

4.11 TRANSPORTATION/TRAFFIC

This section evaluates the potential for implementation of the proposed Palm/Industrial Distribution Center Project (proposed project) to result in impacts to traffic, circulation, parking, access, and other transportation modes, including the potential for the proposed project to increase local and regional traffic volumes, exceed a level of service (LOS) standard, increase hazards due to a design feature, interfere with emergency access, result in an inadequate parking supply, and/or conflict with applicable transportation programs and policies. This analysis describes the existing conditions and regulations, and summarizes the methodology and results of the traffic impact analysis prepared for the proposed project.

Information used to prepare this section was derived from the *Sight Distance Analysis for the Proposed Palm Avenue Warehouse Project in the City of San Bernardino* (February 2011), prepared by Crain & Associates and included as Appendix L1 to this environmental impact report (EIR), and the traffic impact analysis performed for the proposed project by Crain & Associates (*Traffic Impact Analysis Report for the Palm Avenue Warehouse/Distribution Center Project*, December 2007) and update memorandum dated February 11, 2011, both of which are included as Appendix L2. Full bibliographic entries for all referenced materials and communication are provided in Section 4.11.6 (References).

No comment letters related to transportation/traffic were received in response to the notice of preparation (NOP) circulated on August 3, 2007, for the proposed project.

4.11.1 Environmental Setting

The proposed project is located in the northwestern portion of the City of San Bernardino (City), where the surrounding development south of Interstate 215 (I-215) is largely zoned “Industrial,” with considerable undeveloped land throughout. North of I-215, to the San Bernardino National Forest, is largely zoned “Single-Family Residential.” The boundaries of the proposed project include Industrial Parkway to the south, I-215 to the northeast, Palm Avenue to the west, and undeveloped land to the east.

■ Roadways

Freeways

Interstate 215

Also known as the Barstow Freeway, I-215 is a north/south-oriented freeway adjacent to the northeast side of the project site. This facility provides two mainline travel lanes in each direction in the study area (area potentially impacted by the proposed project). A full freeway-to-freeway interchange is provided at Interstate 15 (I-15), approximately 4 miles northwest of the project site. From that location, I-215 extends southerly through Riverside County and reconnects with I-15 in the City of Murrieta. According to the most recent (year 2006) Caltrans data available, average traffic volumes on I-215 between Devore Road and Palm Avenue are approximately 71,000 vehicles per day (VPD) and 6,000 vehicles per hour

(VPH). Immediate access to the project site's surface street network is provided along I-215 by northbound and southbound ramps at Palm Avenue.

Streets

Palm Avenue

Designated a "Secondary Arterial" between Cajon Boulevard and Ohio Avenue, Palm Avenue begins in the San Bernardino National Forest and extends southerly, to Cajon Boulevard. Palm Avenue varies from one to two through lanes in each direction. Its intersection with Little League Drive and Kendall Drive is signalized, and provides left-turn channelization in both directions.

Kendall Drive

A "Major Arterial," Kendall Drive is a continuation of West Little League Drive from the Palm Avenue signalized intersection. Two travel lanes and a bike lane are provided in each direction. Another segment of Kendall Drive extends northwesterly for less than 2 miles from Palm Avenue, opposite the I-215 southbound ramps to Cajon Boulevard.

Industrial Parkway

Industrial Parkway is a northwest-southeast oriented Secondary Arterial which traverses from Kendall Drive to Lexington Way between I-215 and Cajon Boulevard. East of Lexington Way, this roadway becomes Hallmark Parkway. At Palm Avenue, Industrial Parkway provides one through lane and left-turn channelization in each direction.

Cajon Boulevard

Part of the historic Route 66, and parallels I-215 throughout much of its route, Cajon Boulevard extends southeasterly from about ¼ mile northwest of the Devore Road/Glen Helen Parkway/Cajon Boulevard intersection to its southern terminus at 21st Street just south of Highland Avenue in the City of San Bernardino. Another segment of Cajon Boulevard resumes west of I-15. Cajon Boulevard is designated a Mountain Secondary Highway west of Kenwood Avenue and a Major Arterial east of Glen Helen Parkway. This roadway generally has one to two lanes in each direction, with left-turn channelization at major intersections.

■ Public Transportation

Public transportation options are provided within walking distance of the project site. Omnitrans, the local public bus service provider, provides one bus route to service the project site. In addition, Metrolink, Southern California's regional rail system, operates the San Bernardino Line just south of the project site. An overview of the transit service that is available in and around the project site is provided below.

Omnitrans

The project site is served by one Omnitrans line. Route 7 operates along Kendall Drive and Palm Avenue. This route connects the northern and southern parts of the City, stopping at destinations including Cal State San Bernardino, the Carousel Mall, and the 4th Street Transit Mall. Approximate hourly headways are provided seven days a week.

Metrolink

San Bernardino Line

Metrolink provides daily rail service among San Bernardino County (County), the San Gabriel Valley, and Downtown Los Angeles. The San Bernardino Line provides a stop at Los Angeles Union Station, thereby providing transfer opportunities to a variety of public transit services. The San Bernardino Line stops in close proximity to the San Bernardino Station, located at 1204 West 3rd Street, in the southern portion of the City. When used in conjunction with Omnitrans Route 7, the San Bernardino Line is accessible to and from the project site. The San Bernardino Line operates seven days a week, with weekday headways of approximately 20 minutes during peak periods.

Traffic Volumes and Level of Service

Table 4.11-1 (Existing LOS Summary) shows the existing (2007) AM and PM peak hour LOS values for the study area intersections.

