B

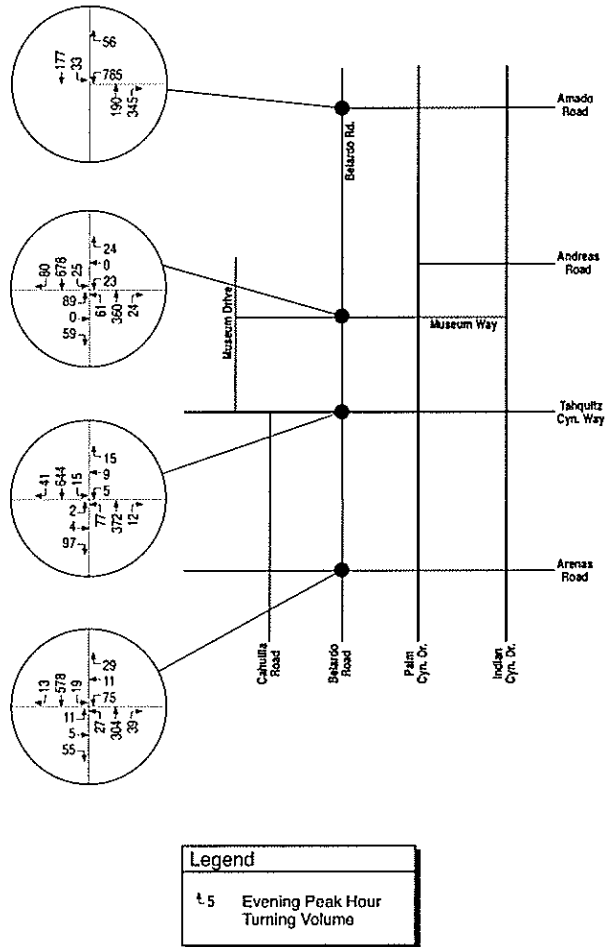


Figure 4-23  
Year 2030 Saturday Peak Hour Traffic Projections  
With The Preferred Project

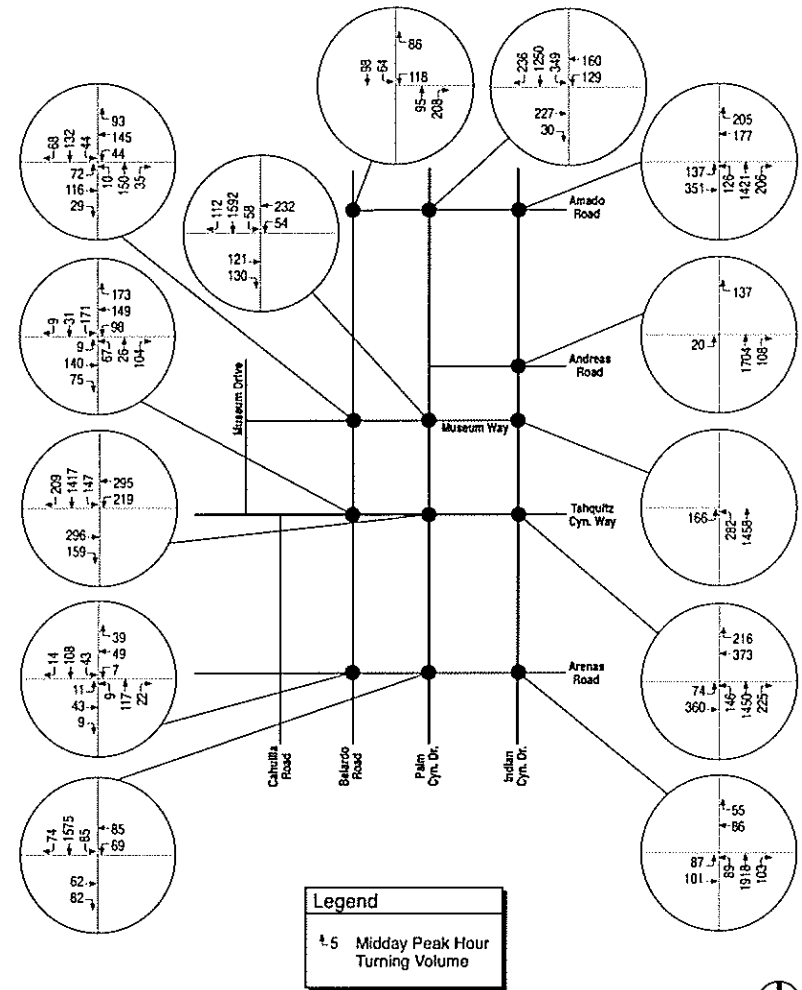
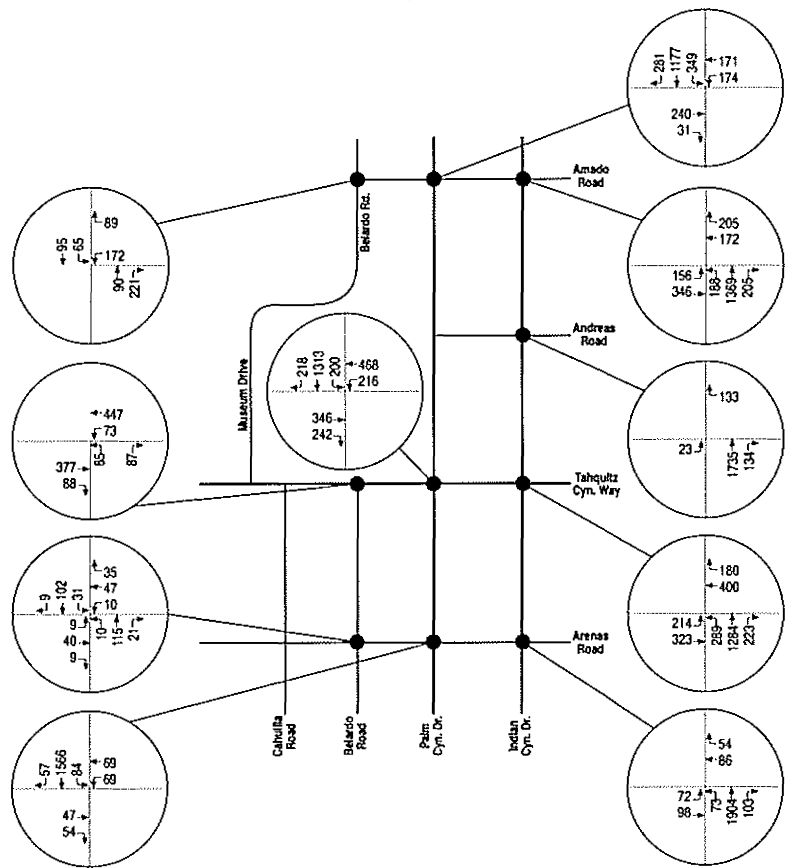


Figure 4-24  
Year 2030 Saturday Peak Hour Traffic Projections  
With The No-Project Alternative

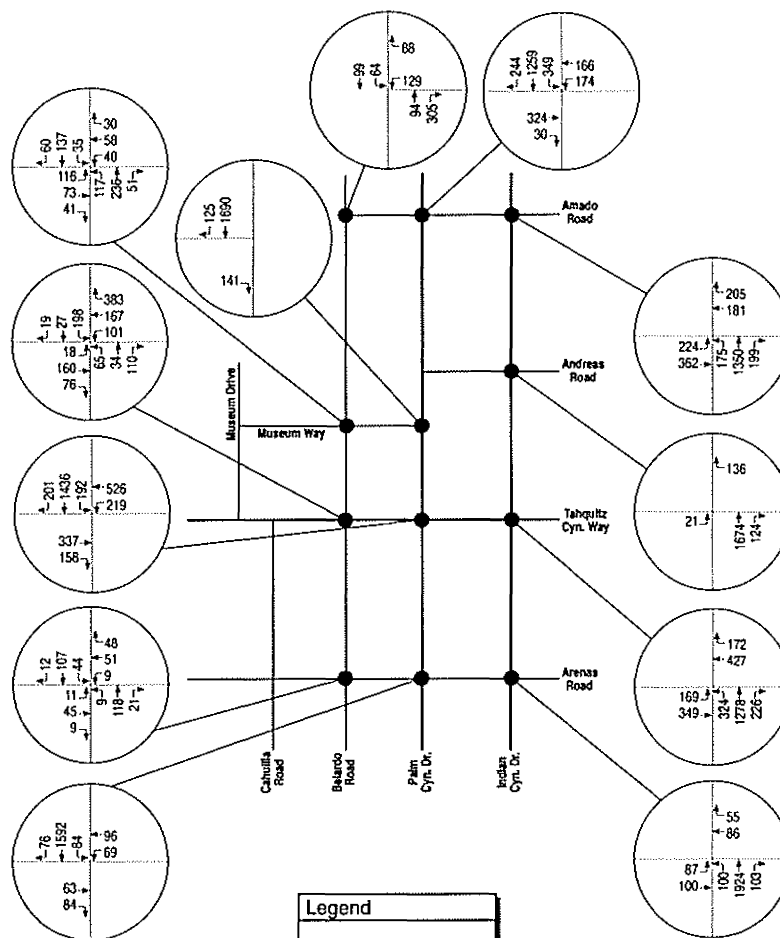


Legend  
↕ 5 Midday Peak Hour  
Turning Volume



Scale: 1" = 500'

Figure 4-25  
Year 2030 Saturday Peak Hour Traffic Projections  
With The Preserve Town and Country Alternative



Legend  
↕ 5 Midday Peak Hour  
Turning Volume



Scale: 1" = 500'

Figure 4-26  
Year 2030 Saturday Peak Hour Traffic Projections  
With Less-Intense Alternative A

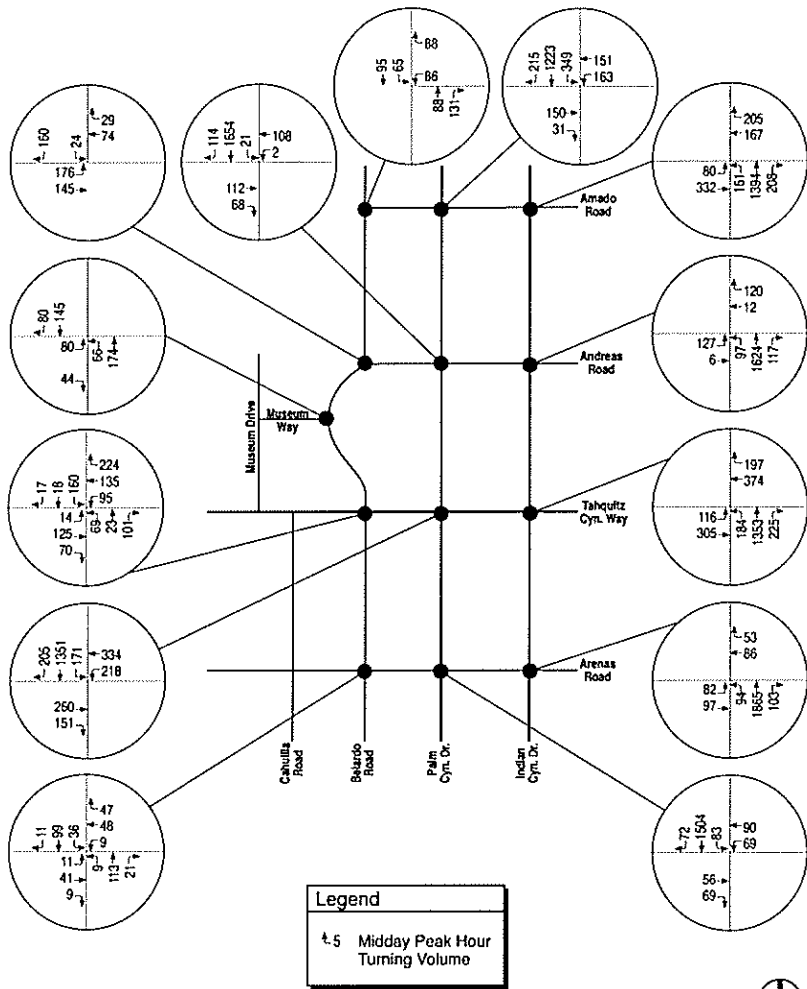
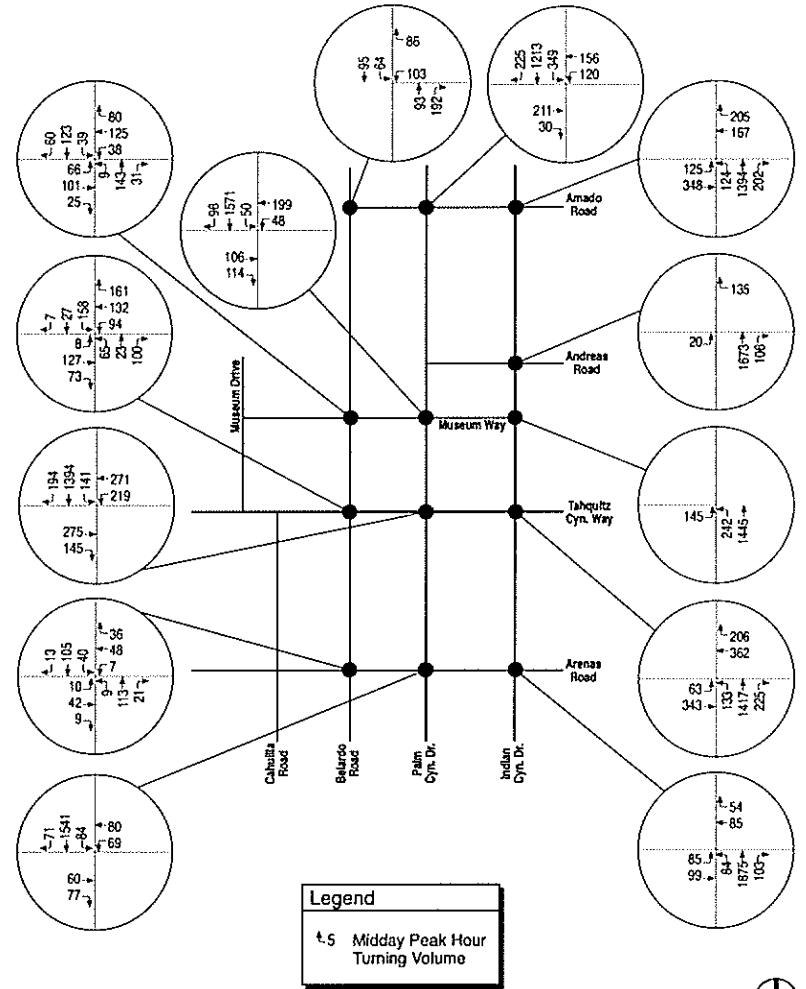


Figure 4-27  
Year 2030 Saturday Peak Hour Traffic Projections  
With Less-Intense Alternative B



**4D. PROJECTED LEVEL OF SERVICE ANALYSIS**

Midday and evening peak hour level of service evaluations were conducted for all of the key intersections to evaluate typical weekday conditions in the year 2030 and identify potentially significant impacts and required mitigation by site development alternative. In addition, the levels of service during the highest volume hour on Saturdays (the midday peak hour) with each site development alternative were evaluated for all of the key intersections along Indian Canyon Drive, Palm Canyon Drive and Belardo Road. An analysis of the Belardo Road key intersection levels of service during the highest hour on Villagefest Thursday evenings (between 6:30 p.m. and 8:30 p.m.) in the year 2030 was also conducted with the methodologies identified in the *Highway Capacity Manual* (HCM 2000).

**YEAR 2030 WEEKDAY PEAK HOUR CONDITIONS AT THE UNSIGNALIZED KEY INTERSECTIONS**

*Two-Way Stop-Controlled Intersections*

The future weekday midday and evening peak hour control delay values and the corresponding levels of service for the key intersections with two-way stop control (TWSC) are provided in Table 4-6. These control delay and level of service findings assume an eight percent heavy vehicle mix and the current key intersection traffic control and approach lanes except as shown in Figure 5-1 (for the Preferred Project and Less-Intense Alternative B), Figure 5-2 (for the Preserve Town and Country Center Alternative) or Figure 5-3 for Less-Intense Alternative A. No changes in the key intersection traffic control or existing intersection approach lanes was assumed for the No-Project Alternative.

The left-turns from the major streets are all projected to operate at acceptable levels (either LOS A or LOS B) during the weekday peak hours at the key intersections with TWSC in the year 2030. Therefore, only the control delay and LOS values associated with the minor-street approaches with the most delay at the intersections with TWSC were included in Table 4-6. For additional details, refer to the intersection control delay and LOS worksheets provided in Appendix B.

With the Preferred Project and all alternatives, the minor-street approaches with the most control delay are all projected to operate at LOS D or better levels of service during the weekday peak hours in the year 2030 at all of the key intersections with TWSC. Only one key intersection with TWSC is projected to have a minor-street approach that operates at LOS D in the peak hours. Motorists using northbound Belardo Road at Tahquitz Canyon Way are projected to experience levels of control delay associated with LOS D operation in the midday and evening peak hours with the Preserve Town and Country Center Alternative. All other minor-street approaches are projected to operate at LOS C or better levels of service during the peak hours on weekdays with the Preferred Project and all site development alternatives.

The levels of delay at the intersections evaluated with TWSC will be within the range considered acceptable by the City of Palm Springs on weekdays in the year 2030. The majority of the motorists at these intersections will be making through movements and experience LOS A operation in the peak hours. All of the motorists on the minor-street approaches will experience LOS D or better operation during the peak hours, which is considered acceptable.

**Table 4-6  
Year 2030 Weekday Peak Hour LOS At the Unsignalized Intersections<sup>a</sup>**

Intersection (Reference Number)	Mid-Day Overall Avg. at AWSC Minor St. Approach at TWSC		PM Overall Avg. at AWSC Minor St. Approach at TWSC	
	Delay <sup>b</sup> (Sec./Veh.)	Level of Service	Delay <sup>c</sup> (Sec./Veh.)	Level of Service
<b>PREFERRED PROJECT</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	11.7	LOS B	11.6	LOS B
- Museum Way (14)	{10.94}	{LOS B}	{10.90}	{LOS B}
- Tahquitz Canyon Way (9) <sup>d</sup>	24.0	LOS C	21.1	LOS C
- Arenas Road (10)	{8.54}	{LOS A}	{8.31}	{LOS A}
<b>Cahuilla Road @</b>				
- Tahquitz Canyon Way (11)	10.1	LOS B	9.5	LOS A
- Arenas Road (12)	9.6	LOS A	9.7	LOS A
<b>Museum Drive @</b>				
- Tahquitz Canyon Way (13)	9.7	LOS A	9.1	LOS A
<b>NO-PROJECT ALTERNATIVE</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	12.8	LOS B	12.0	LOS B
- Tahquitz Canyon Way (9)	17.6	LOS C	14.8	LOS B
- Arenas Road (10)	{8.37}	{LOS A}	{8.13}	{LOS A}
<b>Cahuilla Road @</b>				
- Tahquitz Canyon Way (11)	14.8	LOS B	12.2	LOS B
- Arenas Road (12)	9.6	LOS A	9.7	LOS A
<b>Museum Drive @</b>				
- Tahquitz Canyon Way (13)	14.6	LOS B	12.1	LOS B
<b>PRESERVE TOWN &amp; COUNTRY</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	11.9	LOS B	11.8	LOS B
- Museum Way (14)	{12.27}	{LOS B}	{12.10}	{LOS B}
- Tahquitz Canyon Way (9) <sup>d</sup>	34.9	LOS D	25.7	LOS D
- Arenas Road (10)	{8.56}	{LOS A}	{8.34}	{LOS A}
<b>Cahuilla Road @</b>				
- Tahquitz Canyon Way (11)	10.2	LOS B	9.5	LOS A
- Arenas Road (12)	9.6	LOS A	9.7	LOS A
<b>Museum Drive @</b>				
- Tahquitz Canyon Way (13)	9.8	LOS A	9.1	LOS A

- a. Delay=average control delay for the left-turn move from the major street that exhibits the most delay at TWSC intersections. Values shown in brackets reflect intersections with all-way stop control.
- b. The values shown in brackets reflect intersections that are all-way stop controlled.
- c. Delay=average control delay for the intersection approach that exhibits the most delay.
- d. This intersection was mitigated by moving the current TWSC from Belardo Road to Tahquitz Canyon Way and striping to add an eastbound and westbound left-turn lane. A dedicated westbound right-turn lane was also required with the Preserve Town & Country Alternative.