Table 4.11-1 Existing LOS Summary					
Number	Intersection	Peak Hour Period	V/C	Delay (seconds)	LOS
1	Palm Ave. & Kendall Dr./Little League Dr.	AM	1.032	35.8	D
		PM	1.020	34.0	C
2	Palm Ave. & I-215 NB On/Off-Ramps	AM	*	32.7	D
		PM	*	26.6	D
3	Palm Ave. & I-215 SB On/Off-Ramps/Kendall Dr.	AM	0.985	33.6	D
		PM	0.596	14.2	B
4	Palm Ave. & Industrial Pkwy.	AM	*	18.2	C
		PM	*	14.8	B
5	Palm Ave./Institution Rd. & Cajon Blvd.	AM	0.545	12.1	B
		PM	0.267	9.2	A

SOURCE: *Traffic Impact Analysis Report for the Palm Avenue Warehouse/Distribution Center Project, 2007.*

* Volume over capacity ratio not provided for one- and two-way stop sign-controlled intersections.

4.11.2 Methodology

The following describes the methodology used to estimate the existing LOS, trip generation for the proposed project, and distribution and assignment of these trips to the street system in the study area.

■ Existing Traffic Volumes and Levels of Service

Study Intersections

To assess existing traffic conditions on the highway system serving the project site, a detailed analysis was made of the five intersections listed below in Table 4.11-2 (Intersections Studied), which were determined in consultation with City staff.

Table 4.11-2 Intersections Studied
<i>Intersection</i>
Palm Avenue & Kendall Drive/Little League Drive
Palm Avenue & I-215 Northbound Ramps*
Palm Avenue & I-215 Southbound Ramps/Kendall Drive*
Palm Avenue & Industrial Parkway*
Palm Avenue/Institution Road & Cajon Boulevard*
* One-way, two-way, or all-way stop sign–controlled

In addition, a review of the intersections and freeway segments was conducted to determine if the proposed project traffic volumes would exceed County growth standards. According to the County growth standards, the analysis must include all arterial segments where the anticipated project volume equals or exceeds 80 two-way trips during the peak hours for non-state highway facilities, and 50 two-way trips during the peak hours for state highway facilities. Also, an analysis is required for freeway segments where the project is expected to generate 100 or more peak-hour trips (two-way). Based on these standards, no additional intersections other than the five study intersections listed above are required for analyses. Also, the proposed project is not expected to generate 100 or more peak-hour trips (two-way) on any freeway segments. Thus, no further Congestion Management Plan (CMP) freeway mainline analyses are warranted.

Traffic Counts

The traffic volumes used in the following analyses were based entirely on new traffic count data collected at the five study intersections in May 2007 by The Traffic Solution, an independent traffic data collection firm. Additional traffic count data were collected in September 2010. The traffic counts were conducted on days representing typical or average traffic conditions in the study area. These counts include passenger-car trips as well as the number and type of truck trips, and were converted to passenger-car equivalent (PCE) trips. Updated traffic counts were taken in September 2010, which showed a reduction in traffic volumes compared to the data collected in May 2007. This may be an artificial reflection of the

downturn in the economy, and traffic may return to “normal” conditions upon economic improvement. In any event, for purposes of providing the most conservative analysis, the data from 2007 are used as the baseline for an analysis of project impacts. It should also be noted that for cumulative conditions, the estimates for the 2030 condition provided in the December 2007 traffic study are higher than the volumes calculated in the SANBAG study (see Appendix L2), providing further evidence that the December 2007 traffic study represents a more conservative analysis for CEQA purposes.

All traffic analyses were performed using traditional and well-established traffic engineering techniques. Traffic volume information, as noted previously, was obtained from recent counts of the study intersections. The counts were conducted specifically for this study to insure that any recent changes in traffic patterns would be reflected in this study. Information pertaining to intersection geometrics and traffic control operations were obtained through recent field surveys of the study locations. One study intersection, located at Palm Avenue and Kendall Drive/Little League Drive, is controlled by a traffic signal. The remaining four study intersections are stop sign-controlled.

Analysis and Evaluation of Traffic Operations

The analysis and evaluation of traffic operations at each study intersection is based on procedures outlined in the Highway Capacity Manual (HCM), per County CMP guidelines, using the Traffix 7.9 program. This methodology determines the operating characteristics of an intersection in terms of the LOS provided for different levels of traffic volumes and other variables such as lane configurations and type of control. Level of Service describes the quality of service. Intersections with a LOS of A, B, or C operate quite well. Typically, LOS D is the design level of service for many metropolitan street systems. LOS E represents volumes at or near the capacity of the facility, and might result in stoppages of momentary duration and fairly unstable flow. LOS F occurs when a facility is overloaded and is characterized by stop-and-go traffic with stoppages for a long duration. Table 4.11-3 (Level of Service as a Function of Delay) further explains LOS types used in this section.

By applying this analysis procedure to the signalized study intersections, average vehicular delay and the corresponding LOS for existing traffic conditions were determined. Similarly, HCM methodologies were used to analyze the one-way, two-way, and all-way stop sign-controlled study intersections. The analysis of existing traffic conditions at the five study area intersections shows that all of these intersections are operating at LOS D or better during the AM and PM peak hours. It should be noted that the delay for signalized and all-way stop sign-controlled intersections is the average delay for all vehicles entering the intersection during the specified peak-hour period, whereas the delay for one- and two-way stop-sign-controlled intersections is based on the worst-case approach delay for the minor approaches. Thus, the average delay for all vehicles at one- and two-way stop sign-controlled intersections is substantially less.

Under the California Environmental Quality Act (CEQA), each local jurisdiction must determine which traffic (and other environmental) impacts it considers “significant.” The City’s General Plan states that intersection operations at LOS D or better during the peak hour are generally acceptable. Therefore, any intersection operating at LOS E or F would be considered deficient. A traffic impact is considered significant if the project both (1) contributes measurable traffic to and (2) substantially and adversely changes the LOS to any location projected to experience deficient operations under foreseeable

Table 4.11-3 Level of Service as a Function of Delay

<i>Level of Service</i>	<i>Description of Operating Characteristics</i>	<i>Signalized Average Delay per Vehicle (in seconds)^a</i>	<i>One, Two, and All-Way Stop-Controlled Delay per Vehicle (in seconds)^{b, c}</i>
A	Uncongested operations; all vehicles clear in a single cycle	< 10	< 10
B	Same as above	> 10–20	> 10–15
C	Light congestion; occasional backups on critical approaches	> 20–35	> 15–25
D	Congestion on critical approaches	> 35–55	> 25–35
E	Severe congestion with some long-standing lines on critical approaches. Blockage of intersection may occur if traffic signal does not provide turning movements	> 55–80	> 35–50
F	Forced flow with stoppages of long duration	> 80	> 50

- a. From Exhibit 16-2 of the Highway Capacity Manual (2000), Transportation Research Board, Washington, D.C., 2000.
- b. From Exhibits 17-2 & 17-22 of the Highway Capacity Manual (2000), Transportation Research Board, Washington, D.C., 2000.
- c. Delay for all-way stop sign-controlled intersections is the average delay for all vehicles. Delay for one- and two-way stop sign-controlled intersections is the worst delay for the critical minor approaches. Average delay for all vehicles at two-way stop sign-controlled intersections is less.

cumulative conditions. For this EIR, a significant traffic impact is defined to be those locations where cumulative traffic would cause conditions to degrade below the General Plan goal of LOS D.

■ Traffic Forecasts

The future (2030) traffic volumes around the project site were forecasted by the City, using their local refinement of the regional travel demand model, called the East Valley Transportation Model (EVTM). The year 2030 was selected because the CMP requires analysis of long-term horizon year conditions, currently 2030 based on the EVTM. The EVTM was determined to be the most appropriate long-range transportation-planning tool for this analysis. The EVTM uses a regional land-use database that was developed in close consultation with the relevant local jurisdictions that regulate land use and acceptable levels of development. The future year street and highway networks assumed for this model were also developed based on input from jurisdictions throughout the region. The parameters within the model (trip generation rates, roadway capacities, etc.) have been calibrated for more than a 20-year period to closely replicate the particular transportation patterns and characteristics specifically for the City and surrounding areas.

The EVTM is based on the Southern California Association of Governments (SCAG) San Bernardino/Riverside Comprehensive Transportation Plan (CTP) model. The San Bernardino/Riverside CTP model is a refinement of the SCAG regional model and was developed jointly by the SCAG and the San Bernardino Association of Governments (SANBAG). The County’s CMP is formed using model output from this jointly developed CTP model. The EVTM contains somewhat more disaggregate land use data in the study area than the CTP and SCAG regional models, and it also contains additional roadways (links) in the study area that are not replicated in the CTP and SCAG regional models. The EVTM was also developed using similar modeling procedures that were used in the CTP and SCAG

modeling procedures, so it has a high level of consistency with the original CTP and SCAG regional travel demand models.

As noted previously, SANBAG recently completed a traffic study in connection with its proposed railroad grade separation project on Palm Avenue, just south of the project site (SANBAG 2010). The 2035 traffic volume forecasts were determined to be lower than the 2030 City forecasts. However, as with the baseline traffic counts, the more conservative 2030 City forecasts are used for the analysis of the impacts of the project combined with future traffic volumes presented in this section.

Model Conditions

Existing Conditions

This scenario replicates existing traffic conditions based on year 2007 socioeconomic data and existing roadway network conditions. Future growth estimates is determined by comparing traffic model volumes from the future “Without Project” conditions and existing conditions. More conservative 2007 traffic counts and 2030 City traffic volume forecasts were used as the baseline to provide a more conservative analysis.

Opening Day “Without Project” Conditions

The combined effect of future regional growth in vehicle trips (based on the interpolation of growth projections between future “Without Project” traffic volumes and Existing traffic volumes), excluding the land use changes due to the proposed project itself, established the future conditions that would occur without the development of the proposed project through the year 2010.

Opening Day “With Project” Conditions

The combined effect of future regional growth in vehicle trips (from the Opening Day “Without Project” Conditions), plus the land use changes due to the proposed project itself, established the future conditions that would occur with the development of the proposed project through the year 2010.

Future “Without Project” Conditions

The combined effect of future regional growth in vehicle trips (based on the greater of the EVTMM growth projections and the growth from known, proposed or potential projects in the study area), excluding the land use changes due to the proposed project itself, established the future conditions that would occur without the development of the proposed project through the year 2030.

Future “With Project” Conditions

The combined effect of future regional growth in vehicle trips (including EVTMM forecasts and information on known, proposed or potential projects in the study area), including the land use changes due to the proposed project itself, established the future conditions that would occur with the development of the proposed project through the year 2030.