Table 4-6 (Continued)  
Year 2030 Weekday Peak Hour LOS  
At the Unsignalized Key Intersections

Intersection (Reference Number)	Overall Average for All-Way Stop Minor Approach for 2-Way Stop		Overall Average for All-Way Stop Minor Approach for 2-Way Stop	
	Delay (Sec./Veh.)	Level of <sup>b</sup> Service	Delay <sup>c</sup> (Sec./Veh.)	Level of <sup>b</sup> Service
<b>LESS INTENSE ALTERNATIVE A</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	11.0	LOS B	11.2	LOS B
- Museum Way (14) <sup>d</sup>	11.9	LOS B	12.1	LOS B
- Tahquitz Canyon Way (9) <sup>e</sup>	18.5	LOS C	17.5	LOS C
- Arenas Road (10)	[8.41]	[LOS A]	[8.22]	[LOS A]
<b>Cahuilla Road @</b>				
- Tahquitz Canyon Way (11)	9.9	LOS A	9.3	LOS A
- Arenas Road (12)	9.5	LOS A	9.7	LOS A
<b>Museum Drive @</b>				
- Tahquitz Canyon Way (13)	9.6	LOS A	8.7	LOS A
<b>LESS INTENSE ALTERNATIVE B</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	11.2	LOS B	11.3	LOS B
- Museum Way (14)	[9.89]	[LOS A]	[9.83]	[LOS A]
- Tahquitz Canyon Way (9)	19.3	LOS C	16.9	LOS C
- Arenas Road (10)	[8.44]	[LOS A]	[8.20]	[LOS A]
<b>Cahuilla Road @</b>				
- Tahquitz Canyon Way (11)	10.0	LOS A	9.4	LOS A
- Arenas Road (12)	9.6	LOS A	9.7	LOS A
<b>Museum Drive @</b>				
- Tahquitz Canyon Way (13)	9.7	LOS A	9.0	LOS A

- Delay=average control delay for the left-turn move from the major street that exhibits the most delay at TWSC intersections. Values shown in brackets reflect intersections that are all-way stop controlled.
- The values shown in brackets reflect intersections that are all-way stop controlled.
- Delay=average control delay for the intersection approach that exhibits the most delay.
- The intersection of Belardo Road and Museum Way was assumed to have two-way stop control with Less-Intense Alternative A but all-way stop control with the Preferred Project, the Preserve Town & Country Center Alternative and Less-Intense Alternative B.
- This intersection was mitigated by moving the existing TWSC from Belardo Road to Tahquitz Canyon Way and striping to add an eastbound and westbound left-turn lane.

**All-Way Stop-Controlled Intersections**

Year 2030 weekday peak hour overall intersection control delay and levels of service are provided in Table 4-6 for the key intersections that are currently or were assumed to be all-way stop controlled in the year 2030. An eight percent truck mix and the existing intersection approach lanes shown in Figure 5-1 through 5-3 were assumed to develop the control delay and LOS values in Table 4-6. As shown therein, all of the key intersections

that would be all-way stop controlled are projected to operate at acceptable levels of service (LOS A or LOS B) in the midday and evening peak hours on typical weekdays in the year 2030 with the Preferred Project and all alternatives.

**YEAR 2030 CONDITIONS AT THE UNSIGNALIZED KEY INTERSECTIONS DURING THURSDAY EVENINGS WITH VILLAGEFEST**

The year 2030 control delay values and the corresponding levels of service during the evening between 6:30 p.m. and 8:30 p.m. on Villagefest Thursdays at the key intersections with TWSC are provided in Table 4-7. These delay and LOS findings assume an eight percent heavy vehicle mix and the existing intersection approach lanes and traffic control shown in Figure 3-9 unless noted.

It can be seen from Table 4-7, that the left-turn movements from the major street at the key intersections with TWSC are projected to operate at LOS A. However, without mitigation, motorists using the minor-street approaches with the most delay at the unsignalized intersections along Belardo Road are projected to experience excessive control delay during the highest hour on Villagefest Thursday evenings.

The southbound left-turn movement from Belardo Road onto Amado Road is projected to operate at LOS A during the hours of Villagefest in the year 2030. However, with the existing two-way stop control, the westbound minor-street approach at the intersection of Belardo Road and Amado Road is projected to operate at LOS F with the Preferred Project and all site development alternatives.

Based upon the traffic projections for the year 2030 following build out of the project, the Amado Road (minor-street) approach to the unsignalized key intersection of Belardo Road may require signalization to provide LOS D or better operation during the evening hours on Thursdays when Villagefest is under way. Since signal warrants would be met on only a couple of hours per week, this intersection was not evaluated as a signalized intersection for the future year 2030 scenarios, to clearly identify the potential project-related impact.

The intersection of Belardo Road and Museum Way is projected to operate at LOS F with all-way stop control with the Preferred Project and with all site development alternatives except the No-Project Alternative (which does not include this intersection). This intersection would require signalization to meet the City of Palm Springs minimum performance standard of LOS D with the Preferred Project, the Preserve Town and Country Center Alternative, or Less-Intense Alternative B.

The intersection of Belardo Road and Arenas Road is projected to operate at LOS F with all-way stop control with the Preferred Project and with the Preserve Town & Country Center Alternative. This intersection is projected to operate at LOS B with the No-Project Alternative and LOS C with Less-Intense Alternative A. With Less Intense Alternative B, this intersection would operate at LOS D in the year 2030 during Villagefest.

**YEAR 2030 SATURDAY MIDDAY PEAK HOUR CONDITIONS AT THE UNSIGNALIZED KEY INTERSECTIONS**

The future control delay values and the corresponding levels of service for the key intersections with TWSC are provided in Table 4-8. These delay and LOS findings assume the existing key intersection approach lanes and traffic control, except where shown in Figure 5-1 through Figure 5-3. As shown in Table 4-8, the key intersections with AWSC are projected to operate at acceptable levels of service in the midday peak hour on Saturdays in the year 2030 with the Preferred Project and all site development alternatives.

**Table 4-7**  
**Year 2030 Unsignalized Intersection**  
**Peak Hour Delay and LOS During Villagefest<sup>a</sup>**  
**(Peak Season 6:30 PM-8:30 PM)**

Intersection (Reference Number)	Overall Average or Major St. Left		Approach With Most Delay	
	Delay <sup>a</sup> (Sec./Veh.)	Level of Service	Delay <sup>b</sup> (Sec./Veh.)	Level of Service
<b>PREFERRED PROJECT</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	9.0	LOS A	1,107 (WB)	LOS F
- Museum Way (14)	[392.28]	[LOS F]	718.39 (SB)	LOS F
- Tahquitz Canyon Way (9)	9.9	LOS A	25.4 (WB)	LOS D
- Arenas Road (10) <sup>c</sup>	[84.63]	[LOS F]	144.32 (SB)	LOS F
<b>NO-PROJECT ALTERNATIVE</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	8.4	LOS A	59.7 (WB)	LOS F
- Tahquitz Canyon Way (9)	8.7	LOS A	9.9 (NB)	LOS A
- Arenas Road (10)	[14.96]	[LOS B]	18.48 (SB)	LOS C
<b>PRESERVE TOWN &amp; COUNTRY</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	9.1	LOS A	1,141 (WB)	LOS F
- Museum Way (14)	[438.11]	[LOS F]	808.38 (SB)	LOS F
- Tahquitz Canyon Way (9)	9.8	LOS A	25.9 (WB)	LOS D
- Arenas Road (10)	[107.54]	[LOS F]	186.48 (SB)	LOS F
<b>LESS INTENSE ALTERNATIVE A</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	8.6	LOS A	1,908 (WB)	LOS F
- Andreas Road (18)	8.1	LOS A	15.4 (SB)	LOS C
- Museum Way (14) <sup>d</sup>	9.9	LOS A	32.3 (EBL)	LOS D
- Tahquitz Canyon Way (9)	9.4	LOS A	24.5 (WB)	LOS C
- Arenas Road (10)	[23.19]	[LOS C]	31.77 (SB)	LOS D
<b>LESS INTENSE ALTERNATIVE B</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	8.7	LOS A	919.1 (WB)	LOS F
- Museum Way (14)	[212.26]	[LOS F]	369.65 (SB)	LOS F
- Tahquitz Canyon Way (9)	9.5	LOS A	22.7 (WB)	LOS C
- Arenas Road (10)	[29.90]	[LOS D]	44.18 (SB)	LOS E

- Delay=average control delay for the left-turn move from the major street that exhibits the most delay at TWSC intersections. Values shown in brackets reflect intersections that are all-way stop controlled.
- Delay=average control delay for the intersection approach that exhibits the most delay.
- This intersection can be mitigated with the Preferred Project by changing the existing all-way stop control to two-way stop control (with Arenas Road functioning as the minor street) thereby reducing the delay to 48.8 seconds/vehicle (LOS B) on the approach with the most delay (westbound).
- TWSC was assumed with Belardo Road as the major street and a dedicated eastbound left- and right-turn lane.

**Table 4-8**  
**Year 2030 Saturday Peak Hour LOS**  
**At the Unsignalized Key Intersections<sup>a</sup>**  
**(Peak Season 11:00 AM-1:00 PM)**

Intersection (Reference Number)	Overall Average or Major St. Left		Approach With Most Delay	
	Delay <sup>b</sup> (Sec./Veh.)	Level of Service	Delay <sup>c</sup> (Sec./Veh.)	Level of Service
<b>PREFERRED PROJECT</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	8.1	LOS A	11.8	LOS B
- Museum Way (14)	[12.36]	[LOS B]	12.98	LOS B
- Tahquitz Canyon Way (9)	7.9	LOS A	27.4	LOS D
- Arenas Road (10)	[8.58]	[LOS A]	8.84	LOS A
<b>NO-PROJECT ALTERNATIVE</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	8.1	LOS A	13.0	LOS B
- Tahquitz Canyon Way (9)	8.6	LOS A	18.6	LOS C
- Arenas Road (10)	[8.42]	[LOS A]	8.59	LOS A
<b>PRESERVE TOWN &amp; COUNTRY</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	8.4	LOS A	12.1	LOS B
- Museum Way (14)	[14.65]	[LOS B]	17.98	LOS C
- Tahquitz Canyon Way (9)	8.0	LOS A	33.0	LOS D
- Arenas Road (10)	[8.63]	[LOS A]	8.90	LOS A
<b>LESS INTENSE ALTERNATIVE A</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	7.9	LOS A	11.1	LOS B
- Andreas Rd. (18)	7.8	LOS A	10.2	LOS B
- Museum Way (14)	9.40	LOS A	9.80	LOS A
- Tahquitz Canyon Way (9)	7.8	LOS A	23.1	LOS C
- Arenas Road (10)	[8.47]	[LOS A]	8.67	LOS A
<b>LESS INTENSE ALTERNATIVE B</b>				
<b>Belardo Road @</b>				
- Amado Road (8)	8.1	LOS A	11.5	LOS B
- Museum Way (14)	[11.12]	[LOS B]	11.24	LOS B
- Tahquitz Canyon Way (9)	7.8	LOS A	21.9	LOS C
- Arenas Road (10)	[8.49]	[LOS A]	8.73	LOS A

- Delay=average control delay for the left-turn move from the major street that exhibits the most delay at TWSC intersections. Values shown in brackets reflect intersections that are all-way stop controlled.
- The values shown in brackets reflect intersections that are all-way stop controlled.
- Delay=average control delay for the intersection approach that exhibits the most delay.

The key intersections with two-way stop control are also projected to provide acceptable levels of service in the midday peak hour on Saturdays in the year 2030 with the Preferred Project and all site development alternatives. The minor-street approaches at the intersections with TWSC are expected to operate at LOS D or better service levels.

**YEAR 2030 WEEKDAY PEAK HOUR CONDITIONS AT THE SIGNALIZED KEY INTERSECTIONS**

Table 4-9 summarizes the year 2030 weekday peak hour levels of service at the signalized key intersections with the Preferred Project and all site development alternatives. Without mitigation, the signalized key intersections are projected to operate at LOS C or better service levels during the peak hours on typical weekdays with the Preferred Project and all site development alternatives.

**YEAR 2030 THURSDAY EVENING PEAK HOUR CONDITIONS AT THE SIGNALIZED KEY INTERSECTIONS DURING VILLAGEFEST**

Table 4-10 summarizes the year 2030 Thursday evening peak hour levels of service at the two key intersections that will require signalization with the Preferred Project and all site development alternatives. With traffic signals as mitigation, these two intersections are projected to operate at LOS B or better service levels during the evening peak hours on Villagefest Thursdays with site traffic.

**YEAR 2030 SATURDAY MIDDAY PEAK HOUR CONDITIONS AT THE SIGNALIZED KEY INTERSECTIONS**

Table 4-11 provides midday peak hour levels of service in the year 2030 at the signalized key intersections on a typical Saturday in the peak season. Levels of service are shown therein for conditions with the Preferred Project and all site development alternatives. Without mitigation, the signalized key intersections are projected to operate at LOS C or better service levels during the peak hours on typical Saturdays in the year 2030 with the Preferred Project and all site development alternatives.

**4E. TRAFFIC SIGNAL ANALYSIS**

The justification for the installation of a traffic signal at an intersection is based on the warrants adopted by Caltrans and the Federal Highway Administration. There are several types of traffic signal warrants including: an eight-hour vehicle volume warrant (including minimum vehicle volume and interruption of continuous traffic warrants), a four-hour vehicle volume warrant, a peak hour vehicle volume warrant, a pedestrian volume warrant, a school crossing warrant, a coordinated signal system warrant, a crash warrant, and a roadway network warrant.

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

**Table 4-9  
Year 2030 Weekday Peak Hour LOS At the Signalized Key Intersections<sup>a</sup>**

Intersection (Reference Number)	Mid-Day Peak Hour		Evening Peak Hour	
	Delay (Sec./Veh.)	V/C Ratio (LOS)	Delay (Sec./Veh.)	V/C Ratio (LOS)
<b>PREFERRED PROJECT</b>				
<b>Indian Canyon Drive @</b>				
- Amado Road (1)	8.2	0.47 (A)	7.8	0.45 (A)
- Andreas Road (2)	3.5	0.31 (A)	3.3	0.28 (A)
- Museum Way (16)	5.4	0.41 (A)	5.7	0.44 (A)
- Tahquitz Canyon Way (3)	26.0	0.83 (C)	24.2	0.80 (C)
- Arenas Road (4)	7.6	0.47 (A)	7.6	0.40 (A)
<b>Palm Canyon Drive @</b>				
- Amado Road (5)	12.4	0.72 (B)	9.2	0.50 (A)
- Museum Way (15)	7.7	0.57 (A)	7.4	0.51 (A)
- Tahquitz Canyon Way (6)	19.9	0.73 (B)	23.2	0.78 (C)
- Arenas Road (7)	8.2	0.47 (A)	8.1	0.41 (A)
<b>NO-PROJECT ALTERNATIVE</b>				
<b>Indian Canyon Drive @</b>				
- Amado Road (1)	8.1	0.47 (A)	7.8	0.45 (A)
- Andreas Road (2)	3.5	0.31 (A)	3.3	0.28 (A)
- Tahquitz Canyon Way (3)	27.5	0.85 (C)	25.7	0.82 (C)
- Arenas Road (4)	7.3	0.45 (A)	7.3	0.38 (A)
<b>Palm Canyon Drive @</b>				
- Amado Road (5)	12.8	0.72 (B)	10.0	0.52 (B)
- Tahquitz Canyon Way (6)	19.7	0.72 (B)	22.7	0.78 (C)
- Arenas Road (7)	7.2	0.45 (A)	7.0	0.38 (A)
<b>PRESERVE TOWN &amp; COUNTRY</b>				
<b>Indian Canyon Drive @</b>				
- Amado Road (1)	9.9	0.53 (A)	9.8	0.52 (A)
- Andreas Road (2)	3.5	0.30 (A)	3.2	0.28 (A)
- Tahquitz Canyon Way (3)	30.5	0.88 (C)	28.3	0.86 (C)
- Arenas Road (4)	7.6	0.47 (A)	7.6	0.40 (A)
<b>Palm Canyon Drive @</b>				
- Amado Road (5)	14.9	0.78 (B)	11.4	0.58 (B)
- Tahquitz Canyon Way (6)	20.8	0.75 (C)	24.1	0.81 (C)
- Arenas Road (7)	8.3	0.48 (A)	8.2	0.41 (A)

a. An eight percent truck mix and the existing traffic control and intersection approach lane geometrics were assumed. Based upon Version 4.1e of the HCS 2000 software. See Appendix B for the signalized intersection HCS worksheets.

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

Table 4-9 (Continued)  
Year 2030 Weekday Peak Hour LOS  
At the Signalized Key Intersections<sup>a</sup>

Intersection (Reference Number)	Mid-Day Peak Hour		Evening Peak Hour	
	Delay <sup>b</sup> (Sec./Veh.)	V/C Ratio (LOS)	Delay <sup>b</sup> (Sec./Veh.)	V/C Ratio (LOS)
<b>LESS INTENSE ALTERNATIVE A</b>				
<b>Indian Canyon Drive @</b>				
- Amado Road (1)	6.9	0.42 (A)	6.7	0.39 (A)
- Andreas Road (2)	4.8	0.38 (A)	4.8	0.36 (A)
- Tahquitz Canyon Way (3)	24.3	0.80 (C)	23.8	0.79 (C)
- Arenas Road (4)	7.4	0.45 (A)	7.5	0.39 (A)
<b>Palm Canyon Drive @</b>				
- Amado Road (5)	11.8	0.69 (B)	9.0	0.51 (A)
- Andreas Road (18)	6.7	0.52 (A)	7.4	0.50 (A)
- Tahquitz Canyon Way (6)	18.8	0.69 (B)	21.5	0.74 (C)
- Arenas Road (7)	7.9	0.45 (A)	7.9	0.38 (A)
<b>LESS INTENSE ALTERNATIVE B</b>				
<b>Indian Canyon Drive @</b>				
- Amado Road (1)	7.8	0.46 (A)	7.2	0.41 (A)
- Andreas Road (2)	3.5	0.30 (A)	3.2	0.27 (A)
- Museum Way (16)	5.1	0.39 (A)	5.1	0.41 (A)
- Tahquitz Canyon Way (3)	24.2	0.80 (C)	22.6	0.77 (C)
- Arenas Road (4)	7.6	0.45 (A)	7.5	0.39 (A)
<b>Palm Canyon Drive @</b>				
- Amado Road (5)	11.6	0.68 (B)	8.6	0.47 (A)
- Museum Way (15)	6.4	0.52 (A)	6.6	0.48 (A)
- Tahquitz Canyon Way (6)	19.3	0.70 (B)	21.9	0.74 (C)
- Arenas Road (7)	8.0	0.46 (A)	7.9	0.39 (A)

a. Delay = Intersection Control Delay (seconds per vehicle). An eight percent truck mix and the existing traffic control and intersection approach lane geometries were assumed. Based upon Version 4.1e of the HCS 2000 software. See Appendix B for the signalized intersection HCS worksheets.

b. LOS is the intersection level of service. LOS was determined from the delay ( $\leq 10$  sec./veh.=LOS A;  $>10$  and  $\leq 20$  sec./veh.=LOS B;  $>20$  and  $\leq 35$  sec./veh.=LOS C;  $>35$  and  $\leq 55$  sec./veh.=LOS D;  $>55$  and  $\leq 80$  sec./veh.=LOS E;  $>80$  sec./veh. = LOS F) per 2000 HCM page 10-16.

**Belardo Road at Tahquitz Canyon Way (9)**

Based upon the peak hour traffic volumes on Villagefest Thursdays, the intersection of Belardo Road and Tahquitz Canyon Way would meet urban peak hour signal warrants with the Preferred Project and all alternatives only with single-lane approaches. Since Tahquitz Canyon Way is approximately 52 feet wide at this intersection, the approaches are not considered single-lane approaches and peak hour urban signal warrants do not appear to be met. On typical weekdays and Saturdays in the year 2030 peak hour urban signal volume warrants do not appear to be met at this intersection.

Table 4-10  
Year 2030 Peak Hour Delay and LOS During Villagefest  
At the Belardo Road Intersections That Require Signalization  
(Peak Season 6:30 PM-8:30 PM)

Signalized Intersection	Year 2030 Evening Peak Hour		
	Delay <sup>a</sup> (Sec./Veh.)	Critical V/C Ratio	LOS <sup>b</sup>
<b>Belardo Road @ Amado Road (8)</b>			
- With the Preferred Project	11.3	0.69	B
- With the No-Project Alternative	12.9	0.79	B
- With the Preserve Town & Country Alternative	13.1	0.80	B
- With Less Intense Alternative A	13.3	0.77	B
- With Less Intense Alternative B	12.3	0.74	B
<b>Belardo Road @ Museum Way (14)</b>			
- With the Preferred Project	10.0	0.69	A
- With the Preserve Town & Country Alternative	10.7	0.71	B
- With Less Intense Alternative B	7.9	0.62	A

a. Delay = Intersection Control Delay (seconds per vehicle). Assumes an eight percent truck mix. Based upon Version 4.1f of the HCS 2000 software. See Appendix C for the signalized intersection HCS worksheets.

b. LOS is the intersection level of service. LOS was determined from the delay ( $\leq 10$  sec./veh.=LOS A;  $>10$  and  $\leq 20$  sec./veh.=LOS B;  $>20$  and  $\leq 35$  sec./veh.=LOS C;  $>35$  and  $\leq 55$  sec./veh.=LOS D;  $>55$  and  $\leq 80$  sec./veh.=LOS E;  $>80$  sec./veh. = LOS F) per 2000 HCM page 10-16.

**Belardo Road at Amado Road (8)**

Based upon the peak hour traffic volumes on Villagefest Thursdays, the intersection of Belardo Road and Amado Road would meet urban peak hour signal warrants with the Preferred Project and all alternatives. This intersection does not appear to meet the peak hour urban signal volume warrants on typical weekdays or Saturdays in the year 2030.

**Palm Canyon Drive at Museum Way (15)**

This proposed intersection is projected to meet peak hour traffic signal volume warrants with the Preferred Project and Less-Intense Alternative B. Signal warrants do not appear to be met at this intersection with the Preserve Town & Country Alternative.

**Belardo Road at Museum Way (14)**

Based upon the peak hour traffic volumes on Villagefest Thursdays in the year 2030, the intersection of Belardo Road and Museum Way appears to meet the urban peak hour traffic signal warrants with the Preferred Project, the Preserve Town & Country Alternative, and Less-Intense Alternative B. This intersection does not appear to meet the peak hour urban signal volume warrants on typical weekdays or Saturdays in the year 2030.

Table 4-12 provides a summary of the traffic signal warrant analysis undertaken for the unsignalized key intersections within the study area. Existing intersections and future internal intersections were checked to determine if they would warrant signalization with the Preferred Project or the site development alternatives.

Table 4-11  
Year 2030 Saturday Peak Hour LOS  
At the Signalized Key Intersections  
(Peak Season 11:00 AM-1:00 PM)

Signalized Intersection	Year 2030 Peak Hour		
	Delay <sup>a</sup> (Sec./Veh.)	Critical V/C Ratio	LOS <sup>b</sup>
<b>PREFERRED PROJECT</b>			
<b>Indian Canyon Drive @</b>			
- Amado Road (1)	10.2	0.55	LOS B
- Andreas Road (2)	3.6	0.34	LOS A
- Museum Way (16)	6.1	0.42	LOS A
- Tahquitz Canyon Way (3)	22.5	0.77	LOS C
- Arenas Road (4)	8.0	0.51	LOS A
<b>Palm Canyon Drive @</b>			
- Amado Road (5)	10.3	0.62	LOS B
- Museum Way (15)	8.9	0.58	LOS A
- Tahquitz Canyon Way (6)	19.0	0.70	LOS B
- Arenas Road (7)	8.2	0.52	LOS A
<b>NO-PROJECT ALTERNATIVE</b>			
<b>Indian Canyon Drive @</b>			
- Amado Road (1)	10.3	0.55	LOS B
- Andreas Road (2)	3.7	0.35	LOS A
- Tahquitz Canyon Way (3)	21.3	0.58	LOS C
- Arenas Road (4)	7.5	0.48	LOS A
<b>Palm Canyon Drive @</b>			
- Amado Road (5)	11.8	0.67	LOS B
- Tahquitz Canyon Way (6)	19.4	0.73	LOS B
- Arenas Road (7)	6.9	0.50	LOS A
<b>PRESERVE TOWN &amp; COUNTRY ALTERNATIVE</b>			
<b>Indian Canyon Drive @</b>			
- Amado Road (1)	11.0	0.56	LOS B
- Andreas Road (2)	3.6	0.34	LOS A
- Tahquitz Canyon Way (3)	27.1	0.84	LOS C
- Arenas Road (4)	7.9	0.51	LOS A
<b>Palm Canyon Drive @</b>			
- Amado Road (5)	13.7	0.73	LOS B
- Tahquitz Canyon Way (6)	20.2	0.74	LOS C
- Arenas Road (7)	8.4	0.53	LOS A

- a. Delay = Intersection Control Delay (seconds per vehicle). An eight percent truck mix and the existing traffic control and intersection approach lane geometries were assumed. Based upon Version 4.1e of the HCS 2000 software. See Appendix B for the signalized intersection HCS worksheets.
- b. LOS is the intersection level of service. LOS was determined from the delay ( $\leq 10$  sec./veh.=LOS A;  $>10$  and  $\leq 20$  sec./veh.=LOS B;  $>20$  and  $\leq 35$  sec./veh.=LOS C;  $>35$  and  $\leq 55$  sec./veh.=LOS D;  $>55$  and  $\leq 80$  sec./veh.=LOS E;  $>80$  sec./veh. = LOS F) per 2000 HCM page 10-16.

Table 4-11  
Year 2030 Saturday Peak Hour LOS  
At the Signalized Key Intersections

Signalized Intersection	Year 2030 Midday Peak Hour		
	Delay <sup>a</sup> (Sec./Veh.)	Critical V/C Ratio	LOS <sup>b</sup>
<b>LESS INTENSE ALTERNATIVE A</b>			
<b>Indian Canyon Drive @</b>			
- Amado Road (1)	9.7	0.54	LOS A
- Andreas Road (2)	5.4	0.44	LOS A
- Tahquitz Canyon Way (3)	22.2	0.75	LOS C
- Arenas Road (4)	7.8	0.49	LOS A
<b>Palm Canyon Drive @</b>			
- Amado Road (5)	9.7	0.61	LOS A
- Andreas Road (17)	8.2	0.54	LOS A
- Tahquitz Canyon Way (6)	17.9	0.67	LOS B
- Arenas Road (7)	7.8	0.49	LOS A
<b>LESS INTENSE ALTERNATIVE B</b>			
<b>Indian Canyon Drive @</b>			
- Amado Road (1)	10.1	0.55	LOS B
- Andreas Road (2)	3.6	0.33	LOS A
- Museum Way (16)	5.6	0.40	LOS A
- Tahquitz Canyon Way (3)	21.5	0.74	LOS C
- Arenas Road (4)	7.9	0.49	LOS A
<b>Palm Canyon Drive @</b>			
- Amado Road (5)	9.8	0.59	LOS A
- Museum Way (15)	8.1	0.55	LOS A
- Tahquitz Canyon Way (6)	18.4	0.68	LOS B
- Arenas Road (7)	8.0	0.51	LOS A

a. Delay = Intersection Control Delay (seconds per vehicle). Assumes the existing intersection approach lane geometrics and traffic control and an eight percent truck mix. Based upon Version 4.1e of the HCS 2000 software. See Appendix B for the signalized intersection HCS worksheets.

b. LOS is the intersection level of service. LOS was determined from the delay ( $\leq 10$  sec./veh.=LOS A;  $>10$  and  $\leq 20$  sec./veh.=LOS B;  $>20$  and  $\leq 35$  sec./veh.=LOS C;  $>35$  and  $\leq 55$  sec./veh.=LOS D;  $>55$  and  $\leq 80$  sec./veh.=LOS E;  $>80$  sec./veh. = LOS F) per 2000 HCM page 10-16.

**Indian Canyon Drive at Museum Way (16)**

This proposed intersection is projected to meet peak hour traffic signal volume warrants with the Preferred Project and Less-Intense Alternative B. Signal warrants do not appear to be met at this intersection with the Preserve Town & Country Alternative.

**Belardo Road at Andreas Road (18)**

This intersection does not appear to meet the peak hour urban signal volume warrants on typical weekdays or Saturdays in the year 2030. The peak hour level of service is projected to be acceptable on Villagefest Thursdays and the volumes are not expected to meet the peak hour urban traffic signal volume warrant.

Table 4-12  
Traffic Signal Warrant Analysis Summary

Scenario and Intersection For Which Peak Hour Warrant Was Checked	Weekday Peak Hour	Saturday Highest Hour	Villagefest <sup>a</sup> Highest Hour
<b>Preferred Project</b>			
- Belardo Road at Amado Road (8)	No	No	Yes
- Belardo Road at Tahquitz Cyn. Way (9)	No	No	No
- Belardo Road at Arenas Road (10)	No	No	No
- Belardo Road at Museum Way (14)	No	No	Yes
- Palm Canyon Drive and Museum Way (15)	Yes	Yes	No
- Indian Canyon Drive and Museum Way (16)	Yes	Yes	No
<b>No-Project Alternative</b>			
- Belardo Road at Amado Road (8)	No	No	Yes
- Belardo Road at Tahquitz Cyn. Way (9)	No	No	No
- Belardo Road at Arenas Road (10)	No	No	No
<b>Preserve Town &amp; Country Center Alt.</b>			
- Belardo Road at Amado Road (8)	No	No	Yes
- Belardo Road at Tahquitz Cyn. Way (9)	No	No	No
- Belardo Road at Arenas Road (10)	No	No	No
- Belardo Road at Museum Way (14)	No	No	Yes
- Palm Canyon Drive and Museum Way (15)	No	No	No
<b>Less-Intense Alternative A</b>			
- Belardo Road at Amado Road (8)	No	No	Yes
- Belardo Road at Tahquitz Cyn. Way (9)	No	No	No
- Belardo Road at Arenas Road (10)	No	No	No
- Belardo Road at Museum Way (14)	No	No	No
- Palm Canyon Drive and Andreas Road (17)	Yes	Yes	No
- Belardo Road at Andreas Road (18)	No	No	No
<b>Less-Intense Alternative B</b>			
- Belardo Road at Amado Road (8)	No	No	Yes
- Belardo Road at Tahquitz Cyn. Way (9)	No	No	No
- Belardo Road at Arenas Road (10)	No	No	No
- Belardo Road at Museum Way (14)	No	No	Yes
- Palm Canyon Drive and Museum Way (15)	Yes	Yes	No
- Indian Canyon Drive and Museum Way (16)	Yes	Yes	No

a. The MUTCD (Section 4C.04) states that peak hour signal warrants are intended for use at locations where traffic conditions are such that minor-street traffic suffers undue delay for a minimum of one hour of an average day.

#### 4F. SITE ACCESS AND INTERNAL CIRCULATION ANALYSIS

With five major access roadways and five minor access roadways available for site traffic, the project site appears to have adequate access for the proposed land uses. With only minor mitigation, the roadway network within the study area is projected to operate at acceptable levels of service in the peak hours on typical weekdays and Saturdays in the peak season of the year 2030 upon build out of the Preferred Project or any of the four project alternatives. However, without additional mitigation (including traffic signals)

#### CONDITIONS DURING VILLAGEFEST

The analysis of conditions during Thursday evenings with Villagefest assumed that Palm Canyon Drive would be closed between Amado Road and Baristo Road (one-eighth mile south of Arenas Road). The existing Villagefest traffic was added to the traffic associated with the proposed project and fifteen cumulative projects. The potential for congestion along Belardo Road during Villagefest may cause local traffic to avoid Belardo Road during Villagefest activities. As congestion and delay increase within an area, motorists familiar with the area would tend to modify their driving patterns to avoid areas with perceived congestion. This may involve scheduling their trips before or after the congested period or selecting alternate routes to divert around the area of perceived congestion.

On Thursdays, during the Villagefest street fair, the closure of Palm Canyon Drive (between 6:00 p.m. and 10:00 p.m. from October through May or between 7:00 p.m. through 10:00 p.m. from June through September) causes approximately 1,218 southbound vehicles to divert from Palm Canyon Drive to Belardo Road (between Amado Road and Arenas Road). To accommodate the higher traffic volumes and minimize delay for vehicles on Belardo Road during Villagefest, it may be desirable to employ two-way stop control at the intersections of the east/west cross-streets along Belardo Road (i.e., Tahquitz Canyon Way, Museum Way and Arenas Road). However, the east/west traffic volumes on some of these cross-streets appear to be higher on days without Villagefest than the traffic volumes on Belardo Road. Therefore, some of these intersections may operate slightly better most of the time with stop signs controlling the north/south traffic on Belardo Road.

#### *Belardo Road At Amado Road (8)*

The unsignalized intersection of Belardo Road and Amado Road is projected to operate at acceptable levels of service with two-way stop control during the peak hours on typical weekdays and Saturdays in the peak season of the year 2030. However, without signalization, this intersection is projected to fail on Thursday evenings during Villagefest, when approximately 1,218 additional vehicles pass through this intersection (turning left from Amado Road onto southbound Belardo Road). If signalization is not desirable as mitigation for impacts projected to occur for only four hours on only one evening per week, a traffic control officer could direct traffic. Another option may be to close Belardo Road, north of Amado Road, during the evening hours of Villagefest Thursdays. This would eliminate the conflicting movements at this intersection and permit the diverted motorists to make uninterrupted left turns from westbound Amado Road onto southbound Belardo Road.

#### *Belardo Road at Andreas Road (18)*

With Less-Intense Alternative A, the proposed intersection of Belardo Road and Andreas Road on-site appears to be designed to facilitate east/west site access to/from Palm Canyon Drive and Indian Canyon Drive. This intersection is proposed as a tee intersection with Belardo Road (the north leg) functioning as the minor street and controlled by a STOP sign. Andreas Road (the east leg) appears to be functioning as the major street, with east/west traffic in the through lanes moving directly onto Belardo Road (the west leg of the major street) without stopping or turning. Belardo Road (the west leg) then curves to the south, where it intersects Museum Way.

This intersection configuration is projected to provide acceptable levels of service in the peak hours on typical weekdays and Saturdays in the year 2030. However, it would fail

on Villagefest days, when all of the additional southbound traffic on Belardo Road (diverted to Belardo Road by the closure of Palm Canyon Drive) would be forced to stop and turn right. The additional northbound traffic curving eastbound on Belardo Road during Villagefest would be required to turn left at Andreas Road to continue north on Belardo Road to Amado Road with this configuration. With the proposed configuration, the major flow through this intersection on Villagefest Thursdays would not be utilizing the major street approaches to this intersection.

This intersection would provide acceptable levels of service during the peak hours on Villagefest days as well as weekdays and Saturdays if re-configured with Belardo Road as the north/south major street and Andreas Road as the minor east/west street. Westbound traffic would be controlled by a STOP sign whereas north/south traffic would not be stopped.

#### ***Belardo Road At Museum Way (14)***

The future intersection of Belardo Road and Museum Way on-site is projected to operate at acceptable levels of service in the peak hours without signalization during typical weekdays and Saturdays in the year 2030. All-way stop control at this intersection would improve vehicular and pedestrian access to the western portion of the project site, and facilitate site access via Museum Way. However, the intersection of Belardo Road and Museum Way is projected to experience significant congestion on Thursday evenings during Villagefest. To provide acceptable levels of service during Villagefest, the intersection of Belardo Road and Museum Way may need to be signalized.

#### ***Belardo Road At Tahquitz Canyon Way (9)***

The intersection of Belardo Road and Tahquitz Canyon Way is currently two-way stop controlled with the northbound approach of Belardo Road functioning as the minor-street approach. All of the site development concepts (except the No-Project Alternative) would include the reconnection of Belardo Road as a north/south through street, between Tahquitz Canyon Way and Amado Road.

The intersection of Belardo Road and Tahquitz Canyon Way is projected to provide acceptable peak hour levels of service in the year 2030 on typical weekdays and Saturdays with either all-way stop control or with two-way stop control. The westbound approach on Tahquitz Canyon Way is projected to serve the most entering traffic, except during Villagefest (when Tahquitz Canyon Way is closed west of Palm Canyon Drive). During Villagefest, the traffic volume increases dramatically on Belardo Road. To best accommodate weekday traffic, Saturday traffic, and Villagefest traffic, the existing traffic control at the intersection of Belardo Road and Tahquitz Canyon Way would need to be modified such that the two-way stop controls the westbound and eastbound approaches. Tahquitz Canyon Way is 52 feet wide adjacent to Belardo Road. Therefore, on-street parallel parking could be permitted on both sides of the roadway (occupying 16 feet) leaving 36 feet of pavement width for a single through lane in each direction and a left-turn lane in each direction on Tahquitz Canyon Way at Belardo Road.

With the Preserve Town & Country Alternative, the unsignalized key intersection of Belardo Road and Tahquitz Canyon Way is projected to operate at LOS E with all-way stop control. However, this intersection would provide acceptable levels of service with two-way stop control, provided the westbound approach on Tahquitz Canyon Way is improved to provide an exclusive right-turn lane for vehicles entering the project site as well as a westbound through lane and a dedicated left-turn lane. Tahquitz Canyon Way would function as the minor street and STOP signs would control the eastbound and westbound intersection approaches.

#### ***Belardo Road At Arenas Road (10)***

The intersection of Belardo Road and Arenas Road is currently all-way stop controlled. This traffic control is projected to provide acceptable levels of service in the peak hours on typical weekdays and Saturdays in the year 2030. However, on Thursdays when Villagefest increases traffic volumes along Belardo Road substantially, the intersection of Belardo Road and Arenas Road is projected to fail with the Preferred Project and the Preserve Town & County Center Alternative. To minimize delay at this intersection during Villagefest, the traffic control at the intersection of Belardo Road and Arenas Road could be changed from all-way stop control to two-way stop control, with the eastbound and westbound approaches on Arenas Road controlled by STOP signs. With this change in traffic control, rather than the overall intersection operating at LOS F, the minor-street approach with the most delay would provide LOS E operation with the Preferred Project.

### **4G. OTHER CONSIDERATIONS**

#### **PEDESTRIAN AND TRANSIT CONSIDERATIONS**

Studies of non-home-based pedestrian trips in midtown Manhattan have found that available walkway space and building floor space occupied by retail, restaurant, and office uses significantly affect the presence of pedestrians. The average pedestrian trip length was found to be approximately 0.33 mile and walk-only trips were found to compose about 26 percent of the total CBD trip-ends.<sup>2</sup>

When detailed plans are developed for the project site, they need to address pedestrian traffic within the study area (and particularly within the mixed-use development proposed) by improving pedestrian safety and mobility. If people are not walking, the infrastructure is insufficient, has serious gaps, or other barriers to accessibility that have been overlooked.

Midblock pedestrian crossings exist on Palm Canyon Drive, directly opposite the Desert Fashion Plaza, with a pedestrian traffic signal and an uncontrolled pedestrian crossing exists on Palm Canyon Drive, just north of Andreas Road. The proposed project will create many destinations close to each other at sufficient densities to support public transit. By supporting a balanced transportation system, the proposed project will make walking and public transit attractive options for site access. Public spaces and common areas will be properly located on-site to provide an interesting, and inviting environment for pedestrians that is illuminated during the nighttime hours to enhance safety. The common areas and public spaces will be constructed with ADA compliant accessible routes to facilitate mobility and access by pedestrians, people with strollers, people in wheelchairs, and those who use walkers. Pedestrian connections will be provided to sidewalks, easy-to-access crosswalks, and shared-use paths.