■ Project Trip Generation

The vehicle trip generation rates for the proposed project were based on a *San Bernardino/Riverside County Warehouse/Distribution Center Vehicle Trip Generation Study* prepared by SANBAG in 2005. These formulas for daily, AM peak-hour, and PM peak-hour trip generations, along with directional distribution percentages (inbound vs. outbound), are listed in Table 4.11-4 (Level of Service as a Function of Delay), below. These trip rates estimate PCE trips in order to provide a direct application for consistency with the existing traffic counts and to account for the volume of truck traffic in the study area.

Time Period	Trip Generation Rate	Directional Distribution	
		Inbound	Outbound
Daily	T = 1.91 (A)	50%	50%
AM Peak Hour	T = 0.13 (A)	54%	46%
PM Peak Hour	T = 0.13 (A)	41%	59%

SOURCE: *Traffic Impact Analysis Report for the Palm Avenue Warehouse/Distribution Center Project, 2007.*

T = Total of one-way trips entering and leaving the site.

A = Area of building (gross floor area) in thousands of square feet.

Applying those rates, the traffic expected to be generated by the proposed project is approximately 1,303 daily trips, including 89 AM peak-hour trips and 89 PM peak-hour trips, as shown in Table 4.11-5 (Project Trip Generation), below.

Proposed Use	Size	Daily	A.M. Peak Hour			P.M. Peak Hour		
			I/B	O/B	Total	I/B	O/B	Total
Warehouse/Distribution Facility	678,275	1,303	48	41	89	36	53	89

SOURCE: *Traffic Impact Analysis Report for the Palm Avenue Warehouse/Distribution Center Project, 2007.*

Distribution

Each trip to and from the project site will be linked to another site somewhere within the region. For example, each commute trip to the project site in the morning will have started at an employee's residence. The computerized transportation gravity model of trip linkages for the proposed project was utilized to estimate the location to which each of the project generated trips will be linked. This model also considers the land-use patterns throughout the Southern California area to estimate current trip making patterns. Additionally, it considers future growth patterns to determine how trip linkages will change over time.

Assignment

Using the trip distribution as described above, the EVTm was utilized to assign traffic to individual roadways within the study area. The computer model assumes drivers follow the most rational, direct path. This model accounted for the level of congestion on each roadway and determined which path resulted in the shortest travel time for each trip. This has been shown to produce the most reliable overall traffic projections. Further, this procedure concentrates volumes and improvements on the preferred (major) routes rather than encouraging use of minor routes.

■ Future Roadway Improvements

Two important roadway improvements will be made in the northwestern portion of the City. The improvements include the reconstruction of the I-215/University Parkway interchange and the University Parkway overpass improvement at Cajun Boulevard. Both of these roadway improvements are located about 2.5 miles southeast of the project site. These improvements were assumed in the EVTm due to their proximity to the project site.

4.11.3 Regulatory Framework

■ Federal

There are no federal policies that would apply to transportation/traffic for the proposed project.

■ State

There are no state policies that would apply to transportation/traffic for the proposed project.

■ Regional

Southern California Association of Governments

The SCAG, which is the designated Metropolitan Planning Organization for six Southern California counties (Ventura, Orange, San Bernardino, Riverside, Imperial, and Los Angeles), is federally mandated to develop plans for transportation, growth management, hazardous waste management, and air quality. The SCAG has prepared the Regional Comprehensive Plan and Guide (RCPG) in conjunction with its constituent members and other regional planning agencies. The RCPG is intended to serve as a framework to guide decision-making with respect to the growth and changes that can be anticipated in the region through the year 2015. The RCPG consists of five core chapters that contain goals, policies, implementation strategies, and technical data that support three overarching objectives for the region, including (1) improving the standard of living for all, (2) improving the quality of life for all, and (3) enhancing equity and access to government. Local governments are required to use the RCPG as the basis for their own plans and are required to discuss the consistency of projects of regional significance with the RCPG.

The SANBAG is the council of governments and transportation planning agency for the County. The SANBAG is responsible for cooperative regional planning and furthering an efficient multi-modal transportation system countywide. The SANBAG serves the 1.9 million residents of the County. As the County transportation commission, SANBAG supports freeway construction projects, regional and local road improvements, train and bus transportation, railroad crossings, call boxes, ridesharing, congestion management efforts, and long-term planning studies. SANBAG administers Measure I, the ½-cent transportation sales tax approved by County voters in 1989.

■ Local

City of San Bernardino General Plan

The City’s General Plan includes Section 6—Circulation Element. The Circulation Element includes goals and policies to enhance the efficiency of the transportation system and to promote the use of alternative modes. Some of the goals and policies of the General Plan that pertain to “Transportation/Traffic” are described below.

- Goal 6.2** Maintain efficient traffic operations on City streets.
 - Policy 6.2.1** Maintain a peak hour level of service D or better at street intersections.
 - Policy 6.2.2** Design each roadway with sufficient capacity to accommodate anticipated traffic based on intensity of projected and planned land use in the City and the region while maintaining a peak hour level of service (LOS) “C” or better.
 - Policy 6.2.3** Keep traffic in balance with roadway capacity by requiring traffic studies to identify local roadway and intersection improvements necessary to mitigate the traffic impacts of new developments and land use changes.

- Goal 6.3** Provide a safe circulation system.
 - Policy 6.3.4** Require appropriate right-of-way dedications of all new developments to facilitate construction of roadways shown on the Circulation Plan.
 - Policy 6.3.6** Locate new development and their access points in such a way that traffic is not encouraged to utilize local residential streets and alleys.
 - Policy 6.3.7** Require that adequate access be provided to all developments in the City including secondary access to facilitate emergency access and egress.