#### ***Safety***

Most accidents are a result of human error. Therefore, collisions will not be completely eliminated as long as vehicles and pedestrians share the same space. Pedestrian safety improvements generally include the provision of pedestrian facilities (sidewalks, crosswalks, traffic control devices, lighting, pedestrian signal timing adjustments and WALK/DON'T WALK displays, and roadway design strategies) as well as enforcement of existing traffic laws, and educational programs targeting both motorists and pedestrians. If

2. Zupan, J.M. and B Pushkarev; "Pedestrian Travel Demand", Highway Research Board; Highway Research Record, Issue Number 377, 1971.

a review of pedestrian accident records in the CBD is undertaken and accident rates are found to be higher than expected at particular locations, specific countermeasures can be identified. These measures may include: removing on-street parking in areas where it obstructs the line of sight between motorists and pedestrians; implementing speed-reduction measures; installing additional nighttime lighting; relocating bus stops or mail boxes; installing signs or sidewalk barriers to guide pedestrians to safer crossing locations; providing bus pull-out areas, prohibiting left-turn maneuvers or right-turn-on-red maneuvers; adding special pedestrian signal phasing (e.g., exclusive protected pedestrian signal or leading pedestrian interval)

Since high volumes of traffic reduce a pedestrian's perceived safety, high volume roadways can be barriers to pedestrians. However, traffic speed is usually more critical to pedestrian safety than traffic volume. A pedestrian hit by a vehicle traveling 40 mph has an 85 percent chance of being killed. If the collision occurs at 30 mph, the likelihood of the accident being fatal for the pedestrian drops to 45 percent. The fatality rate is only five percent if the vehicle is moving at 20 mph when the collision occurs.

Fast moving vehicles increase the likelihood of pedestrians being hit because motorists are less likely to see a pedestrian and stop in time to avoid a collision. A vehicle traveling at 31 mph will need approximately 200 feet to stop, which may exceed the available sight distance. At 19 mph, motorists need only 100 feet to stop. Therefore, traffic calming measures and street designs with reduced design speeds can have considerable safety benefits for pedestrians, motorists, and cyclists.

The percentage of trips made by walking has been shown to increase dramatically as the distance to a transit station decreases. Since walking and transit are complementary, good walking conditions for pedestrians are also inducements to use public transportation. Most public transportation trips include a pedestrian trip at one or both ends. Therefore, good public transportation, with buses that run frequently and are reliable is essential to achieving a walkable downtown. Transit stops should be accessible, comfortable, visible, and well lit to provide a sense of personal security.

#### **ADA COMPLIANT ACCESSIBLE ROUTES**

The Americans with Disabilities Act (ADA) mandates improvements to ensure that all people, including those with disabilities, have equal access to transportation. ADA design standards require all new building construction (and additions to or alterations of existing buildings) to provide accessible routes for all pedestrians to ensure access and mobility for the physically challenged. Accessibility features to accomplish this include the provision of: adequate time for pedestrians to cross streets, well-designed curb ramps, limited driveways, and wide sidewalks that are clear of obstructions (such as poles, signs, and street trees located in the middle of the sidewalk).

If gratings are located in walking surfaces (such as around the base of street trees) they can have no spaces greater than 0.5 inch wide in one direction. Gratings with elongated openings must be placed with the long dimension of the openings perpendicular to the dominant direction of travel.

At least one accessible route, with a minimum width of 36 inches, must be provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones (if provided) and public streets or sidewalks, to an accessible building entrance. In addition, at least one accessible route must connect accessible buildings, accessible facilities, accessible elements, and accessible spaces that are on the

openings must be placed with the long dimension of the openings perpendicular to the dominant direction of travel.

At least one accessible route, with a minimum width of 36 inches, must be provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones (if provided) and public streets or sidewalks, to an accessible building entrance. In addition, at least one accessible route must connect accessible buildings, accessible facilities, accessible elements, and accessible spaces that are on the project site. Protruding objects must not reduce the clear width of an accessible route or maneuvering space.

#### **PARKING CONSIDERATIONS**

In general, streets should not be used as parking lots. On-street parking generally decreases through-traffic capacity, impedes traffic flow, and increases crash potential. If the primary function of arterial streets is the movement of vehicles, it would be desirable to prohibit parking on urban arterial streets. The elimination of on-street parking increases the capacity and safety of urban arterial streets.

However, within urban central business districts, there is a demand for short-duration on-street parking to provide for the delivery and pick-up of goods at businesses and small specialty retail shops. Where adequate off-street parking facilities are generally not available or unevenly distributed, developing land uses may necessitate the provision of on-street parking. When on-street parking is necessary and the available through traffic lanes can accommodate the projected traffic demand, parallel curb parking may be considered with a desirable minimum width of 8 feet. To provide better clearance from the traveled way and accommodate use of the parking lane during peak travel periods as a through travel lane, a parking lane width of 12 feet is desirable. This width is also sufficient to accommodate delivery vehicles and serve as a bicycle route, allowing a cyclist to maneuver around an open door on a motor vehicle.

#### ***Diagonal and Parallel On-Street Parking Proposed***

Accidents associated with curb-parking operations have been studied for more than thirty years. Drivers who slow while trying to find an unoccupied stall can be rear-ended or sideswiped. Approaching motorists, making sudden lane changes to avoid collisions with slow-moving vehicles, increase the potential for sideswipe and rear-end collisions. It is difficult to exit angled parking spaces without backing out into the through traffic lanes before adequate sight distance of approaching vehicles may be had, thereby creating a hazard to traffic flow and safety. The rate of accidents with angle parking has been shown to be approximately three times as great as that with parallel parking. Consequently, traffic engineers have historically opposed angle parking and worked for its removal to provide additional space for traffic lanes and maintain streets as safely as practical. When curb parking is allowed, numerous studies have shown that parallel parking creates far less interference with traffic flow and is much safer than angle parking for local streets, collector streets, and major routes.

Angled on-street parking should only be allowed under certain circumstances, depending on: the specific function and width of the street, the adjacent land use, the traffic volume, and anticipated traffic operations. Angled parking presents special problems because of the varying length of vehicles and the sight distance problems associated with vans and recreational vehicles. The extra length of such vehicles may interfere with the flow of traffic in the adjacent travel lane.



Angled parking along streets with even moderate traffic volumes results in substantially higher accident rates than parallel parking. With angled parking, it is often difficult to clearly see approaching vehicles before backing out into the flow of approaching traffic in the adjacent travel lane. If a delivery van or larger vehicle is parked adjacent to a passenger vehicle that is exiting a parking space, any vehicles approaching in the through travel lanes may not be visible until the passenger vehicle backs into the travel lane. This can cause a collision involving the vehicle leaving the parking space as well as rear-end collisions involving the approaching vehicles required to suddenly stop.

Most areas that have existing angled parking are attempting to remove the angled parking because of the high accident rates. The accident rate for angled parking on streets has been found to be approximately three times greater than that associated with parallel parking. For this reason, angled parking is generally used within parking lots, where travel speeds are very low and the need to efficiently accommodate through traffic is not a design consideration.

In particular, angled parking should be avoided on narrow high-speed high-volume streets. Based upon the findings of numerous traffic studies of the effects of angled parking on accident rates, the provision of angled parking on Palm Canyon Drive, Indian Canyon Drive, and Tahquitz Canyon Way as proposed, would adversely impact both traffic capacity and safety. Based upon the projected future traffic volumes and the relatively high parking turnover rates found in similar retail areas, the angle parking proposed would be expected to substantially increase the mid-block accident rates of all three of these roadways.

#### *Palm Canyon Drive and Indian Canyon Drive*

Parallel parking is currently permitted on most streets within the study area. The conceptual plans for the Museum Market Plaza would increase the on-street parking supply by providing angled on-street parking spaces along: both sides of Museum Way, the extension of Belardo Road through the Specific Plan area, the north side of Tahquitz Canyon Way (between Palm Canyon Drive and Museum Drive), and Street "A/B". Palm Canyon Drive would be widened to provide angled parking along the west side of the street, but would retain three travel lanes and the existing parallel parking along the east side of the roadway. Indian Canyon Drive would retain four through travel lanes, with parallel parking on the east side. However, the west side of Indian Canyon would be modified to provide angled parking in place of the existing parallel curb parking with the proposed project.

Palm Canyon Drive has an 80-foot right-of-way. Where Palm Canyon Drive currently includes three lanes with parallel parking on both sides, the driving surface width is approximately 50 feet wide. Angle parking spaces would occupy 19 feet of the pavement width, compared to the existing parallel parking lane that occupies approximately 8 feet of the pavement width. Therefore, Palm Canyon Drive would need to be widened by a minimum of eleven feet on the west side to accommodate a row of 45-degree angled parking spaces in place of the existing parallel on-street parking on the west side of the roadway (assuming each parking space is 9 feet wide and 17 feet long, as required by the Municipal Code).

With the proposed improvements, Palm Canyon Drive would be 63 feet wide (curb-to-curb). With 45-degree angled parking, the maneuvering width required by vehicles exiting each parking space (eleven feet of pavement width) would be within the adjacent 12-foot wide through traffic lane. This would require motorists exiting each of the angled parking spaces throughout the day and evening hours to back out into the adjacent travel

lane without a clear view of approaching traffic, creating a hazard while maneuvering and interfering with the flow of southbound traffic during each unparking maneuver.

Indian Canyon Drive currently has four travel lanes with parallel parking on both sides of the roadway. If Indian Canyon Drive were modified to include angled parking in place of the existing parallel parking on the west side of the street, the roadway width would need to be increased to maintain four travel lanes. The pavement on Indian Canyon Drive would be widened from the existing 61 feet to 75 feet with the proposed project. This would require motorists exiting the angled parking spaces on Indian Canyon Drive to back out into the adjacent travel lane without a clear view of approaching northbound traffic and interfere with the flow of traffic during unparking maneuvers. This would adversely impact both the capacity and safety of Indian Canyon Drive.

#### *Belardo Road and Tahquitz Canyon Way*

On-street parking maneuvers on two-lane streets can reduce the roadway capacity by one-third. Although the capacity of Belardo Road does not appear to be of concern with year 2030 weekday or Saturday traffic volumes, Belardo Road is projected to operate near the capacity of a two-lane street during Villagefest, especially in the vicinity of its intersection with Museum Way. Given the need to maintain capacity along Belardo Road during special events and Villagefest, as well as the potential for higher accident rates associated with angled parking along high-volume streets, the provision of angled on-street parking through the study area on Belardo Road would not be desirable from either a traffic capacity or traffic safety perspective.

The Museum Market Plaza Specific Plan proposes angled parking along the north side of Tahquitz Canyon Way, from Palm Canyon Drive to Museum Drive. The existing pavement width on Tahquitz Canyon Way appears to be 52 feet wide (32 feet on the north side of the centerline and 20 feet on the south side of the centerline). The existing right-of-way on Tahquitz Canyon Way appears to be 77 feet (44 feet on the north side of the centerline and 33 feet on the south side of the centerline). This appears to reflect right-of-way dedications and improvements consistent with a Secondary Thoroughfare (88-foot right-of-way and 64-foot curb-to-curb width) on the north side of the centerline and a Collector Street (66-foot right-of-way and 40-foot curb-to-curb width) on the south side of the centerline.

The portion of Tahquitz Canyon Way between Palm Canyon Drive and Belardo Road is currently classified as a Major Thoroughfare (100-foot right-of-way) in the Circulation Element of the *Palm Springs General Plan*. The portion of Tahquitz Canyon Way between Mission Drive and Belardo Road is currently classified as a Collector street within the *Palm Springs General Plan*. Based upon the General Plan build-out traffic projection of 8,900 vehicles per day for Tahquitz Canyon Way between Palm Canyon Drive and Belardo Road, the *General Plan Update Traffic Analysis* recommended a two-lane divided cross-section. West of Belardo Road, the *General Plan Update Traffic Analysis* projected a daily volume of 4,500 vehicles per day for Tahquitz Canyon Way and recommended a two-lane undivided cross-section. The City of Palm Springs may require the project proponent to dedicate the right-of-way associated with a Collector Street (a 66-foot right-of-way). The Specific Plan proposes a two-lane cross-section for Tahquitz Canyon Way adjacent to the project site.

As shown in Figure 2-9, the proposed improvements on Tahquitz Canyon Way (from Palm Canyon Drive to Museum Drive) would provide a single 12-foot wide travel lane in each direction with a 12-foot wide left-turn lane at intersections. The 8-foot wide parallel parking lane along the south side of Tahquitz Canyon Way would be retained. The

roadbed would be widened on the north side to provide a 19-foot wide space for 45-degree angled parking spaces from Palm Canyon Drive to Museum Drive. This would require a roadbed 63 feet wide (curb-to-curb). With the proposed improvements, the eleven feet of maneuvering space required by motorists leaving the proposed angled parking spaces would be provided by backing out into the adjacent 12-foot wide through lane without a clear view of approaching westbound traffic, which would interfere with the westbound traffic flow. This encroachment into the adjacent travel lane would result in a substantial reduction in roadway capacity and a substantial increase in accident rates along Tahquitz Canyon Way in this area.

Although the proposed cross-section appears to include sufficient space for a row of angled parking, the projected year 2030 weekday traffic volumes on Tahquitz Canyon Way are sufficient to make the provision of angled parking a concern. The segment of Tahquitz Canyon Way between Palm Canyon Drive and Belardo Road is projected to serve 10,560 vehicles on weekdays with the Preferred Project, (9,500 trips per day from the *General Plan Update Traffic Analysis*).

#### *60-Degree Angle Parking*

Although on-street parking makes adjacent development seem more accessible, parking maneuvers impede traffic in the through lanes on the adjacent roadway. In areas where site access is of primary importance, 60-degree angle parking can provide twice as many curbside parking spaces as parallel parking.

The Palm Springs Zoning Code requires a standard parking space nine feet wide and seventeen feet long. A row of 60-degree angle parking stalls (each 9 feet wide and 17 feet long) would occupy 19.3 feet of pavement width. However, passenger cars require an additional 17 feet of maneuvering space to enter and leave 60-degree angled parking spaces. Therefore, for a two-lane street, it is desirable to provide a minimum of 17 feet between the striped angled parking spaces and the roadway centerline to allow parking maneuvers to be completed without intruding on the opposing travel lane. Even with this 17-feet of pavement for maneuvering space, vehicles leaving 60-degree angled parking spaces will still back out into and briefly impede the vehicles approaching from behind them in the advancing travel lane. For a two-lane roadway with 60-degree angle parking on both sides and 17 feet of maneuvering space for each row of angled parking stalls, a minimum pavement width of 72.6 feet would be required.

#### *45-Degree Angle Parking*

Although 45-degree angled parking provides 18 percent fewer parking spaces than 60-degree angled parking, 45-degree angled spaces require only eleven feet of pavement width for maneuvering space to complete the parking maneuver. With a typical lane width of 12 feet, departing vehicles would still interfere with traffic flow in the advancing lane but would not be likely to encroach on the opposing travel lane.

With 45-degree angled parking, 18.4 feet of pavement width would be occupied by a single row of parking stalls adjacent to the curb (each 9 feet wide and 17 feet long). An additional 12 feet of pavement width would be required for the advancing travel lane. Therefore, a minimum roadbed 60.8 feet wide would be required to provide two 12-foot travel lanes with 45-degree angled parking on both sides of the roadway.

#### *Parking Lots and Parking Structures*

The *Palm Springs Zoning Code* identifies minimum aisle widths for parking lots. These aisles are designed to provide access to parking spaces for slow-moving motorists searching for an available space. A minimum width of 18 feet is required for a one-way parking aisle within a parking lot with 60-degree angled parking spaces. This minimum aisle width is consistent with the 17 feet of maneuvering space required to enter 60-degree angled parking discussed above (assuming a lateral clearance of one foot to ensure vehicles in the aisles to not clip the rear corner of parked vehicles on the opposite side of the aisle when entering and exiting spaces). For a two-way parking aisle with 60-degree angled parking, the minimum required parking lot aisle width in the Palm Springs Zoning Code is 22 feet. This requirement would result in vehicles blocking the advancing lane entirely and encroaching on the opposing lane by 5 feet when departing from their parking space.

With 45-degree angled parking, the Palm Springs Zoning Code requires a minimum parking aisle width of 21 feet for two-way traffic. However, the City of Palm Springs typically requires that travel lanes be designed with a minimum width of 12 feet (for a total of 24 feet for through travel lanes on a two-lane roadway). If the adjacent travel lane is 12 feet wide, parking maneuvers with 45-degree angled parking should be completed without encroachment on the opposing travel lane.

The Museum Market Plaza Specific Plan Development Standards and Guidelines address specific parking requirements in Table III-4. Block J is expected to accommodate 500 off-street parking spaces within a three-story parking structure with 75 reserved for use by the Mercado Plaza development. Parking for retail and office uses may be provided anywhere within the Specific Plan area. Parking requirements within each block may be reduced for shared use, if a parking study is prepared and approved by the Planning Commission. Up to 25 percent of the required parking for the Specific Plan area may be provided through the payment of in lieu fees. Loading spaces shall be provided in conformance with Section 93.07.01 of the Palm Springs Zoning Ordinance.

## 5. FINDINGS AND CONCLUSIONS

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The approach capacities of two-way streets (with and without parking) are 25 percent lower in central business districts than elsewhere for several reasons.<sup>1</sup> Transit vehicles and passenger vehicles stop to load or unload passengers with greater frequency. Pedestrians cause interference to vehicular traffic. There is more circulatory travel involving more turning vehicles as drivers circle blocks in search of empty on-street parking spaces. Delivery trucks are often present making brief stops which may impede the flow of traffic. There is a substantial amount of on-street curb parking with a high turnover rate which interferes with the flow of through traffic in the adjacent travel lanes as motorists shy away from the doors of parked vehicles that may be opened by drivers and passengers. Parked vehicles also present an obstacle that seriously limits the driver's ability to see pedestrians.

Since the traffic volumes within the study area vary substantially in magnitude and the traffic flows change direction by season, by day of the week, and by hour of the day, it is difficult to identify optimal traffic control devices, pedestrian crossing facilities, and other circulation improvements that are appropriate as mitigation for all future conditions. To do so requires an accurate identification and careful evaluation of peak season conditions on typical weekdays and weekend days as well as conditions during special events such as the Villagefest street fair on Thursday evenings.

### VARIATIONS IN TRAFFIC VOLUMES WITHIN THE STUDY AREA

The City of Palm Springs is a resort destination with an influx of part-time and vacationing residents in the peak season that increases the population by up to 70 percent. As a result, the traffic volumes within the study area increase dramatically in the winter and spring. Typical morning and evening peak hours are evident on the commuter routes on weekdays, with the evening peak flows being generally more intense than the morning peak flows. However, traffic volumes during the midday peak hour are also substantial and consistently exceed the volumes in the morning peak hour. This reflects the presence of business lunch traffic as well as visitors to the convention center, tourists, and retirees who tend to plan their trips to the Central Business District in the middle of the day to avoid the traditional morning and evening peak commuter travel hours.

#### *Annual Traffic Growth in the Study Area*

The peak season 24-hour traffic count data published annually by CVAG shows that since 1994, average weekday traffic (ADT) volumes along Palm Canyon Drive, south of Alejo Road, have ranged from 13,395 ADT to 14,529 ADT, with an average value of 13,860 vehicles per day. The weekday volume of 13,395 ADT on Palm Canyon Drive in 2007 was only slightly below the average volume over the past fourteen years. Therefore, traffic growth on this major thoroughfare has been relatively modest for more than a decade.

The CVAG weekday traffic count data for Indian Canyon Drive, south of Alejo Road, shows that since 1994, traffic volumes have ranged from 12,563 ADT to 18,068 ADT, with an average value of 15,835 vehicles per day. The 15,125 ADT on Indian Canyon Drive in the peak season of the year 2007 was slightly below the average volume over the past fourteen years. Like Palm Canyon Drive, the annual traffic growth on Indian Canyon Drive has been relatively low for more than a decade. However, that is not to imply that

1. *Highway Capacity Manual*, Special Report 87, Highway Research Board of the National Academy of Sciences-National Research Council, Washington, D.C., 1965.

the traffic volumes on the two major north/south thoroughfares providing access to downtown Palm Springs never varies.

#### *Traffic Volume Changes During Villagefest and Saturdays*

On Thursdays during Villagefest activities, Palm Canyon Drive is closed to southbound traffic (between Amado Road and Baristo Road) throughout the evening hours. During that time, southbound traffic diverts from Palm Canyon Drive to alternate parallel routes, primarily Belardo Road to the west and Calle Encilia to the east. Based upon 24-hour directional counts made in the off-peak month of July that were seasonally corrected with an expansion factor of 33 percent, Belardo Road (south of Amado Road) currently carries traffic volumes during the highest hour on Villagefest Thursday evenings (between 6:30 PM and 8:30 PM) which are more than triple (315 percent) the volume in the evening peak hour on a typical weekday in the peak season.

It should be noted that there is some uncertainty in this estimate of the traffic increase on Belardo Road during Villagefest, as it assumes that the traffic volumes during Villagefest vary seasonally with the local population. To eliminate this uncertainty, 24-hour traffic volumes could be made on Belardo Road, south of Amado Road, on a typical weekday and Villagefest Thursday in the peak winter months. However, even in the middle of summer without the seasonal correction, the highest hour traffic volumes on Belardo Road during Villagefest are more than double the traffic volume on this roadway in the evening peak hour on a typical weekday.

Peak hour turning movement traffic counts were made at the key intersections on a Wednesday, Thursday, and Saturday (from July 9 through July 12, 2008) to permit their service levels to be evaluated. On the same days, 24-hour directional machine traffic counts were made on five of the site primary access routes to identify changes in both the magnitude of the daily traffic volumes and the direction of the traffic flow during Villagefest days and on Saturdays. Three of the daily traffic counts were made on north/south access routes and two were made on east/west access routes. As shown in Table 5-1, the sum of the daily traffic volumes in the study area on a Villagefest Thursday exceeded the typical weekday traffic volumes by 2.75 percent. The sum of the daily traffic counts in the study area was seventeen percent greater on a Saturday than on a typical weekday.

During the hours when Villagefest was occurring, three of the five roadways (Palm Canyon Drive, Tahquitz Canyon Way, and Arenas Road) were closed to through traffic at the count locations. Belardo Road and Indian Canyon Drive, however, remained open during Villagefest and carried substantially larger traffic volumes during the evening hours on Thursday than on Wednesday. Indian Canyon Drive carried an additional 1,385 vehicles whereas Belardo Road carried an additional 1,737 vehicles during the Thursday counts. These additional traffic demand was not spread out evenly over 24 hours, but rather concentrated in the evening hours when Villagefest activities were occurring.

By comparing the 24-hour traffic count data from July to the peak season CVAG count data for the same roadway, it can be seen that the peak-season traffic volumes within the study area are one-third larger than the off-peak traffic volumes in July. Assuming this seasonal correction factor, Indian Canyon Drive carries approximately one-third more traffic (1,842 additional vehicles in four northbound lanes) during the evening hours on Villagefest Thursdays in the peak season. Belardo Road carries approximately 2,310 additional vehicles during the same period in only two lanes (one northbound and one southbound).

Table 5-1  
Variations in the Daily Traffic Volumes Within the Study Area<sup>a</sup>

24-Hour Traffic Count (Location)	Wednesday	Thursday	Saturday
Indian Canyon Drive (south of Andreas Road)	11,995	13,380 <sup>b</sup>	13,583 <sup>b</sup>
Palm Canyon Drive (south of Andreas Road)	9,788	7,983 <sup>c</sup>	12,037 <sup>d</sup>
Belarlio Road (south of Amado Road)	1,871	3,608	1,878
Tahquitz Canyon Way (east of Belarlio Road)	2,965	2,644	3,373
Arenas Road (east of Belarlio Road)	1,261	1,032 <sup>c</sup>	1,772
Total	27,880	28,647	32,643

- Source: 24-hour directional machine traffic counts made by Counts Unlimited, Inc., from July 9, 2008 through July 12, 2008.
- The additional 1,385 vehicles using Indian Canyon Drive during Villagefest were counted after the evening peak hour. The hourly traffic volume on Indian Canyon Drive during Villagefest was lower than the midday peak hour volume evaluated during typical weekdays.
- Palm Canyon Drive was closed for Villagefest from 6:00 PM - 10:00 PM on Thursday, July 10, 2008.
- The 24-hour traffic volume shown for Palm Canyon Drive on Saturday was estimated. The 24-hour machine traffic count data did not include traffic volumes on Palm Canyon Drive between 5:00 AM and 10:30 AM because the traffic counter tubes were vandalized twice while the traffic count was in progress. Based on the fact that 16.3 percent of the daily traffic volume on Indian Canyon Drive occurred between the hours of 5:00 AM and 10:30 AM on this Saturday, it was assumed that the traffic on Palm Canyon Drive on the same day during the same hours would represent a similar percentage of the daily volume on Palm Canyon Drive that day. This allowed the Palm Canyon Drive traffic volume on Saturday with 5.5 hours of missing traffic count data (10,351 vehicles) to be expanded to reflect the 24-hour volume estimate shown (12,037 vehicles per day).
- Arenas Road was closed for Villagefest from 6:00 PM through 11:00 PM on Thursday, July 10, 2008.

#### Uncertainty Inherent in Future Traffic Projections

Since this study was conducted during the off-peak summer months, it was not possible to make new peak season traffic counts. As a result, it was critically important that the best available peak season traffic counts be utilized to evaluate the peak hour operation of the key intersections. Fortunately, the City of Palm Springs was able to provide traffic count data for four of the major key intersections from recently approved traffic studies which included peak hour turning movement counts made on January 10, 2006 (Tuesday) and January 14, 2006 (Saturday). This peak season traffic count data was for (Indian Canyon Drive and Palm Canyon Drive at the intersections of Amado Road and at Tahquitz Canyon Drive). Although the data was higher than expected (based on more recent peak season CVAG traffic counts) it reflected worst-case conditions with a robust local economic environment.

The traffic count data from the peak winter months of 2006 demonstrates the magnitude of the variations in travel demand which occur in downtown Palm Springs. Since the available peak hour traffic count data from January of 2006 was used to estimate the current daily traffic volumes for Palm Canyon Drive and Indian Canyon Drive within the study area, the current daily traffic volume estimates (shown in Table 3-1) appear to be somewhat larger than expected from a review of the peak season daily traffic count data provided in the CVAG 2007 Traffic Census Report.

#### Effect of the Economy on Traffic Volumes

Local, regional, national and even international economic factors (such as the nation-wide slowdown in the U.S. economy, the mortgage lending crisis, the softening of the recently robust housing market, the spike in international crude oil and U.S. gasoline prices) have been shown to affect trip making and traffic volumes throughout the country. The current economic slow down and high fuel prices may have contributed to a decrease in traffic volumes within the study area since their peak in the winter of 2006. However, from a CEQA perspective, the traffic volumes evaluated herein should reflect a conservative estimate of worst-case conditions.

The potential exists for substantial variations in traffic volumes within the study area related to special community events, the Villagefest street fair, parades, and activity levels at the convention center, the casino, and local resorts. Therefore, for the purposes of this study, no "economic" correction was made to reduce the current year 2008 daily traffic volume estimates that were developed from the peak hour traffic count data collected at four of the key intersections in 2006, when the local economy was booming.

#### PUBLIC VERSUS PRIVATE INTERNAL STREETS

Streets serve many functions. They provide connectivity by linking one part of the city to another or one area of a development to another. Streets facilitate the movement of goods and people by providing the surface and structure for a variety of transportation modes (including trucks, pedestrians, bicyclists, transit vehicles, passenger cars, motorcycles, emergency services, maintenance services, etc.). Streets provide public access to businesses and other employment opportunities, shopping opportunities, health care services, schools, libraries, recreational, and other destinations. Streets provide a public right-of-way with space for utilities and other underground infrastructure. By setting aside a definable place for people to interact, streets also provide a sense of place. When located at the heart of a community, streets can become a venue for parties, fairs, parades, and other community celebrations.

Roadways should be designed and constructed according to the primary functions that they will be expected to serve. They are often designed, however, to emphasize some functions more than others. Roadways range from a private cul-de-sac with no linkage and limited access to limited access freeways which function only as a corridor for motor vehicle travel.

Many street designs do not provide for certain desirable functions. Some commercial streets are designed to make access to other destinations difficult. Retail strip development along a high-speed road may provide no sidewalks or pedestrian crosswalks. Therefore, when street improvements are being considered, it is important to determine whether or not the design effectively provides for all of the desired functions of the roadway. If not, the street should be redesigned to function adequately.

When Palm Canyon Drive is closed for Villagefest or other special events in the future, the Museum Market Plaza and the entire community located west of Palm Canyon Drive and south of the project site will require continuous and efficient access from the north. Periodic disruptions in the southbound flow of traffic on Palm Canyon Drive may be viewed as constraints to be overcome in assuring adequate site access from the north. However, by providing a guaranteed influx of thousands of potential patrons on a regular basis they also create an opportunity for the proposed retail commercial and restaurant development on-site. Since the closure of Palm Canyon Drive is scheduled in advance, it

permits on-site staffing levels to be increased to accommodate the spike in retail sales. The goal is to properly design site access and internal circulation to make it safe and efficient but also friendly, comfortable, and conducive to walking, cycling, and transit usage because the more people who drive to a location, the less pedestrian-friendly it becomes.

#### *Proposed East/West Internal Streets*

##### *Museum Way and Street "A/B"*

The Specific Plan identifies Museum Way, and Street "A/B" as private streets. Private streets are typically low-speed and low-volume roadways that are suitable and safe for pedestrians and bicyclists. Both Museum Way and Street "A/B" would be low-volume and low-speed east/west two-lane roadways that would be good candidates for improvement as private streets. Private streets would require maintenance by future merchants and adjacent businesses and would need to be properly signed at their intersections with public streets. Although on-street parking may need to be prohibited on the approaches to cross streets (to assure adequate sight distance) angled on-street parking may be acceptable on Museum Way and Street "A/B". Based on the low projected traffic volumes and speeds on these east/west roadways, angled parking may make maneuvering easier for the user, allow vehicle doors to open more easily than parallel parking, and permit more parking spaces to be provided per linear foot of curb space than parallel parking.

The Police Department and Fire Department should be contacted regarding any applicable requirements (such as provisions for emergency access easements, minimum street widths required to permit fire engines to turn around, pavement specifications to properly support the weight of emergency vehicles, appropriate street lighting and street light spacing requirements, etc.). Pedestrian crossings should encourage crossings to be made at right angles to these private streets.

The east/west internal streets would be well suited to slower traffic speeds, on-street parking, and frequent pedestrian crossings. These streets would be closed near Palm Canyon Drive to motor vehicles during Villagefest and other community special events along Palm Canyon Drive. During these closures, the east/west internal streets would provide the critical infrastructure necessary to bring pedestrians into the restaurants and other commercial developments proposed on-site. While closed to vehicular travel, the east/west internal streets would function as high-quality secure, interesting and inviting walking environments with no barriers to safe crossings. The availability of curb ramps and the absence of steps would facilitate access for the elderly, people in wheelchairs, and pedestrians with strollers.

The east/west internal streets proposed would provide safe and accessible pedestrian connections linking the area on-site located west of Palm Canyon Drive to the development between Palm Canyon Drive and Indian Canyon Drive as well as the Villagefest street fair activities. The east/west internal streets would also link the site to the various destination resorts, the casino and convention center located to the east in Section 14. As noted by the City Engineer, additional right-of-way may be required adjacent to commercial retail areas where restaurants will provide outdoor seating to maintain a minimum 8-foot wide sidewalk. In addition, Museum Way should be constructed from Palm Canyon Drive to Indian Canyon Drive with a cross-section that is consistent with that provided west of Palm Canyon Drive (to accommodate two-way through traffic and diagonal parking along both sides of the roadway). This will provide a clear unambiguous and direct pedestrian connection between the Palm Springs Art Museum and the development within Section 14.

The highest hourly traffic volumes projected on Museum Way on typical weekdays and Saturdays in the peak season will be less than one-third the volumes projected for Belardo Road during Villagefest. Therefore, Museum Way is a better candidate for decorative paving and other amenities afforded by private streets that improve aesthetics, but may reduce capacity than the extension of Belardo Road. The projected traffic volume on Street "A/B" (less than 1,000 vehicles per day) would be substantially less than that projected for Museum Way. Therefore, Street "A/B" would also be a good candidate for improvement and maintenance as a private street.

As evidenced by the analysis of peak hour intersections service levels with the Preserve Town & Country Center Alternative, all of the existing key intersections are projected to provide acceptable levels of service without the addition of a new east/west connection to Palm Canyon Drive and Indian Canyon Drive. Although Museum Way would substantially improve east/west access for the site, it would also increase the total delay experienced by through traffic on Palm Canyon Drive and Indian Canyon Drive, because Museum Way would require an additional traffic signal on both of these major thoroughfares at locations with less than optimal signal spacing.

##### *Andreas Road*

Andreas Road would be extended west, from Palm Canyon Drive to Belardo Road, as a private street with Less-Intense Alternative A. Andreas Road would require signalization at the intersection of Palm Canyon Drive and modifications to the existing traffic signals at the intersection of Indian Canyon Way but would provide uniform 660-foot traffic signal spacing intervals between Amado Road and Tahquitz Canyon Way.

The future traffic projections for Andreas Road are relatively low. Therefore, on-street parking, pedestrian linkages, and other aesthetic amenities would be appropriate within the project site along this roadway.

The proposed configuration of the intersection of Andreas Road and Belardo Road on-site was likely intended to function as a traffic calming design (i.e., to slow southbound through traffic on Belardo Road with a STOP sign and facilitate pedestrian crossings). This configuration improves site access to Palm Canyon Drive and Indian Canyon Drive, but delays traffic traveling along Belardo Road. During Villagefest, there is a substantial increase in traffic traveling along Belardo Road. The overall intersection delay could be reduced during Villagefest for Less-Intense Alternative A if this intersection were to be constructed with Belardo Road as the north/south major street and Andreas Road as the westbound minor-street approach controlled by a STOP sign.

##### *Belardo Road Extension*

The extension of Belardo Road through the project site with a 62-foot right-of-way, as proposed with the Museum Market Plaza Specific Plan, would create multiple development frontages (along Palm Canyon Drive, Indian Canyon Drive, and Belardo Road) where aesthetic treatments could be used to entice patrons to enter the adjacent mixed-use development. As proposed, the Belardo Road extension would function more like an internal service road rather than a public street and be improved and maintained as part of the site development. This would permit parcels located between Belardo Road and Palm Canyon Drive to be developed without direct vehicular access to the abutting public streets. Instead, vehicular access for the adjacent mixed-use development would be via a series of private internal circulation roadways.

By proposing the abandonment and vacation of Belardo Road/Museum Drive and constructing a new extension of Belardo Road with a direct north/south alignment across the site as a private roadway, the Museum Market Plaza Specific Plan could provide continuous access from the north for both the proposed development and the existing community south of the project site. The new Belardo Road extension would have retail building frontages on both sides of the roadway with amenities and inviting shop fronts to attract customers from the passing stream of traffic. The provision of angled parking on both sides of Belardo Road proposed within the site would permit easy entry by shoppers and help satisfy the demand for short-duration parking on-site by providing essentially twice as many parking spaces per lineal foot of curb space than possible with parallel on-street parking. These design features are very appealing from a marketing perspective.

From a traffic engineering perspective, two-way streets in the central business district (with or without on-street parking) generally have 25 percent less capacity than elsewhere. The provision of angled parking on both sides of the roadway not only reduces the capacity of the roadway by thirty percent but also has been shown in some areas to triple the accident rate. When Palm Canyon Drive is closed on Thursday evenings and the through travel demand on Belardo Road more than triples, this two-lane roadway will need to function at a higher level than afforded by a narrow private internal service road with angled on-street parking on both sides of the roadway and numerous pedestrian crossings.

For the foreseeable future, Belardo Road will need to provide a critical north/south connection across the site in order for emergency services to respond quickly to situations in the existing community located south of the site and west of Palm Canyon Drive during Villagefest activities, parades, and other community events that require the closure of Palm Canyon Drive. Adequate access will also need to be maintained at all times for the commercial and residential uses proposed on-site when Palm Canyon Drive is closed.

If the public right-of-way associated with Belardo Road/Museum Drive is vacated on-site as proposed, it is recommended that the Belardo Road extension across the site to Tahquitz Canyon Way be given a Collector Street classification in the Circulation Element of the *Palm Springs General Plan* and constructed within a 66-foot public street right-of-way. It is also recommended that a minimum 12-foot wide travel lane in each direction be provided with parallel parking spaces in an 8-foot parking lane adjacent to the curbs for a total minimum street width of 40 feet (curb-to-curb) on Belardo Road. The remaining right-of-way should be reserved for use as pedestrian walkways and landscaped areas, with lighting improvements installed that are consistent with existing lighting improvements throughout the downtown Central Business District, as required by applicable Design Guidelines and the City of Palm Springs.

A "Collector" street classification with a 66-foot right-of-way would permit the relocation of existing utilities on-site and continue the current "Collector" street designation of Belardo Road where it ends at the north site boundary and at Tahquitz Canyon Way. To avoid creating an inconsistency with the *City of Palm Springs General Plan* Circulation Element, a Circulation Element Amendment may be required to add the proposed Belardo Road extension across the project site to Tahquitz Canyon Way with a "Collector" street classification.

#### POTENTIAL IMPACTS ON RESIDENTIAL AND EMERGENCY ACCESS

The Palm Springs Fire Department locates fire stations in a manner designed to provide emergency response times of five minutes or less. A fire station is located north of Andreas Road at 227 North Indian Canyon Drive in downtown Palm Springs. The project site is located within the primary response area of this fire station.

When Palm Canyon Drive is closed for Villagefest, the Palm Springs Fire Department's emergency response vehicles may use Amado Road and Belardo Road to access the existing development located west of Palm Canyon Drive. Periods of congestion can reduce the Fire Department's ability to respond to emergencies in a timely fashion. If Belardo Road were to be constructed as a narrow two-lane private street with diagonal parking on both sides of the roadway through the project site as proposed, the potential for congestion on Belardo Road during Villagefest would be greater than with the No-Project Alternative.

Congestion on Belardo Road, between Amado Road and Tahquitz Canyon Way, could adversely affect the ability of the Fire Department to respond to emergencies both on-site and within the service area south of the site and west of Palm Canyon Drive in a timely manner. If the narrow roadway proposed for Belardo Road were lined with angled parking on both sides of the street and periodically congested on-site for several hours each week during Villagefest (or blocked temporarily by an automobile accident) emergency crews could find it difficult to maneuver around the blockage. Emergency vehicles may be forced to travel east (away from the scene of the emergency) to Calle Encilia, then turn south to Baristo Road (to bypass the Villagefest road closures) and then turn north on Belardo Road to reach emergency situations that occur west of Palm Canyon Drive and south of the project site.

#### ACCESSIBLE ROUTES IN ACCORDANCE WITH ADA STANDARDS

The Americans with Disabilities Act (ADA) mandates improvements to ensure that all people, including those with disabilities, have equal access to transportation. ADA design standards require all new building construction (and additions to or alterations of existing buildings) to provide accessible routes for all pedestrians to ensure access and mobility for the physically challenged. Accessibility features to accomplish this include the provision of: adequate time for pedestrians to cross streets, well-designed curb ramps, limited driveways, and wide sidewalks that are clear of obstructions (such as poles, signs, and street trees located in the middle of the sidewalk).

If gratings are located in walking surfaces (such as around the base of street trees) they can have no spaces greater than 0.5 inch wide in one direction. Gratings with elongated openings must be placed with the long dimension of the openings perpendicular to the dominant direction of travel.