- Goal 6.5** Develop a transportation system that reduces conflicts between commercial trucking, private/public transportation and lands uses.

Policy 6.5.1 Provide designated truck routes for use by commercial/industrial trucking that minimize impacts on local traffic and neighborhoods.

Goal 6.9 Achieve a balance between parking supply and demand.

Policy 6.9.1 Ensure that developments provide an adequate supply of parking to meet its needs either on-site or within close proximity.

Consistency Analysis

The proposed project is consistent with the City's General Plan—Circulation Element. As analyzed within Impact 4.11-1, below, the proposed project would mitigate for its share of circulation related impacts, with mitigation ensuring that the LOS at the five intersections studied remains at a level of service C or better.

The proposed project is located adjacent to I-215 and away from residential uses, so as traffic (which includes a large proportion of big-rig traffic) moves to and from the project site quickly and efficiently, avoiding heavy utilization of surface streets, especially within residential neighborhoods.

As analyzed within Impact 4.11-4, below, the proposed project would actually provide a surplus of parking within the project site.

4.11.4 Project Impacts and Mitigation Measures

■ Analytic Method

The analytic method is provided within Section 4.11.2 (Methodology).

■ Thresholds of Significance

The following thresholds of significance are based on Appendix G of the 2011 CEQA Guidelines and City-specific thresholds, where applicable. For the purposes of this EIR, implementation of the proposed project may result in a potentially significant impact if the proposed project would:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit
- Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses(e.g., farm equipment)

- Result in inadequate emergency access
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

Effects related to the following thresholds were found to have “no impact,” and are discussed in Section 4.14 (Effects Not Found to Be Significant):

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in locations that results in substantial safety risks

■ Less-Than-Significant Impacts

Threshold	Would the project conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
Threshold	Would the project conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Impact 4.11-1 **The proposed project would add traffic volumes to intersections that would be potentially significant; however, implementation of mitigation measures MM4.11-1(a) and MM4.11-1(b) would bring the level of service of study area intersections to an acceptable level and the project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system or an applicable congestion management program. This impact would be *less than significant*.**

Construction

Construction of the proposed project is anticipated to occur over approximately 22 months beginning in the third or fourth quarter of 2011. Construction of the proposed project would occur in three phases. Phase one of the construction activities would involve excavating, grading and site preparation for approximately twelve months. The existing hill features located on site would be leveled and approximately 200,000 cubic yards of soil would be exported. Phase II would involve building construction, including pouring the building foundation, forming the concrete panels that will become the sides of the building and erecting (tilting up) the structure for approximately seven months. The final phase would involve construction activities of finishing and landscaping which is expected to last approximately three months.

Potential off-site impacts associated with construction activities are due primarily to construction worker trips and material hauling. The arrival and departure times for construction workers would remain the

same and would occur during off-peak hours, typically arriving 7:00 AM and leaving before 8:00 PM. The movement of heavy construction equipment (e.g. graders) to and from the construction site would also be scheduled during off-peak hours. Nonetheless, there is the potential for conflicts between construction activities and through traffic, and such impacts would be avoided by the implementation of mitigation measure MM4.11-1(a) below.

- MM4.11-1(a)* Measures designed to mitigate construction-related transportation/traffic impacts:
- *Construction truck routes shall be prepared to designate principal haul routes for trucks delivering materials to and from the construction site.*
 - *Should a temporary road and/or lane closure be necessary during construction, the Project Applicant shall provide traffic control activities and personnel, as necessary, to minimize traffic impacts. This may include detour signage, cones, construction area signage, flagmen, and other measures as required for safe traffic handling in the construction zone.*
 - *The developer shall be required to keep a minimum of one lane in each direction free from encumbrances at all times on perimeter streets accessing the project site. In the event a full road closure is required, the contractor shall coordinate with the City of San Bernardino Police and Fire Departments to designate proper detour routes and signage to appropriate proper access routes.*

Implementation of mitigation measure MM4.11-1(a) would ensure that construction-related traffic impacts would be ***less than significant***.

Operation

The future lane configurations were assumed to be the same compared to existing lane configuration conditions with and without the proposed project. Using the future traffic volumes and lane configuration assumptions, the LOS at the study area intersections were calculated. Table 4.11-6A (Intersection LOS Summary—Opening Day with and without Project Conditions), and Table 4.11-6B (Intersection LOS Summary—Future with and without Project Conditions) presents the results of the AM and PM peak hour analysis of Future traffic conditions.

The proposed project, completed but not mitigated, would have a significant traffic impact at two study area intersections based on the analysis of the Opening Day traffic conditions contained in Table 4.11-6A. Table 4.11-6B shows that a significant traffic impact would occur at four study area intersections for Future traffic conditions.

The total net new volumes (“Future with Project Volume” minus “Existing Volume”) were summed at the four significantly impacted study intersections for Future traffic conditions. The proposed project’s contributions to volumes at intersections were also calculated by determining the total number of vehicles passing through each intersection. Table 4.11-7 (Project Contributions to Total New Volumes Study Period 2007–2030) quantifies the proposed project’s contribution to new traffic volumes for the 23-year study period (years 2007 to 2030). Specifically, the ratio of “Project Contribution Volumes” to “Total Net New Volumes” is used to determine the proposed project’s contribution to total new volumes for each study area intersection where a significant traffic impact would occur.