At least one accessible route, with a minimum width of 36 inches, must be provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones (if provided) and public streets or sidewalks, to an accessible building entrance. In addition, at least one accessible route must connect accessible buildings, accessible facilities, accessible elements, and accessible spaces that are on the project site. Protruding objects must not reduce the clear width of an accessible route or maneuvering space.

#### Accessible Parking Spaces

If parking spaces are provided for self-parking by employees, visitors, or both, accessible spaces complying with ADA requirements must be provided in each such parking area. Parking lots with 401 to 500 parking spaces require a minimum of nine accessible parking spaces. Parking lots with 501 to 1,000 parking spaces require a minimum of two percent of the total number of parking spaces to be accessible spaces. Parking lots with 1,001 or more parking spaces require a minimum of twenty accessible spaces plus one accessible space for each 100 parking spaces over 1,000 in the parking lot.

One in every eight accessible spaces shall be served by an access aisle a minimum of 96 inches wide designated as "van accessible." All such spaces may be grouped on one level of a parking structure.

Valet parking facilities must provide an accessible passenger loading zone located on an accessible route to the entrance of the facility with valet parking. If passenger loading zones are provided on-site, then at least one passenger loading zone must be accessible.

#### PROJECT-RELATED CHANGE IN TRIP GENERATION

##### *Peak Season Weekday Trip Generation*

If the No-Project Alternative is implemented, the estimated trip generation during a typical weekday in the peak season would be 18,680 trip-ends (of which 17,850 would be external trip-ends and 830 would remain internal to the site). The No-Project Alternative would generate an estimated 1,634 trip-ends during the midday peak hour (1,584 external and 50 that would be internal). During the evening peak hour, approximately 1733 trip-ends would be generated (1,657 external and 76 internal).

The Museum Market Plaza Specific Plan would generate between 17,990 weekday trip-ends (with Less-Intense Alternative B) and 23,390 weekday trip-ends (with the Preserve Town & Country Center Alternative). Of that total, between 16,540 and 21,330 of the trip-ends would be external and between 900 and 2,060 would remain internal to the site. It is estimated that between 1,415 and 2005 trip-ends would be generated in the midday peak hour by the (of which between 70 and 164 would be internal trip-ends and between 1,319 and 1,841 would be external trip-ends). During the evening peak hour, between 1,647 and 2,156 trip-ends would be generated (of which between 76 and 194 trip-ends would be internal and between 1,569 and 1962 would be external).

The net change in the typical weekday trip generation associated with the Museum Market Plaza Specific Plan would range from a decrease of 690 trip-ends (with Less-Intense Alternative B) to an increase of 4,710 trip-ends (with the Preserve Town & Country Center Alternative). In the midday peak hour on a weekday, the net change in the trip generation would range from a decrease of 219 trip-ends (with Less-Intense Alternative A) to an increase of 371 trip-ends (with the Preserve Town & Country Center Alternative). During the evening peak hour, the net change in the trip generation would range from a decrease of 86 trip-ends (with Less-Intense Alternative B) to an increase of 423 trip-ends (with the Preserve Town & Country Center Alternative).

##### *Peak Season Saturday Trip Generation*

During a typical Saturday in the peak season, the No-Project Alternative would generate approximately 2,363 trip-ends in the midday peak hour. Of that total, it is estimated that 2,255 would have either an origin or a destination outside of the site and the remaining 108 would remain internal to the site.

The Museum Market Plaza Specific Plan would generate between 1,989 and 2,637 trip-ends during the midday peak hour on Saturdays, depending on the site development alternative. Of that total, between 78 and 186 of the trip-ends would remain within the site. Between 1,845 and 2,451 of the midday trip-ends involve external trips.

The net change in trip generation associated with the Museum Market Plaza Specific Plan in the midday peak hour on a peak season Saturday would range from a decrease of 374 trip-

ends to an increase of 274 trip-ends, depending on which development alternative is implemented. Refer to Table 4-2 for the internal and external trip-generation estimates with the various site development alternatives.

#### PROJECT-RELATED CHANGE IN PEDESTRIAN ACTIVITY

Pedestrian travel within the Central Business District is quite common and the number of pedestrians would increase once the Museum Market Plaza Specific Plan is constructed. Since pedestrian density is primarily a function of the walkway space provided and the building floor space occupied by retail, restaurant and office uses, the proposed project should substantially increase the pedestrian density within the study area. The proposed project would create many destinations close to each other at sufficient densities to support public transit. By supporting a balanced transportation system, the proposed project would promote pedestrian activity and make both walking and public transit attractive options for site access.

Accessibility features to accomplish this include the provision of: adequate time for pedestrians to cross streets, well-designed curb ramps, a limited number of driveways on Palm Canyon Drive and Indian Canyon Drive, and wide sidewalks that are clear of obstructions (such as poles, signs, and street trees located in the middle of the sidewalk). With relatively low travel speeds and low projected traffic volumes, the east/west internal streets would be good candidates for pedestrian linkages and other pedestrian-friendly amenities to make the area attractive, inviting, interesting and safe for pedestrians.

#### 5A. TRAFFIC IMPACTS

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

1. The trip generation associated with the existing land uses on-site currently includes approximately 6,700 external trip-ends on a typical weekday and 9,320 external trip-ends on a Saturday in the peak season which are currently using the surrounding street system in the study area for access.
2. The trip generation associated with the No-Project Alternative would include approximately 17,850 external trip-ends on a typical weekday, and 23,750 external trip-ends on a typical Saturday in the peak season.
3. The external trip generation associated with the Preferred Project would be approximately 2,750 trip-ends greater on a typical weekday and 630 trip-ends greater on a typical Saturday in the peak season than that of the No-Project Alternative.
4. The external trip generation associated with the Preserve Town & Country Center Alternative would be approximately 3,480 trip-ends greater on a typical weekday and 2,300 trip-ends greater on a typical Saturday in the peak season than that of the No-Project Alternative.
5. The external trip generation associated with Less-Intense Alternative A would be approximately 1,310 trip-ends fewer on a typical weekday and 2,280 trip-ends fewer on a typical Saturday in the peak season than that of the No-Project Alternative.
6. The external trip generation associated with Less-Intense Alternative B would be approximately 760 trip-ends fewer on a typical weekday and 1,910 trip-ends fewer on a typical Saturday in the peak season than that of the No-Project Alternative.

7. In the peak season of the year 2030 with all site development alternatives, all of the key intersections are projected to meet the City of Palm Springs minimum performance standard of LOS D in the midday and evening peak hours on typical weekdays without off-site mitigation. The levels of delay at the intersections evaluated with two-way stop control would be within the range considered acceptable by the City of Palm Springs on weekdays in the year 2030.
8. In the peak season of the year 2030 with all site development alternatives, all of the key intersections are projected to meet the City of Palm Springs minimum performance standard of LOS D in the midday peak hour on Saturdays without mitigation, except the intersection of Belardo Road and Tahquitz Canyon Way (only with the Preserve Town & Country Center Alternative). The levels of delay at this intersection with two-way stop control would be within the range considered acceptable by the City of Palm Springs on Saturdays in the year 2030, if a dedicated westbound right-turn lane is provided on Tahquitz Canyon Way.
9. On Thursday evenings in the year 2030 when the Villagefest street fair is underway, the intersection of Belardo Road and Arenas Road is projected to operate at LOS F with all-way stop control with the Preferred Project and with the Preserve Town & Country Center Alternative. This intersection is projected to operate at acceptable levels of service with the No-Project Alternative, Less-Intense Alternative A, and Less Intense Alternative B. Although signalization would allow this intersection to operate at acceptable levels of service, urban signal warrants do not appear to be met by the projected peak hour traffic volumes at this intersection in the year 2030.
10. On Thursday evenings in the year 2030 when the Villagefest street fair is underway, the intersection of Belardo Road and Museum Way on-site is projected to operate at LOS F with all-way stop control with the Preferred Project and with all site development alternatives except the No-Project Alternative (which does not include this intersection) and Less-Intense Alternative A. This intersection appears to require signalization to meet the City of Palm Springs minimum performance standard with the Preferred Project, the Preserve Town and Country Center Alternative, and Less-Intense Alternative B.
11. On Thursday evenings in the year 2030 when the Villagefest street fair is underway and Palm Canyon Drive is closed to southbound traffic, the westbound (Amado Road) approach to the intersection of Belardo Road is projected to operate at LOS F with the Preferred Project and all site development alternatives with the existing two-way stop control. Signalization may be necessary at this intersection to maintain acceptable levels of minor-street control delay during the evening hours on Villagefest Thursdays, and urban peak hour traffic signal volume warrants appear to be met during this period. If signalization is not desirable, the following alternatives may be considered: (1) closure of the north leg of Belardo Road at Amado Road to permit the westbound left-turn movement to proceed unimpeded; (2) the provision of a traffic control officer to manually direct traffic during peak hours; and (3) the provision of remote parking at underutilized parking lots with shuttles to Villagefest activities.
12. Andreas Road (between Palm Canyon Drive and Indian Canyon Drive) would need to be widened on the south side to permit two-way operation by removing the existing angled parking with Less-Intense Alternative A. The channelization of Andreas Road at Indian Canyon Drive would also need to be removed. The existing traffic signals may also require modification.
13. Traffic signals would be warranted and required to meet the City minimum intersection performance standard at the proposed intersection of Palm Canyon Drive with Museum Way and at Indian Canyon Drive with Museum Way, with the Preferred Project and Less-Intense Alternative B.
14. By eliminating a segment of the existing bike lanes on both sides of Belardo Road between the northern site boundary and Museum Drive, the vacation of right-of-way proposed along Belardo Road/Museum Drive would adversely affect the connectivity and continuity of the existing recreational bike trails in the area as well as access to the Las Palmas Loop, the Heritage Trail, the Citywide Loop, and the Downtown Loop bike trail.
15. All of the site development alternatives would substantially increase the number of pedestrians crossing roadways at-grade within the downtown, including Palm Canyon Drive and Indian Canyon Drive. Pedestrian travel typically peaks during the lunch hour in Central Business Districts when volumes will likely be double the average flow. The provision of Museum Way (or Andreas Road with Less-Intense Alternative A) as a pedestrian corridor would create a critical connection between the downtown core area and the City's resort amenities (including the convention center, casino, and hotels in Section 14). The pedestrian flows are expected to be greatest along the Palm Canyon Drive, Indian Canyon Drive, and Tahquitz Canyon Way block faces. Therefore, a major east/west pedestrian boulevard located along Museum Way (400 feet north of Tahquitz Canyon Way) which connects Indian Canyon Drive to Palm Canyon Drive appears to provide the requisite connectivity while minimizing conflicts with motorists entering and leaving the site.
16. All of the site development alternatives would substantially increase the demand for public transportation services within the downtown core area. The transit service improvement plan recently developed by the SunLine Transit Agency would reduce the significance of this impact by increasing access to public transportation along Indian Canyon Drive via Routes 14, 30, and 111.
17. Other than the No-Project Alternative, all site development alternatives would adversely impact the General Plan street system within the study area by providing angled parking on the west side of Palm Canyon Drive and possibly on the west side of Indian Canyon Drive. The sight distance for motorists backing out of the angled parking spaces would be very poor when large vehicles (minivans, SUVs, RVs or delivery trucks) were parked beside them, restricting the driver's view of approaching traffic until they backed a considerable distance into the travel lane to get a clear view around the adjacent vehicle. Approaching drivers would be forced to react suddenly to unexpected midblock conflicts by braking to a stop to avoid collisions, with the additional concern of being rear-ended. A major thoroughfare (such as Palm Canyon Drive and Indian Canyon Drive) that has numerous vehicles backing out of angled parking spaces into the adjacent travel lane cannot safely accommodate high traffic volumes and would have substantially higher crash rates with angled parking than parallel parking.
18. With the exception of the No-Project Alternative, all site development alternatives would adversely impact the General Plan street system by deleting an existing "Collector" street link (Belardo Road/Museum Drive) shown in the current Circulation Element of the *Palm Springs General Plan*. The proposed improvement of Belardo Road across the site to Tahquitz Canyon Way as a private street with on-street angled parking would make through traffic movements secondary to the provision of short-duration on-street parking and access to the abutting development.



Studies have shown that angled parking results in substantially higher accident rates than parallel parking in Central Business Districts. Although the capacity of Belardo Road does not appear to be of concern with year 2030 weekday or Saturday traffic volumes, Belardo Road is projected to operate near the capacity of a two-lane street during Villagefest, especially near the intersection of Museum Way. With the need to maintain capacity and pedestrian safety along Belardo Road, as well as the risk of higher accident rates associated with angled parking, Belardo Road should not provide angled parking through the study area.

19. The proposed project and all project alternatives would increase the number of pedestrians and the demand for pedestrian facilities on-site when compared to the existing uses. Pedestrian facilities need to be provided to link the parking areas with the proposed uses to provide easy and safe access throughout the project site. Pedestrian crossings of Palm Canyon Drive and Indian Canyon Drive should be provided in conjunction with the east/west streets to take advantage of the required traffic signal control. Where pedestrian boulevards are proposed across Palm Canyon Drive and Indian Canyon Drive without a new east/west street (i.e. with the Preserve Town & Country Center Alternative and Less-Intense Alternative A) signalized pedestrian crossings should be provided to insure safe pedestrian access.
20. With Palm Canyon Drive closed during Villagefest, Belardo Road provides the shortest access to the area west of Palm Canyon Drive for the Palm Springs Fire Department. If Belardo Road/ Museum Drive is vacated and abandoned as proposed, the extension of Belardo Road must be extended across the project site to Tahquitz Canyon Way. The Belardo Road extension must have adequate capacity to provide acceptable levels of service at all times (including during Villagefest) to maintain acceptable response times by emergency services responding to calls from areas west of Palm Canyon Drive.
21. The proposed project would increase the demand for off-street parking and short duration on-street parking within the immediate project vicinity. The project would eliminate some of the off-street parking spaces that have been used to meet the peak parking demands generated by the land uses within downtown Palm Springs. However, new parking facilities will be constructed at various locations throughout the project site. It may be necessary for the applicant to have a shared parking study prepared for City review and approval as well as enter into new shared parking agreements to assure sufficient off-street parking to satisfy the peak parking demands generated by the mixed-use development proposed within the Museum Market Plaza Specific Plan site. Up to 25 percent of the required parking for the Specific Plan area may be provided through the payment of in lieu fees.
23. The proposed project would increase traffic volumes on Palm Canyon Drive at the existing pedestrian crosswalks located north and south of Andreas Road and would also increase the number of pedestrians using these crosswalks to reach the proposed development as well as the casino, the convention center, and various resorts within Section 14. These increases may adversely affect the safety of pedestrians using these crosswalks by increasing the potential for vehicle-pedestrian collisions. Provided that adequate intersection sight distance and minimum stopping sight distance is maintained along Palm Canyon Drive, the adverse effect should not be significant, as these crosswalks have been designed and constructed with appropriate features to facilitate the safe and efficient movement of large numbers of pedestrians.

## ADEQUACY OF SITE ACCESS

With five major access roadways and five minor access roadways available for site traffic, the project site appears to have adequate access for the proposed land uses. With only minor mitigation, the roadway network within the study area is projected to operate at acceptable levels of service in the peak hours on typical weekdays and Saturdays in the peak season of the year 2030 upon build out of the Preferred Project or any of the four site development alternatives. However, without additional mitigation (including traffic signals) traffic congestion may occur at some locations within the study area upon full occupancy of the project site during Thursday evenings when Villagefest activities occur.

## 5B. REQUIRED IMPROVEMENTS

### TYPICAL WEEKDAY AND SATURDAY INTERSECTION IMPROVEMENTS

The proposed street system appears to be generally adequate to serve the proposed land uses with the Preferred Project and the project alternatives with typical weekday and Saturday traffic volumes. The mitigation required for the Preferred Project and the site development alternatives with projected year 2030 weekday and Saturday traffic volumes would be minor. New traffic signals would be required with the Preferred Project and those site development alternatives that would have new roadways with cross traffic on Palm Canyon Drive and Indian Canyon Drive.

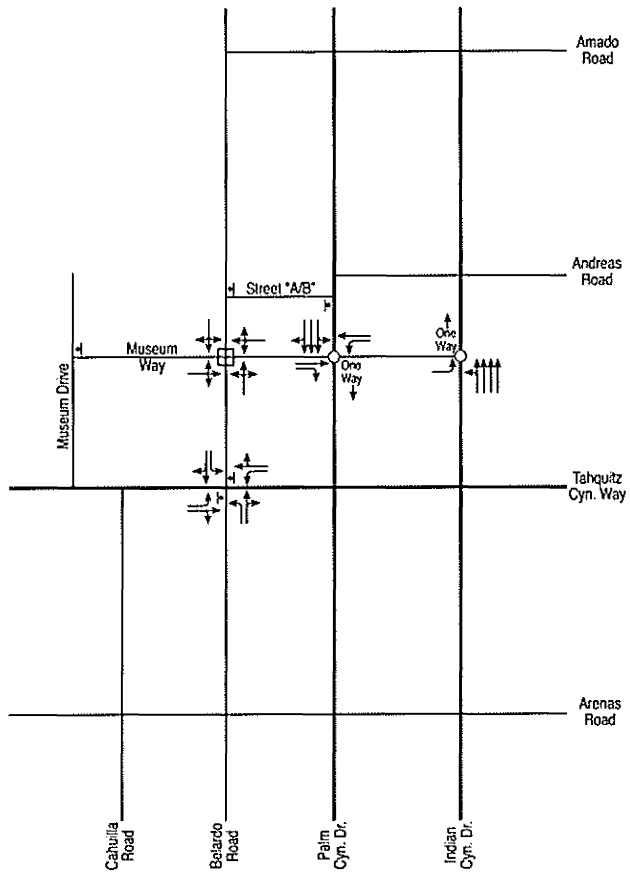
The Preferred Project and Less-Intense Alternative B include Museum Way, a roadway that would provide additional access to Palm Canyon Drive and Indian Canyon Drive. With this roadway network, traffic would be diverted from Tahquitz Canyon Way and Amado Road onto Museum Way. As shown in Figure 5-1, the Preferred Project and Less-Intense Alternative B would require traffic signals at the intersections of Palm Canyon Drive and Museum Way and at the intersection of Indian Canyon Drive and Museum Way. No additional improvements would be required to accommodate typical weekday and Saturday traffic volumes in the year 2030.

The No-Project Alternative would not require any roadway improvements to accommodate weekday and Saturday traffic volumes. Although the projected traffic volumes on Amado Road and Tahquitz Canyon Way are higher with this alternative than the Preferred Project, the intersections would operate at acceptable levels of service with the existing approach lanes and traffic control intersections for typical weekday and Saturday traffic volumes.

Without the extension of Museum Way from Palm Canyon Drive to Indian Canyon Drive, the Preserve Town & Country Center Alternative would result in higher volumes on Amado Road and Tahquitz Canyon Way. However, all of the key intersections are projected to operate at acceptable levels of service without mitigation except one. As shown in Figure 5-2, the Preserve Town & Country Center Alternative would require the addition of a westbound dedicated right-turn lane at the intersection of Belardo Road and Tahquitz Canyon Way to accommodate the projected traffic volumes at acceptable levels of service for peak season Saturday traffic volumes in the year 2030.

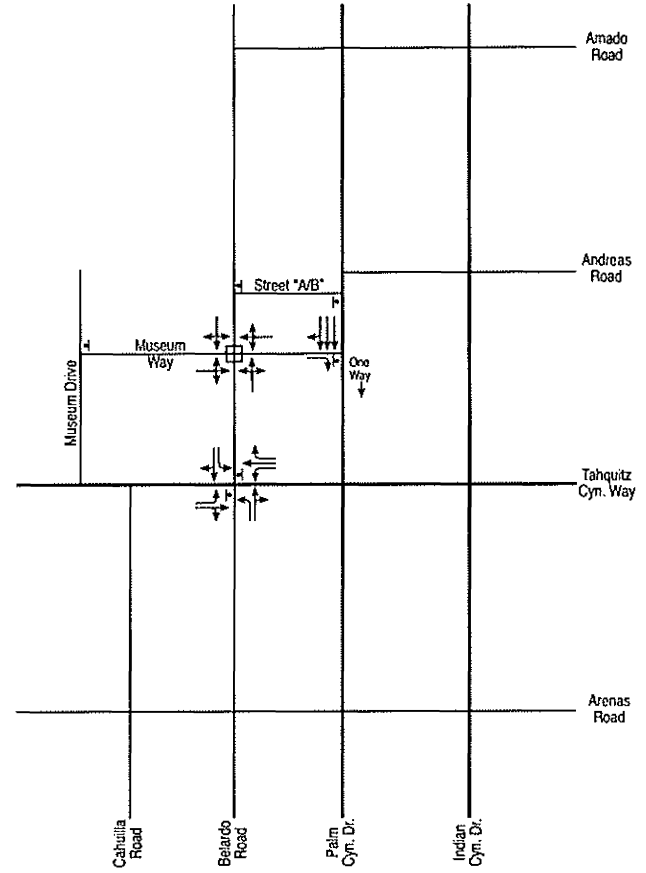
Less Intense Alternative A would provide a new project access to Palm Canyon Drive and Indian Canyon Drive aligned with Andreas Road. As shown in Figure 5-3, Less Intense Alternative A would require a new traffic signal at the intersection of Palm Canyon Drive and Andreas Road. In addition, the segment of Andreas Road between Palm Canyon Drive and Indian Canyon Drive would need to be widened to accommodate two-way traffic. The angled parking on the south side of Andreas Road would need to be removed to provide

Figure 5-1  
 Recommended Mitigation For Typical Weekdays And Saturdays  
 With The Preferred Project Or Less-Intense Alternative B



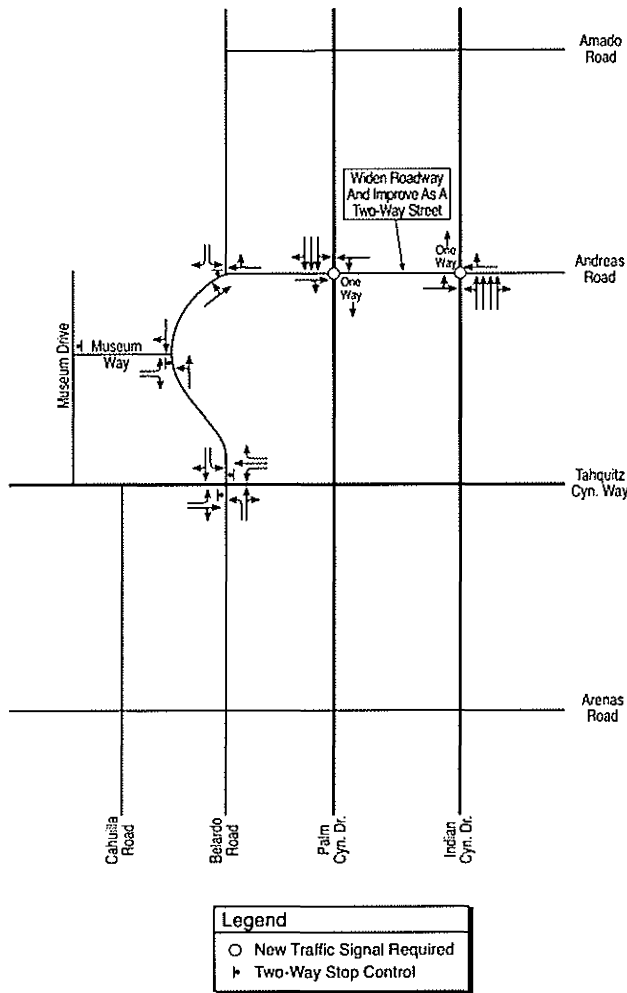
- Legend**
- New Traffic Signal Required
  - All-Way Stop Control
  - ┆ Two-Way Stop Control

Figure 5-2  
 Recommended Mitigation For Typical Weekdays And Saturdays  
 With The Preserve Town And Country Center Alternative



- Legend**
- All-Way Stop Control
  - ┆ Two-Way Stop Control

Figure 5-3  
Recommended Mitigation For Typical Weekdays  
And Saturdays With Less-Intense Alternative A



additional roadway width to align the lanes with the Andreas Road segment on the east side of Indian Canyon Drive.

#### VILLAGEFEST THURSDAY NIGHT INTERSECTION IMPROVEMENTS

Although the mitigation required to accommodate typical weekday and Saturday traffic volumes is minor, the projected traffic demand for the intersections along Belardo Road during Villagefest is much greater. The 24-hour traffic counts on Belardo Road show that the Thursday night Villagefest southbound traffic is approximately eleven times greater than the Wednesday night traffic, and the Villagefest northbound traffic is approximately three times greater than the Wednesday night traffic for the same hours. The total projected peak hour traffic volume on Belardo Road is approximately three times greater during Villagefest than on a typical weekday evening peak hour.

By adding the seasonally adjusted traffic from the Villagefest counts to the Preferred Project with background traffic growth projects a total traffic volume of 1,335 vehicles per hour on Belardo Road, south of Tahquitz Canyon Way. To accommodate this projected traffic volume on a two-lane street, Belardo Road would need to minimize the friction that results from parking maneuvers and traffic merging. Traffic signals would be needed at most of the key intersections along Belardo Road and there would be significant congestion along Belardo Road.

To accommodate the projected traffic volumes, the intersection of Belardo Road and Amado Road would require signalization to provide acceptable levels of service during Villagefest for the Preferred Project and all alternatives. Without signalization, delays over 15 minutes are projected for the year 2030 for traffic diverting from Palm Canyon Drive onto Amado Road. With this amount of delay, traffic would be diverted from the study area and the projected traffic in the study area could be substantially reduced.

To accommodate projected year 2030 traffic volumes during Villagefest at acceptable levels of service (as shown in Figure 5-4), the Preferred Project and the Less-Intense Alternative B would require signalization of the intersections of Belardo Road at Amado Road and Belardo Road at Museum Way. In addition, the Preferred Project would require the signalization of the intersection of Belardo Road at Arenas Road in the year 2030 during Villagefest to provide acceptable levels of service, although this intersection does not appear to meet urban peak hour traffic signal volume warrants.

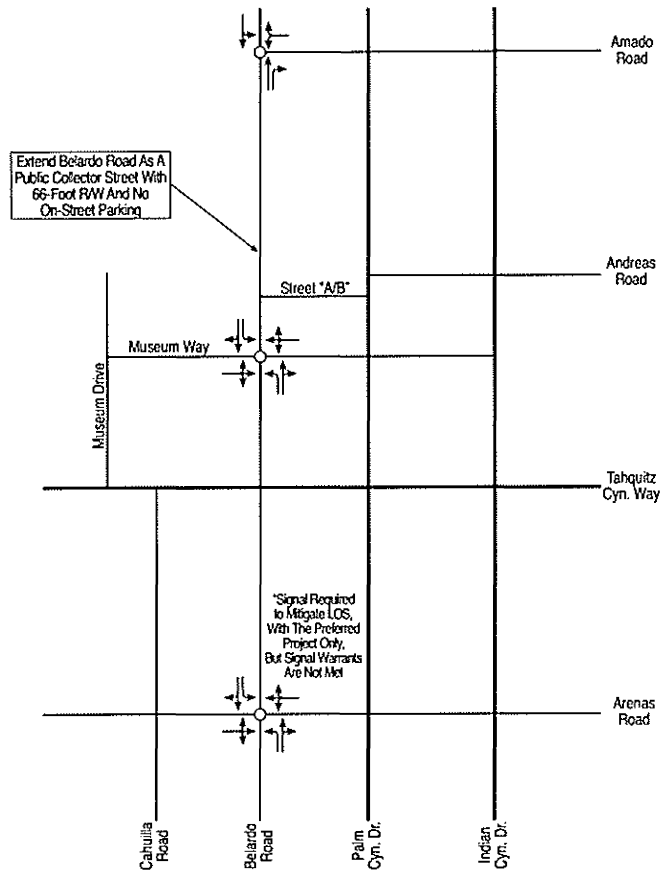
As shown in Figure 5-5, the No-Project Alternative would require the signalization of the intersection of Belardo Road and Amado Road during Villagefest to provide acceptable levels of service through the study area. The No-Project Alternative would not require any additional mitigation to provide acceptable levels of service through the study area in the year 2030 during Villagefest.

To adequately mitigate impacts with year 2030 traffic volumes during Villagefest, the Preserve Town & Country Center Alternative would require the signalization of three intersections, as shown in Figure 5-6. Similar to the Preferred Project, the Preserve Town & Country Center Alternative would require signalization of the intersection of Belardo Road at Amado Road, Belardo Road at Museum Way, and Belardo Road at Arenas Road with Villagefest traffic volumes.

Similar to the No-Project Alternative, Less Intense Alternative A (shown in Figure 5-7) would require the signalization of only one additional intersection (Belardo Road at Amado Road) to mitigate traffic volumes during Villagefest. In addition, Figure 5-7 identifies the recommended year 2030 intersection lane improvements required to provide acceptable

Figure 5-4

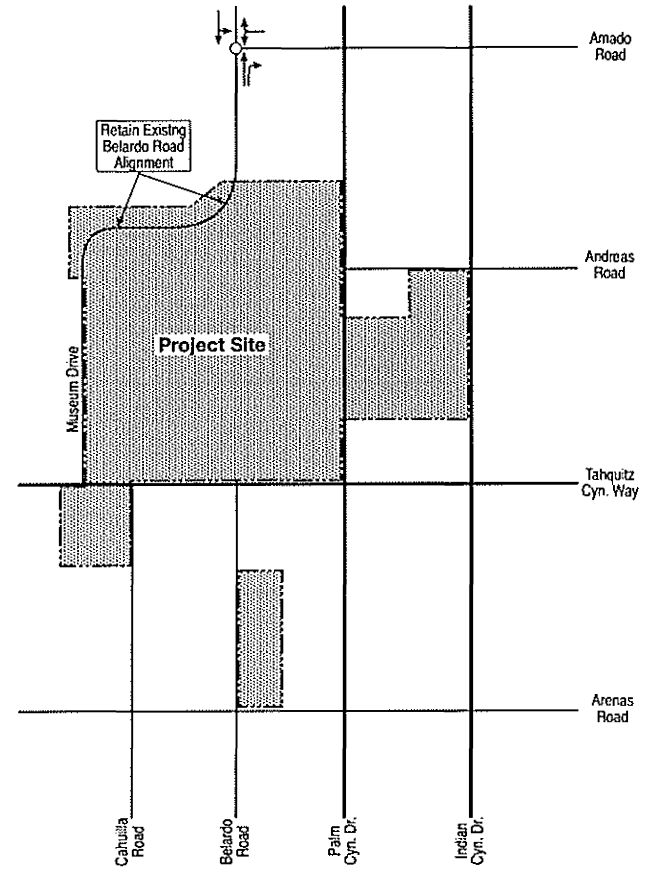
Additional Mitigation Recommended For Year 2030 With Villagefest And The Preferred Project Or Less-Intense Alternative B



**Legend**  
 ○ New Traffic Signal Required

Figure 5-5

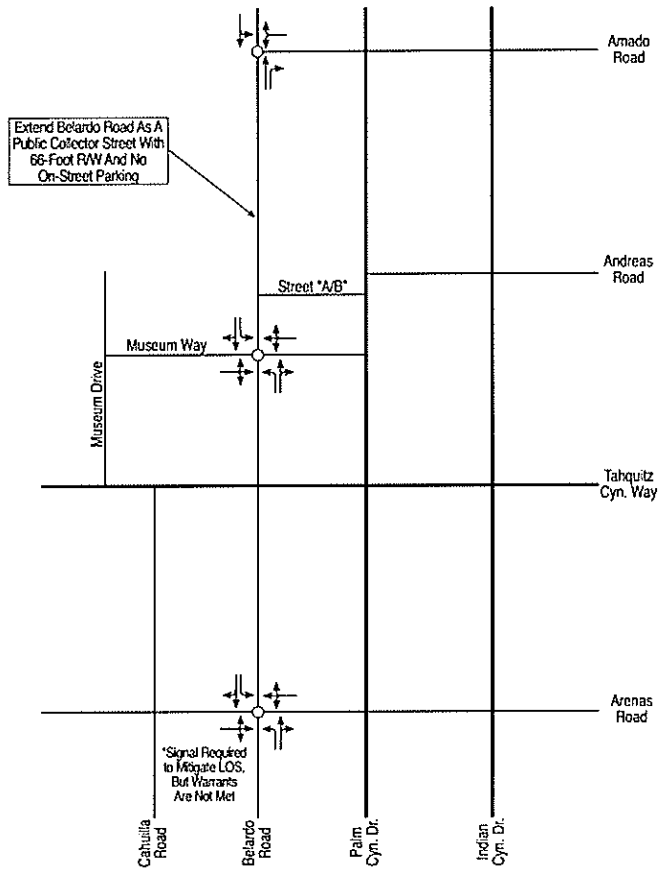
Additional Mitigation Recommended For Year 2030 With Villagefest And The No-Project Alternative



**Legend**  
 ○ New Traffic Signal Required To Achieve LOS D Operation

Figure 5-6

Additional Mitigation Recommended For Year 2030 With Villagefest And The Preserve Town And Country Center Alternative

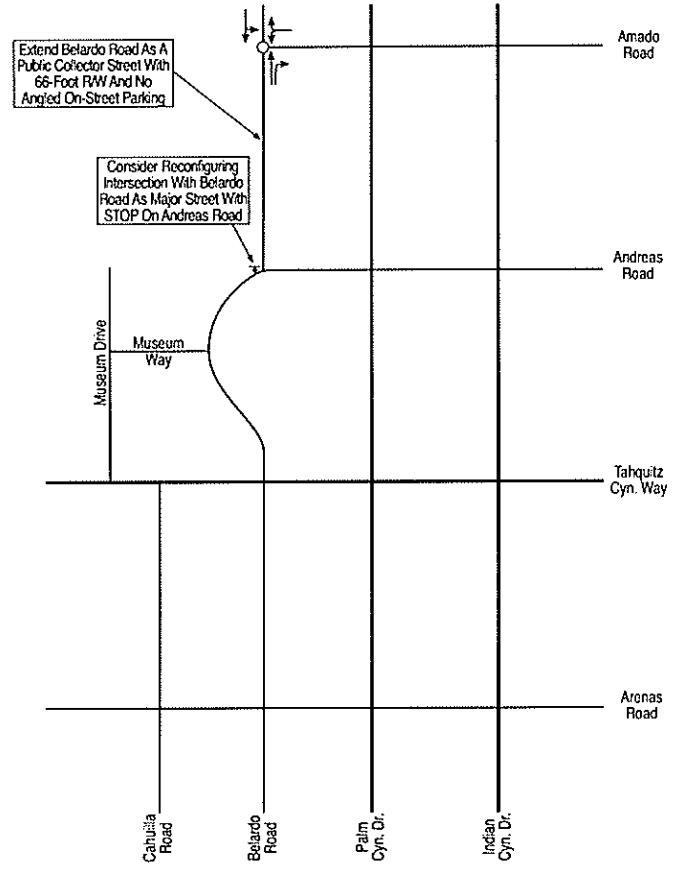


**Legend**  
 ○ New Traffic Signal Required



Figure 5-7

Additional Mitigation Recommended For Year 2030 With Villagefest And Less-Intense Alternative A



**Legend**  
 ○ New Traffic Signal Required To Achieve LOS D Operation  
 † Two-Way Stop Control



levels of service at other intersections along Belardo Road without signalization. If Alternative A were constructed with separate eastbound left and right-turn lanes at the intersection of Belardo Road and Museum Way, the intersection projected to operate at acceptable levels of service without signalization. The segment of Andreas Road between Palm Canyon Drive and Indian Canyon Drive would need to be widened to accommodate two-way traffic. The angled parking on the south side of Andreas Road would need to be removed to provide additional roadway width and to align the lanes with Andreas Road on the east side of Indian Canyon Drive.

Some of the mitigation shown in Figures 5-1 through 5-7 represent a consolidation of the mitigation required for typical weekdays, Saturdays, and Villagefest. For example, the intersection of Belardo Road and Tahquitz Canyon Way would provide acceptable levels of service for typical weekdays and Saturdays as an all-way stop and improve pedestrian crossing opportunities. However, the high volumes on Belardo Road during Villagefest can be better accommodated with two-way stop control. Therefore, two-way stop control was shown for the intersection of Belardo Road and Tahquitz Canyon Way since it is projected to provide acceptable levels of service for all scenarios.

**REQUIRED TRAFFIC CONTROL**

Traffic signals influence both capacity and levels of service. Delays to traffic are important in establishing the level of service. Since vehicles must stop for red indications at traffic signals, signalization increases the control delay experienced by some of the motorists entering every signalized intersection. A series of signalized intersections, each of which has adequate capacity to handle the demand, may provide poor service as a group if they are not coordinated. Without signal coordination, traffic is forced to make frequent stops which increases delay and lowers service levels. Thus, fewer signals with uniform signal spacing improve traffic flow and reduce delay.

The unsignalized key intersections proposed within the project site (excluding the intersections proposed on Palm Canyon Drive and Indian Canyon Drive) would operate at acceptable levels of service with two-way stop control or with all-way stop control. Traffic signals were assumed at the intersections proposed on-site along Palm Canyon Drive and Indian Canyon Drive, except where the turning movements associated with the minor-street approach would be limited to right turns only onto the major street.

This was the case at the intersection of Palm Canyon Drive and Museum Way with the Preserve Town & Country Alternative. It was also the case for the proposed site access on Palm Canyon Drive, between Museum Way and Andreas Road, with the Preferred Project, Less Intense Alternative B, and the Preserve Town & Country Alternative.

One-eighth mile (660 feet) signal spacing with a 60-second signal cycle length allows for a progression speed of 15 miles per hour. Increasing the signal cycle length to 70 seconds decreases the progression speed to 13 mph. With a 90-second cycle a progression speed of only 10 mph is possible.

If traffic signals are installed on Palm Canyon Drive at Museum Way with the Preferred Project or Less-Intense Alternative B, the proximity of Tahquitz Canyon Way would restrict the available storage space between Tahquitz Canyon Way and Museum Way to approximately 400 feet. There is the potential for the southbound queue of vehicles on Palm Canyon Drive at Tahquitz Canyon Way to back-up to the intersection at Museum Way and interfere with the operation of this intersection. This potential impact could be mitigated by interconnecting and coordinating the traffic signals on Palm Canyon Drive. Less-Intense Alternative A would provide a signalized intersection on Palm Canyon Drive

at Andreas Road midway between Amado Road and Tahquitz Canyon Way (660 feet north of Tahquitz Canyon Way).

The Palm Springs City Engineer will make a determination regarding which intersection improvements are the responsibility of the project proponent based upon: intersection location, benefits that may accrue to site access, improvements expected from cumulative developments, etc. The project-related contribution to the increase in evening peak hour traffic projected to occur by the year 2030 at each intersection where signalization would be needed was utilized to determine the applicant's fair-share percentage of the cost of signalization at each intersection.

The value of project-related traffic as a percentage of future traffic growth was determined from all evening peak hour approach volumes at each of the key intersections where traffic signals would be needed. The formula utilized to determine the percentage contribution is shown below.

$$\frac{\text{Site Contribution To Future Growth (\%)}}{\text{Site Traffic} \times 100} = \frac{\text{Year 2030 Total Traffic} - \text{Existing Traffic}}{\text{Year 2030 Total Traffic} - \text{Existing Traffic}}$$

**FAIR-SHARE CONTRIBUTIONS**

Fair-share contributions to the cost of future mitigation has been identified and included in Tables 5-2 through 5-6. The project proponent may be required to contribute on a "fair-share" basis to the cost of signalizing the key intersections shown in Tables 5-2 through 5-6 below. However, funding for the construction and maintenance of the public infrastructure on-site may be obtained through the development of a Benefit Assessment District. This mechanism is of particular importance if the proposed streets crossing the project site are public.