Table 4.11-6A Intersection LOS Summary—Opening Day with and without Project Conditions

Number	Intersection	Peak Hour	Without Project			With Project		
			V/C	Delay	LOS	V/C	Delay	LOS
1	Palm Ave. & Kendall Dr./Little League Dr.	AM	1.010	35.1	D	1.016	35.5	D
		PM	1.030	34.9	C	1.033	35.1	D
2	Palm Ave. & I-215 NB On/Off-Ramps	AM	*	75.9	F	*	>100	F**
		PM	*	37.9	E	*	44.1	E**
3	Palm Ave. & I-215 SB On/Off-Ramps/Kendall Dr.	AM	1.085	45.7	E	1.111	48.4	E**
		PM	0.666	17.0	C	0.713	18.1	C
4	Palm Ave. & Industrial Pkwy.	AM	*	19.9	C	*	23.1	C
		PM	*	15.8	C	*	18.4	C
5	Palm Ave./Institution Rd. & Cajon Blvd.	AM	0.583	12.6	B	0.585	12.6	B
		PM	0.347	10.0	B	0.353	10.1	B

SOURCE: Traffic Impact Analysis Report for the Palm Avenue Warehouse/Distribution Center Project, 2007.

* Volume to capacity ratio not provided for one- or two-way, stop sign-controlled intersections.

** Indicates a significant project traffic impact, prior to mitigation.

Table 4.11-6B Intersection LOS Summary—Future with and without Project Conditions

Number	Intersection	Peak Hour	Without Project			With Project		
			V/C	Delay	LOS	V/C	Delay	LOS
1	Palm Ave. & Kendall Dr./Little League Dr.	AM	1.008	42.5	D	1.006	42.9	D
		PM	0.988	40.3	D	0.991	40.5	D
2	Palm Ave. & I-215 NB On/Off-Ramps	AM	*	>100	F	*	>100	F**
		PM	*	>100	F	*	>100	F**
3	Palm Ave. & I-215 SB On/Off-Ramps/Kendall Dr.	AM	1.772	>100	F	1.822	>100	F**
		PM	1.709	>100	F	1.733	>100	F**
4	Palm Ave. & Industrial Pkwy.	AM	*	46.5	E	*	54.2	F**
		PM	*	73.4	F	*	>100	F**
5	Palm Ave./Institution Rd. & Cajon Blvd.	AM	0.847	20.7	C	0.849	20.8	C
		PM	1.140	56.6	F	1.150	57.8	F**

SOURCE: Traffic Impact Analysis Report for the Palm Avenue Warehouse/Distribution Center Project, 2007.

* Volume to capacity ratio not provided for one- or two-way, stop sign-controlled intersections.

** Indicates a significant project traffic impact, prior to mitigation.

**Table 4.11-7 Project Contributions to Total New Volumes
Study Period 2007–2030**

Number	Intersection	AM Peak Hour		PM Peak Hour		Critical Peak Period	Critical Percent Contribution
		Project Contribution Volumes	Total Net New Volumes	Project Contribution Volumes	Total Net New Volumes		
1	Palm Ave. & Kendall Dr./Little League Dr.	17	311	16	855	AM	5.5%
2	Palm Ave. & I-215 NB On/Off-Ramps	44	553	35	909	AM	8.0%
3	Palm Ave. & I-215 SB On/Off-Ramps/Kendall Dr.	93	1,310	71	1,436	AM	5.6%
4	Palm Ave. & Industrial Pkwy.	85	543	86	839	AM	15.7%
5	Palm Ave./Institution Rd. & Cajon Blvd.	13	432	15	1,132	AM	3.0%

SOURCE: Traffic Impact Analysis Report for the Palm Avenue Warehouse/Distribution Center Project, 2007.

* Volume to capacity ratio not provided for one- or two-way, stop sign-controlled intersections.

** Indicates a significant project traffic impact, prior to mitigation.

Mitigation measure MM4.11-1(b) is designed to mitigate transportation/traffic impacts for Opening Year and Future traffic conditions to a degree such as there are no remaining study area intersections significantly impacted by the proposed project.

MM4.11-1(b) Measures designed to mitigate operation related transportation/traffic impacts for Opening Year and Future traffic conditions:

- ***Palm Ave. & I-215 NB Ramps:*** *Install a traffic signal at this location. (For both Opening Year 2010 and Future 2030 Conditions)*
- ***Palm Ave. & I-215 SB Ramps/Kendall Ave.:*** *Install a traffic signal at this location. (For both Opening Year 2010 and Future 2030 Conditions)*
- ***Palm Ave. & Industrial Pkwy.:*** *Restripe the southbound approach of Palm Avenue to provide a left-turn lane and a shared right/through lane at Industrial Parkway, and a shared through/left lane and a right-turn lane on the westbound approach of Industrial Parkway at Palm Avenue. Install a traffic signal that includes a westbound right-turn phase on Industrial Parkway concurrent with the southbound left-turn phase on Palm Avenue at this location. (For Future 2030 Condition Only)*
- ***Palm Ave./Institution Rd. & Cajon Blvd.:*** *Install a traffic signal at this location. (For Future 2030 Condition Only)*

The anticipated effectiveness of mitigation measure MM4.11-1(b) at the study area intersections is listed in Table 4.11-8A (Intersection LOS Summary—Opening Day with Project Plus Mitigation Condition) and Table 4.11-8B (Intersection LOS Summary—Future with Project Plus Mitigation Condition) for Opening Day and Future traffic conditions, respectively. As shown in these two tables, implementation of mitigation measure MM4.11-1(b) will bring all significantly impacted intersections to an acceptable LOS (LOS D or better).

Table 4.11-8A Intersection LOS Summary—Opening Day with Project Plus Mitigation Condition

Number	Intersection	Peak Hour	Without Project			With Project			With Project + Mitigation		
			V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
2	Palm Ave. & I-215 NB Ramps	AM	*	75.9	F	*	>100	F**	0.525	5.5	A
		PM	*	37.9	E	*	44.1	E**	0.632	7.4	A
3	Palm Ave. & I-215 SB Ramps/Kendal Dr.	AM	1.085	45.7	E	1.111	48.4	E**	0.680	17.5	B
		PM	1.666	17.0	C	0.713	18.1	C	0.587	12.2	B

SOURCE: Traffic Impact Analysis Report for the Palm Avenue Warehouse/Distribution Center Project, 2007.

* Volume to capacity ratio did not provide for one- or two-way, stop sign-controlled intersections.

** Indicates a significant project traffic impact, prior to mitigation.

Table 4.11-8B Intersection LOS Summary—Future with Project Plus Mitigation Condition

Number	Intersection	Peak Hour	Without Project			With Project			With Project + Mitigation		
			V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
2	Palm Ave. & I-215 NB Ramps	AM	*	>100	F	*	>100	F**	0.698	8.1	A
		PM	*	>100	F	*	>100	F**	0.812	10.1	B
3	Palm Ave. & I-215 SB Ramps/Kendal Dr.	AM	1.772	>100	F	1.822	>100	F**	0.865	30.9	C
		PM	1.709	>100	F	1.733	>100	F**	0.940	30.3	C
4	Pal Ave. & Industrial Pkwy.	AM	*	46.5	E	*	54.2	F**	0.428	8.9	A
		PM	*	73.4	F	*	>100	F**	0.693	12.1	B
5	Pal Ave./Institution Rd. & Cajon Blvd.	AM	0.847	20.7	C	0.849	20.8	C	0.443	5.9	A
		PM	1.140	56.6	F	1.150	57.8	F**	0.529	6.3	A

SOURCE: Traffic Impact Analysis Report for the Palm Avenue Warehouse/Distribution Center Project, 2007.

* Volume to capacity ratio did not provide for one- or two-way, stop sign-controlled intersections.

** Indicates a significant project traffic impact, prior to mitigation.

The cost estimate of implementation of mitigation measure MM4.11-1(b) was calculated according to Appendix G of the County CMP. Using the proposed project’s contributions from Table 4.11-7, the proposed project’s share cost estimate was determined and is shown in Table 4.11-9 (Traffic Analysis Recommended Transportation Improvement Costs).

The LOS of the study area intersections would be improved to an acceptable LOS during Opening Day and Future traffic condition with implementation of the proposed project and mitigation measure MM4.11-1(b). The proposed project would not cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system, and would not exceed a LOS standard established by the County for designated roads or highways. This impact would be *less than significant*.

No.	Intersection	Improvement Measure		2003 Base Cost	Added Items (50%)	Inflation	2007 Cost	Project Percentage	Project Portion
		Number	Category						
2	Palm Ave. & I-215 NB Ramps	1	New Traffic Signal	\$90,000	\$45,000	\$16,200	\$151,200	8.0%	\$12,100
3	Palm Ave. & I-215 SB Ramps/Kendall Dr.	1	New Traffic Signal	\$90,000	\$45,000	\$16,200	\$151,200	5.6%	\$8,470
4	Palm Ave. & Industrial Pkwy.	1	New Traffic Signal	\$90,000	\$45,000	\$16,200	\$151,200	15.7%	\$23,740
		1	Added Turn Lanes	\$50,000	\$25,000	\$9,000	\$84,200	15.7%	\$13,190
5	Palm Ave./Institution Rd. & Cajon Blvd.	1	New Traffic Signal	\$90,000	\$45,000	\$16,200	\$151,200	3.0%	\$4,540
Intersection Total							\$688,800	9.0%	\$62,040

SOURCE: Traffic Impact Analysis Report for the Palm Avenue Warehouse/Distribution Center Project, 2007.

Threshold	Would the project substantially increase hazards due to a design feature (E.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
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Impact 4.11-2 The proposed project would not increase hazards due to a design feature or incompatible uses. Impacts would be *less than significant*.

The proposed project is designed to utilize the existing network of primary and secondary arterial roadways, and freeway, adjacent to the project site. All proposed changes to road design within the study area as a part of the proposed project are improvements described within mitigation measure MM4.11-1(b). Most of these improvements involve the conversion of stop sign-controlled intersections to traffic signal controlled, and would not represent an increase in hazards associated with a design feature. In fact, these improvements are designed to reduce any potential hazards due to congestion.

The project would provide one ingress and egress driveway at the northern portion of the site, as shown on Figure 3-5 (Project Site Plan). This driveway would provide appropriate line of sight for trucks and approaching motorists in both directions on Industrial Parkway. This impact would be *less than significant*.

Threshold	Would the project result in inadequate emergency access?
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Impact 4.11-3 The proposed project would not result in inadequate emergency access. Implementation of mitigation measures MM4.6-3 and MM4.6-4, identified within Impact 4.6-4 of this EIR, would ensure adequate emergency access. This impact would be *less than significant*.

The proposed project would be required to meet all applicable local and state regulatory standards for adequate emergency access. In addition, the second driveway located near Palm Avenue could be used as

a secondary emergency access if needed. Emergency access to the project site is further discussed within Impact 4.6-4, in Section 4.6 (Hazards and Hazardous Materials) of this EIR. Adherence to applicable local and state regulatory standards and mitigation measures MM4.6-3 and MM4.6-4 (identified within Impact 4.6-4) would ensure adequate emergency access. This impact would be *less than significant*.