**5C. COMPLIANCE WITH CITY STANDARDS AND POLICIES**

LOS D or better operation shall be provided and maintained at the key intersections under typical weekday peak hour conditions during the peak season. The project proponent shall dedicate appropriate right-of-way to accommodate the ultimate improvement of all General Plan roadways on and abutting the site. In addition, circulation improvements will be made in conjunction with the proposed development on-site as outlined in the Museum Market Plaza Specific Plan. The project proponent will comply City of Palm Springs requirements regarding the provision of bikeway improvements on or adjacent to the site to replace the segments vacated and abandoned on Belardo Road/Museum Drive. The project proponent will coordinate with SunLine Transit Agency regarding public transit facilities on-site.

The Coachella Valley Association of Governments (CVAG) has developed a Transportation Uniform Mitigation Fee (TUMF) that compliments the objectives of the Congestion Management Program (CMP). In addition, the City of Palm Springs has adopted an approved TDM Ordinance. The proposed project will participate in the TUMF program and comply with the City of Palm Springs TDM Ordinance requirements.

**5D. TRANSPORTATION UNIFORM MITIGATION FEE (TUMF) PROGRAM**

The Transportation Uniform Mitigation Fee (TUMF) program is a regional traffic mitigation program intended to address land use and transportation system consistency through an integrated system-wide program that is reviewed annually and based upon local agency general plans and associated ITE trip generation rates. The number of daily trips generated by each land use is derived from the most recent ITE *Trip Generation* manual.

**Table 5-2**  
**Intersection Improvements Recommended to Maintain**  
**Acceptable Levels of Service in the Year 2030**  
**With the Preferred Project**

Intersection Improvement	Project-Related Contribution To Future Traffic Growth
<b>WEEKDAY AND SATURDAY REQUIRED MITIGATION</b> <b>Palm Canyon Drive @ Museum Way</b> - install a traffic signal - construct an eastbound through lane - construct an eastbound right-turn lane <sup>a</sup> - construct a westbound through lane - construct a westbound left-turn lane <sup>a</sup>	Project Share of Traffic Increase = 68.22%
<b>Indian Canyon Drive @ Museum Way</b> - install a traffic signal - construct an eastbound left-turn lane	Project Share of Traffic Increase = 49.90%
<b>Belardo Road @ Museum Way</b> - install an all-way stop - construct a northbound approach lane - construct a southbound approach lane - construct an eastbound approach lane - construct a westbound approach lane	Project Share of Traffic Increase = 97.09%
<b>Belardo Road @ Tahquitz Canyon Way</b> - install a two-way stop, with STOP signs on Tahquitz Canyon Way - stripe a northbound left-turn lane - construct a southbound left-turn lane - construct a southbound through/right-turn lane - stripe an eastbound left-turn lane - stripe a westbound left-turn lane	Project Share of Traffic Increase = 90.59%
<b>ADDITIONAL MITIGATION ON VILLAGEFEST THURSDAY</b> <b>Belardo Road @ Amado Road</b> - install a traffic signal	Project Share of Traffic Increase = 59.32%
<b>Belardo Road @ Museum Way</b> - install a traffic signal - add a northbound left-turn lane <sup>a</sup> - add a southbound left-turn lane <sup>a</sup>	Project Share of Traffic Increase = 97.09%
<b>Belardo Road @ Arenas Road</b> - install a traffic signal - add a northbound left-turn lane <sup>a</sup> - add a southbound left-turn lane <sup>a</sup>	Project Share of Traffic Increase = 60.36%

a. This improvement is recommended in conjunction with the installation of a traffic signal at the intersection and is not required from an intersection capacity perspective.

**Table 5-3**  
**Intersection Improvements Recommended to Maintain**  
**Acceptable Levels of Service in the Year 2030**  
**With the No-Project Alternative**

Intersection Improvement	Project-Related Contribution To Future Traffic Growth
<b>NO MITIGATION REQUIRED FOR WEEKDAY AND SATURDAY</b>	
<b>MITIGATION ON VILLAGEFEST THURSDAY</b> <b>Belardo Road @ Amado Road</b> - install a traffic signal	Project Share of Traffic Increase = 61.36%

The TUMF program is implemented throughout the Coachella Valley. The Transportation Uniform Mitigation Fee (TUMF) is assessed on all new developments. It also applies to any reconstruction or new use of existing buildings that results in a change of use and generates additional vehicle trips. No tract map, parcel map, conditional use permit, land use permit or other entitlement shall be approved unless payment of the mitigation fee is a condition of approval for any such entitlement.

The mitigation fee is imposed by and collected by the applicable jurisdiction (Palm Springs) and then transmitted to CVAG to be placed in the Coachella Valley Transportation Mitigation Trust Fund. The TUMF fees are reviewed annually to ensure that fees collected are set at a level that balances the cost of planned improvements. Applicants who dispute the fee may file a written notice of appeal with the CVAG Executive Committee within 15 days of imposition of the fee. A decision by majority vote of the committee will be made within 60 days of the appeal filing.

The TUMF program is not required to provide direct financial benefit to the State Highway System. However, it may provide for other improvements that relieve congestion on the Congestion Management Program (CMP) System including State Highways. None of the roadways located within the study area are part of the CMP System of Highways and Roadways.

**Table 5-4**  
**Intersection Improvements Recommended to Maintain**  
**Acceptable Levels of Service in the Year 2030**  
**With the Preserve Town and Country Center Alternative**

Intersection Improvement	Project-Related Contribution To Future Traffic Growth
<b>WEEKDAY AND SATURDAY REQUIRED MITIGATION</b>	
<b>Palm Canyon Drive @ Museum Way</b> - construct an eastbound right-turn lane	Project Share of Traffic Increase = 50.30%
<b>Belardo Road @ Museum Way</b> - install an all-way stop - construct a northbound approach lane - construct a southbound approach lane - construct an eastbound approach lane - construct a westbound approach lane	Project Share of Traffic Increase = 97.29%
<b>Belardo Road @ Tahquitz Canyon Way</b> - install a two-way stop, with STOP signs on Tahquitz Canyon Way - stripe a northbound left-turn lane - construct a southbound left-turn lane - construct a southbound through/right-turn lane - construct a southbound left-turn lane - stripe an eastbound left-turn lane - stripe a westbound left-turn lane - stripe a westbound right-turn lane	Project Share of Traffic Increase = 93.07%
<b>ADDITIONAL MITIGATION ON VILLAGEFEST THURSDAY</b>	
<b>Belardo Road @ Amado Road</b> - install a traffic signal	Project Share of Traffic Increase = 68.15%
<b>Belardo Road @ Museum Way</b> - install a traffic signal - add a northbound left-turn lane <sup>a</sup> - add a southbound left-turn lane <sup>a</sup>	Project Share of Traffic Increase = 97.29%
<b>Belardo Road @ Arenas Road</b> - install a traffic signal - add a northbound left-turn lane <sup>a</sup> - add a southbound left-turn lane <sup>a</sup>	Project Share of Traffic Increase = 62.22%

a. This improvement is recommended in conjunction with the installation of a traffic signal at the intersection and is not required from an intersection capacity perspective.

**Table 5-5**  
**Intersection Improvements Recommended to Maintain**  
**Acceptable Levels of Service in the Year 2030**  
**With Less-Intense Alternative A**

Intersection Improvement	Project-Related Contribution To Future Traffic Growth
<b>WEEKDAY AND SATURDAY REQUIRED MITIGATION</b>	
<b>Palm Canyon Drive @ Andreas Road</b> - install a traffic signal - construct an eastbound through/right-turn lane - construct a westbound through/left-turn lane	Project Share of Traffic Increase = 59.33%
<b>Indian Canyon Drive @ Andreas Road</b> - install a traffic signal - construct an eastbound left-turn lane	Project Share of Traffic Increase = 32.06%
<b>Belardo Road @ Museum Way</b> - install a 2-way stop, with STOP sign on Museum Way - construct a northbound approach lane - construct a southbound approach lane - construct an eastbound left-turn lane - construct an eastbound right-turn lane	Project Share of Traffic Increase = 94.76%
<b>Belardo Road @ Tahquitz Canyon Way</b> - install a two-way stop, with STOP signs on Tahquitz Canyon Way - stripe a northbound left-turn lane - construct a southbound left-turn lane - construct a southbound through/right-turn lane - stripe an eastbound left-turn lane - stripe a westbound left-turn lane	Project Share of Traffic Increase = 90.22%
<b>ADDITIONAL MITIGATION ON VILLAGEFEST THURSDAY</b>	
<b>Belardo Road @ Amado Road</b> - install a traffic signal	Project Share of Traffic Increase = 44.36%



Table 5-6  
 Intersection Improvements Recommended to Maintain  
 Acceptable Levels of Service in the Year 2030  
 With Less-Intense Alternative B

Intersection Improvement	Project-Related Contribution To Future Traffic Growth
<b>WEEKDAY AND SATURDAY REQUIRED MITIGATION</b> <b>Palm Canyon Drive @ Museum Way</b> - install a traffic signal - construct an eastbound through lane - construct an eastbound right-turn lane <sup>a</sup> - construct a westbound through lane - construct a westbound left-turn lane <sup>a</sup>	Project Share of Traffic Increase = 61.82%
<b>Indian Canyon Drive @ Museum Way</b> - install a traffic signal - construct an eastbound left-turn lane	Project Share of Traffic Increase = 40.39%
<b>Belardo Road @ Museum Way</b> - install an all-way stop - construct a northbound approach lane - construct a southbound approach lane - construct an eastbound approach lane - construct a westbound approach lane	Project Share of Traffic Increase = 96.38%
<b>Belardo Road @ Tahquitz Canyon Way</b> - install a two-way stop, with STOP signs on Tahquitz Canyon Way - stripe a northbound left-turn lane - construct a southbound left-turn lane - construct a southbound through/right-turn lane - stripe an eastbound left-turn lane - stripe a westbound left-turn lane	Project Share of Traffic Increase = 88.63%
<b>ADDITIONAL MITIGATION ON VILLAGEFEST THURSDAY</b> <b>Belardo Road @ Amado Road</b> - install a traffic signal	Project Share of Traffic Increase = 53.23%
<b>Belardo Road @ Museum Way</b> - install a traffic signal - add a northbound left-turn lane <sup>a</sup> - add a southbound left-turn lane <sup>a</sup>	Project Share of Traffic Increase = 96.38%

a. This improvement is recommended in conjunction with the installation of a traffic signal at the intersection and is not required from an intersection capacity perspective.

## 6. RECOMMENDATIONS

### City of Palm Springs Requirements

The following items reflect Palm Springs ordinance or policy requirements that apply to all development as conditions of approval.

1. The project proponent shall dedicate appropriate right-of-way, as needed, to accommodate the ultimate improvement of all General Plan public roadways within and adjacent to the project site. The developer may be required, prior to approval of development plans, to provide increased right-of-way through land dedications to accommodate additional demand for exclusive right-turn lanes, bus stops and lanes, bicycle facilities or other improvements required to maintain a minimum operating LOS D at intersections.
2. Master planned roadways shall be improved on and adjacent to the site per the design standards specified in the *Museum Market Plaza Specific Plan*.
3. Private roads shall be developed in accordance with the City's published engineering standards for public streets, unless otherwise approved by the City Engineer.
3. The developer shall, as a condition of approval, participate in the construction of bikeways on and/or adjacent to the site as required by the City of Palm Springs, to reconnect the existing recreational bike trails in the area known as the Las Palmas Loop, the Heritage Trail, the Citywide Loop, and the Downtown Loop that would be disconnected as a result of the removal of the segment eliminated by the vacation and abandonment of Belardo Road/Museum Drive proposed. The developer, may be required prior to approval of development plans, to provide right-of-way through land dedications to accommodate the City's network of trails and non-motorized routes.
4. The developer shall provide off-street parking and loading facilities for the proposed development, as specified in the development standards and guidelines within the Museum Market Plaza Specific Plan. Loading spaces shall be provided which meet the requirements of Section 93.07.01 of the *Palm Springs Municipal Code*. The off-street parking layout shall be subject to the review and approval of the City Engineer.
5. The project proponent shall provide accessible parking spaces and accessible parking aisles (96 inches wide and designated "Van Accessible") that are ADA compliant. If valet parking facilities are provided, an accessible passenger loading zone shall also be provided on an accessible route to the entrance of the facility. If passenger loading zones are provided on-site, then at least one passenger loading zone shall be accessible.
6. The project proponent shall provide accessible routes of travel (including compliant curb ramps, sidewalks, and other improvements) along all public streets and within all public spaces and common areas, in accordance with current ADA guidelines and standards.

7. The project proponent shall contribute traffic impact mitigation fees, by participating in the Traffic Uniform Mitigation Fee (TUMF) program.

#### **Recommended Mitigation**

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

8. The intersection approach lanes and traffic controls at the on-site and off-site key intersections should be improved consistent with Figures 5-1 through 5-7.
9. To insure compliance with City access and design standards, the final building and parking layout and site access design shall be subject to the review and approval of the City Engineer as part of the development review process.
10. Adequate reservoir capacity shall be provided at the access proposed to all parking structures to assure that cars waiting for entry to the parking garages on-site do not obstruct the adjacent street, particularly in the peak travel periods.
11. Clear unobstructed sight distances shall be maintained at the unsignalized site driveways, site access intersections, and internal intersections. All driveways with traffic exiting across public sidewalks shall have a clear sight triangle inside the property measuring 8 feet by 8 feet to allow driver visibility of pedestrians on the sidewalk. Screening fences or shrubbery shall not produce view obstructions at driveways or intersections.
12. Angled parking should not be located on-street along Palm Canyon Drive, Indian Canyon Drive, Tahquitz Canyon Way, or Belardo Road since roadways with angled parking have been shown to have substantially higher crash rates than roadways with parallel parking.
13. Based on the need to maintain adequate north/south capacity during Villagefest (and other community activities that may require the closure of Palm Canyon Drive) as well as continuous access for emergency services to the area west of Palm Canyon Drive and promote pedestrian safety along Belardo Road, the extension of Belardo Road proposed across the site to Tahquitz Canyon Way should be classified as a public "Collector" street with a 66-foot right-of-way in the Circulation Element of the *Palm Springs General Plan*. To avoid an inconsistency with the General Plan Circulation Element, a Circulation Element Amendment may be required to add the proposed extension of Belardo Road across the site as a "Collector" street to Tahquitz Canyon Way. Any on-street parking along the Belardo Road extension should be proposed in a Downtown Area Parking Study to be completed in the near future and approved by the City Engineer.
14. All off-street parking areas constructed on-site shall be adequately illuminated, to promote user safety and security as well as minimize the potential for vehicle-pedestrian collisions, without glare or excessive light beyond the property.
15. The loading facilities on-site shall be designed in a manner such that trucks will not back in or out of the loading facilities onto a public street or be required to use any public street for parking. All areas used by trucks shall be graded, properly drained, paved, and maintained.

16. All of the site development alternatives would substantially increase the demand for public transportation services within the downtown core area, the project proponent shall coordinate with SunLine Transit Agency and the City of Palm Springs regarding the need for public transit facilities on-site.

17. The project proponent shall contribute on a fair-share basis to the cost of circulation improvements required within the study area.

#### **6A. ROADWAY IMPROVEMENTS**

##### **Site Access**

To maintain the necessary roadway capacity while minimizing congestion, Belardo Road should be improved as a public "Collector" street. On-street parking should be prohibited on the approaches to intersections to assure adequate intersection sight distances, particularly in the vicinity of Museum Way. Based on the substantial reduction in capacity and demonstrated increase in accident rates, angled on-street parking should be avoided on-site if feasible.

The east/west connector to Palm Canyon Drive and Indian Canyon Drive provides a better distribution of project traffic and reduces the impact on intersections along Amado Road and Tahquitz Canyon Way. However, the Preserve Town & Country Center Alternative demonstrates that an additional east/west vehicular access is not required for the Museum Market Plaza Specific Plan but may be desirable from a market perspective. Without Museum Way, new traffic signals could be avoided on Palm Canyon Drive and on Indian Canyon Drive that would increase delay for through traffic on these major thoroughfares.

With Less-Intense Alternative A, the extension of Andreas Road across the site to Belardo Road will provide additional east/west vehicular access rather than Museum Way. Andreas Road is located midway between Amado Road and Tahquitz Canyon Way (660 feet from each) and would provide better signal spacing.

The mixed-use activity center proposed would create numerous transit destinations in close proximity and could be readily designed with unified access and circulation systems including bicycle and pedestrian facilities that benefit drivers, transit riders, pedestrians and cyclists. A balanced connected network of streets and sidewalks with increased opportunities for alternative transportation modes will make the area more pedestrian friendly as well as more inviting to bicyclists and transit riders. Transit stops can be made more accessible via sidewalks and pedestrian paths if building entrances can be located near transit stops to provide more direct pedestrian access. Bus stop spacing in core areas of Central Business Districts range from 300 feet to 1,000 feet with a typical spacing of 600 feet.

Bicycle lanes can be incorporated into the design of new and reconstructed roadways to replace the segment eliminated with the vacation and abandonment of Belardo Road/Museum Drive. To enhance the safety of bicycle lanes where they cross a right-turn lane, consideration should be given to changing the color of the pavement to alert drivers to the potential conflict.

##### **Traffic Signals**

With the No-Project Alternative, no traffic signals would be warranted or required upon project opening to accommodate traffic volumes on typical weekdays or Saturdays. However, upon General Plan build out in the year 2030, the intersection of Belardo Road

and Amado Road is projected to meet peak hour traffic signal warrants on Thursdays with Villagefest.

With the Preserve Town and Country Center Alternative, none of the intersections evaluated are projected to meet urban peak hour traffic signal volume warrants or require signalization on peak season typical weekdays or Saturdays upon project opening or upon General Plan build out in the year 2030. However, with Villagefest traffic volumes and the closure of Palm Canyon Drive, three intersections are projected to meet signal warrants and require signalization in the year 2030 including: (1) Belardo Road at Amado Road, and (2) Belardo Road at Museum Way. The intersection of Belardo Road and Arenas Road will require signalization in the year 2030 with the Preferred Project..

With the Preferred Project and Less-Intense Alternative B, the intersections of Palm Canyon Drive with Museum Way and Indian Canyon Drive with Museum Way are projected to meet the urban peak hour traffic signal volume warrants on typical weekdays and Saturdays in the peak season and require signalization upon project opening. To accommodate projected year 2030 traffic volumes at acceptable levels of service with Villagefest traffic and the closure of Palm Canyon Drive, two additional intersections will require signalization: (1) Belardo Road at Amado Road, (2) Belardo Road at Museum Way, and (3) Belardo Road at Arenas Road.

With Less-Intense Alternative A, traffic control signals will be warranted and required upon project opening at two intersections based upon the traffic projections for typical weekdays and Saturdays in the peak season. These two intersections include: Palm Canyon Drive at Andreas Road and Indian Canyon Drive at Andreas Road. Although the intersection of Indian Canyon Drive and Andreas Road is currently signalized for one-way operation of on Andreas Road (between Indian Canyon Drive and Palm Canyon Drive), the existing signals would need to be modified to reflect the proposed two-way operation of Andreas Road (west of Indian Canyon Drive). To accommodate projected year 2030 traffic volumes at acceptable levels of service with Villagefest traffic and the closure of Palm Canyon Drive, the intersection of Belardo Road and Amado Road would also require signalization in the year 2030.

#### **6B. TRANSPORTATION SYSTEM MANAGEMENT ACTIONS**

The project will comply with all applicable provisions of the City of Palm Springs adopted Transportation Demand Management (TDM) Ordinance. Bicycle racks or bicycle parking facilities may be required in any development submitted for architectural approval. If required, the location and design of these facilities shall be shown on the Site Plan and subject to the review and approval of the City Engineer.

Parking design standards set forth in Municipal Code Section 93.06.00 C-8 ("On-site Turn-around") specify that automobile parking so arranged as to require the backing of motor vehicles onto a major or secondary highway shall be prohibited in any zone. Section C-9 ("Pedestrian Walkways") states that pedestrian walkways shall be provided between the parking area and the building or use being served. Consideration should be given to the provision of facilities such as passenger loading areas, reserved parking for carpools and vanpools, and bicycle parking facilities for employees and customers.