Threshold	Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?
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Impact 4.11-4 **The proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Impacts would be *less than significant*.**

The proposed project is served by alternative transportation through Omnitrans—Route 7, operating along Kendall Drive and Palm Avenue, and Metrolink—San Bernardino Line, stopping in close proximity to the San Bernardino Station (with service continuing to the project site provided via Route 7 of Omnitrans).

Goal 6.6 of the City’s General Plan states:

Promote a network of multi-modal transportation facilities that are safe, efficient, and connected to various points of the City and the region.

Goal 6.6 is supported by ten General Plan policies. While employees of the proposed project may utilize the alternative transportation options serving the project site, none of the City’s policies in support of Goal 6.6 of the General Plan are applicable to the proposed project. As there are no other adopted policies, plans, or programs supporting transportation that pertain to the proposed project, the proposed project would not conflict with adopted policies, plans, or programs supporting alternative transportation. This impact would be *less than significant*.

4.11.5 Cumulative Impacts

This cumulative impact analysis considers development of the proposed project, in conjunction with the other development in the City, as listed in Table 3-2 (List of Related Development Projects), in Chapter 3 (Project Description) of this EIR. The geographic context for the cumulative analysis is based on the cumulative projects list, as allowed by Section 15130(b)(1)(A) of the CEQA Guidelines.

It should also be noted that simultaneous construction of both the project and the Palm Avenue Rail Crossing Grade Separation could occur. However, as noted, above, reductions in roadway traffic volumes have occurred since the 2008 EIR analysis. These reductions are anticipated to offset any cumulative traffic volume growth in the project study area the roadway system from the Palm Avenue Grade Separation Project construction. Therefore, the analysis in the 2008 EIR remains valid.

If the SANBAG grade separation project occurs concurrently with the proposed project, a substantial periodic increase in truck traffic during construction activities could result that could impact intersections

in the immediate area as well as freeway on- and off-ramps. This is a potentially significant cumulative impact. However, mitigation measure MM4.11-1(c) would reduce this impact to less than significant, and, with implementation of this mitigation, the project would not make a cumulatively considerable contribution to the cumulative impact.

- MM4.11-1(c) If grading or other construction activities for the proposed project involving 50 or more daily truck trips to or from the site (other than to or from the SANBAG grade separation project site) occur simultaneously with the proposed SANBAG grade separation project on Palm Avenue, the project developer shall coordinate preparation of a construction traffic mitigation plan with SANBAG, subject to the approval of the City traffic engineer and City police and fire departments, to avoid substantial traffic impacts to area intersections and freeway on- and off-ramps. This construction traffic management plan may include, but is not limited to, the following measures:*
- *Hauling of materials for the two sites shall be coordinated including, when feasible, using soil exports from the project site as imports to the grade separation project site*
 - *Materials delivery hours shall be restricted to occur outside of peak traffic hours*
 - *Truck traffic shall be directed to an alternate route as approved by the City*
 - *Flagpersons or other traffic control measures shall be implemented at access points to the sites*
 - *Off-site construction worker parking provided nearer to major transportation corridors than the sites, with shuttles provided to eliminate construction worker trips near the construction site during peak hours*

The operational traffic analysis provided under Impact 4.11-1 considered trips generated by the proposed project, as well as cumulative projects, in its development of future baseline conditions. With the findings of Impact 4.11-1, because all significantly impacted intersections would be mitigated, cumulative impacts would be ***less than significant***, and the proposed project's contribution would not be cumulatively considerable.

Future development of cumulative projects would be required to adhere to standard engineering practices and requirements, and would be subject to planning and design review by the presiding jurisdiction to avoid traffic hazards created by design features and land use incompatibilities. In addition, future development project would be subject to fair share practices under the guideline of the San Bernardino County Congestion Management Plan (CMP). As discussed within Impact 4.11-2, the proposed project would not present an increase in traffic hazards associated with a design feature, but rather instead is designed to reduce any potential traffic hazards. For this reason, cumulative impacts would be ***less than significant***, and the proposed project's contribution would not be cumulatively considerable.

As discussed within Impact 4.11-3, the proposed project would be required to meet the emergency access standards developed by the state and local municipality. As all other cumulative projects would be required to meet these standards, cumulative impacts associated with emergency access would be ***less than significant***, and the proposed project's contribution would not be cumulatively considerable.

As discussed under Impact 4.11-4, while employees of the proposed project may utilize the alternative transportation options serving the project site, none of the City's adopted policies, plans, or programs

supporting public transportation pertain to the proposed project. The proposed project would not conflict with adopted policies, plans, or programs supporting alternative transportation. For this reason, cumulative impacts would be *less than significant*, and the proposed project's contribution would not be cumulatively considerable.

For any thresholds where the project-specific analysis concluded that *no impact* would result, the proposed project would not contribute to any cumulative impacts.

4.11.6 References

- CH2M HILL. 2010. *Revised Technical Memorandum, Palm Avenue Grade Separation Project Traffic Analysis*, October 21.
- Crain & Associates. 2007. *Traffic Impact Analysis Report for the Palm Avenue Warehouse/Distribution Center Project*, December.
- . 2011. *Traffic Conditions Update*, February 3.
- . 2011. *Sight Distance Analysis for the Proposed Palm Avenue Warehouse Project in the City of San Bernardino*, February 3.
- San Bernardino, City of. 2005. *City of San Bernardino General Plan—Circulation Element*, November 1.