TRAFFIC IMPACT ANALYSIS REPORT

Proposed 230,000 Square Foot Industrial Warehouse Project
Located at 16325 Avalon Boulevard
in the City of Carson, California

Prepared for:

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EXECUTIVE SUMMARY

The proposed project involves the development of a new industrial/warehousing facility located at 16325 Avalon Boulevard, on the west side of the street between Alondra Boulevard and Gardena Boulevard, in the northern portion of the City of Carson, California. The project site is bounded by Avalon Boulevard on the east, and by existing development on the north, west, and south, although a narrow "flag lot" extends south of the main portion of the project site near its western edge to provide vehicular access to Gardena Boulevard. The main portion of the approximately 11.67-acre site is currently undeveloped, although the flag lot portion of the site is paved and contains an existing approximately 8,000 square foot vacant industrial building, which will be demolished in order to develop the proposed project.

The proposed project will construct a new two-tenant industrial/warehouse building containing a total of approximately 206,400 square feet of floor space, plus an additional 23,600 square feet of mezzanine/office area, for a total building area of approximately 230,000 square feet. A total of approximately 26 truck docks will be provided along the west side of the building, along with a total of approximately 230 passenger vehicle parking spaces; on-site truck service/maintenance and parking areas are also located along the west side of the site. Vehicular access to the site will be provided via three driveways along Avalon Boulevard and an additional driveway on Gardena Boulevard, providing access to the main site via the flag lot. An existing raised median island on Avalon Boulevard adjacent to the project's frontage will limit both the northern and southern driveways along this street to right-turn entry/right-turn exit operations, although both the "middle" Avalon Boulevard driveway and the Gardena Boulevard driveway are expected to permit both left-turn and right-turn entry and exit. However, the "middle" Avalon Boulevard driveway does not provide adequate driveway width or drive aisle maneuvering space to accommodate semi-trailer truck traffic, and truck usage of this driveway will be prohibited. Additionally, to maximize the efficiency of the on-site vehicular operations, truck circulation within the site will be restricted to westbound-only (entering trucks) for the north drive aisle, and eastbound-only (exiting trucks) for the southern drive aisle, although truck movements along the west side of the project site (to and from the truck docks) and through the flag lot access road will continue to provide two-way circulation.

The project applicant retained Hirsch/Green Transportation Consulting, Inc. to prepare a study detailing the potential traffic and parking impact analysis of the proposed project, as required by the City of Carson. The scope of the study was discussed with the City's traffic engineer to

ensure that appropriate analysis methodologies and assumptions were utilized. Based on the recommendations of the City traffic engineer, this study evaluates the existing (year 2011) and forecast future (year 2013) conditions at five signalized intersections adjacent to or in close proximity to the project site during typical weekday AM and PM peak commute traffic periods.

Once it is completed and fully occupied, the project is expected to generate a total of approximately 1,009 new daily trips, including 130 trips during the weekday AM peak hour, and 102 trips during the weekday PM peak hour. However, approximately 20 percent of the project's total trips are expected to be semi-trailer or larger single-unit truck trips, which exhibit more "impactful" operating characteristics than typical passenger vehicles. Therefore, in order to account for the effects of these larger vehicles on the area transportation network, the project's truck trips were adjusted using a "passenger car equivalency" ("PCE") factor of 2.0, as recommended by the City traffic engineer, essentially doubling the traffic-impact characteristics of these vehicles. Based on these adjustments, the fully completed project is expected to result in a total of approximately 1,211 daily PCE trips, including approximately 156 PCE trips during the AM peak hour and 122 PCE trips during the PM peak hour. This higher level of trip generation was used to evaluate the potential traffic impacts of the project.

The results of the analyses contained in this report indicate that the proposed project will not result in significant impacts to any of the five study intersection examined in this study during either of the weekday AM or PM peak hours under either "existing" (year 2011) or forecast "future" (year 2013) conditions. Additionally, the proposed project will not generate sufficient new traffic to significantly impact any of the CMP arterial monitoring intersections or freeway segments in the project vicinity. Further, potential new public transit ridership due to the project is expected to be nominal, and no significant transit-related impacts are anticipated.

The project will provide a total of approximately 230 on-site passenger vehicle parking spaces, which are approximately 13 spaces more than are required, as well as the required on-site truck staging/parking areas, and as such, no on-site parking shortages or "spill over" into adjacent commercial streets or parking areas is anticipated. The project's four driveways will provide more than adequate entry and exit capacity for the site, and the proposed internal vehicular circulation and parking layout are typical of such developments, and will operate acceptably.

Therefore, based on the results of the traffic and parking impact analyses summarized in this report, the proposed 230,000 square foot industrial/warehouse project will not create any significant traffic or parking-related impacts, and no mitigation measures are warranted.

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INTRODUCTION

This report summarizes the results of a traffic and parking impact analysis for a proposed new 230,000 square foot industrial/warehousing facility at 16325 Avalon Boulevard, on the west side of the street between Alondra Boulevard and Gardena Boulevard, in the northern portion of the City of Carson, California. The project site is bounded by Avalon Boulevard on the east, and by existing development on the north, west, and south, although a narrow "flag lot" extends south of the main portion of the project site near its western edge to provide vehicular access to Gardena Boulevard; the project site is shown in relation to the surrounding vicinity in Figure 1. The main portion of the approximately 11.67-acre site is currently undeveloped, although the flag lot portion of the site is paved and contains an existing approximately 8,000 square foot vacant industrial building, which will be demolished in order to develop the proposed project.

The proposed project will construct a new two-tenant industrial/warehouse building containing a total of approximately 206,400 square feet of floor space, plus an additional 23,600 square feet of mezzanine/office area, for a total building area of approximately 230,000 square feet. A total of approximately 26 truck docks will be provided along the west side of the building, along with a total of approximately 230 passenger vehicle parking spaces, including 216 spaces on the main site, and an additional 14 spaces on the flag lot. Two truck service/maintenance and parking areas are also provided at the southwestern corner of the site. Vehicular access to the site will be provided via three driveways along Avalon Boulevard and an additional driveway on Gardena Boulevard, providing access to the main site via the flag lot. Due to an existing raised median island on Avalon Boulevard adjacent to the project's frontage, the northernmost and southernmost driveways along this street will exhibit right-turn entry/right-turn exit restrictions. However, the "middle" driveway on Avalon Boulevard is expected to permit both left-turn and right-turn entry and exit moves due to an existing break in the median island opposite its location, although this driveway does not provide adequate driveway width or drive aisle maneuvering space to accommodate semi-trailer truck traffic, and truck usage of this driveway will be prohibited. The project's Gardena Boulevard driveway does not exhibit any physical or operational restrictions, and will provide "full access" to and from the site. Finally, to maximize the efficiency of the on-site traffic operations, truck circulation within the site will be restricted to westbound-only (entering trucks) along the north drive aisle, and eastbound-only (exiting trucks) along the southern drive aisle, although truck movements on the west side of the project site to and from the truck docks, and through the flag lot access road, will exhibit two-way circulation.

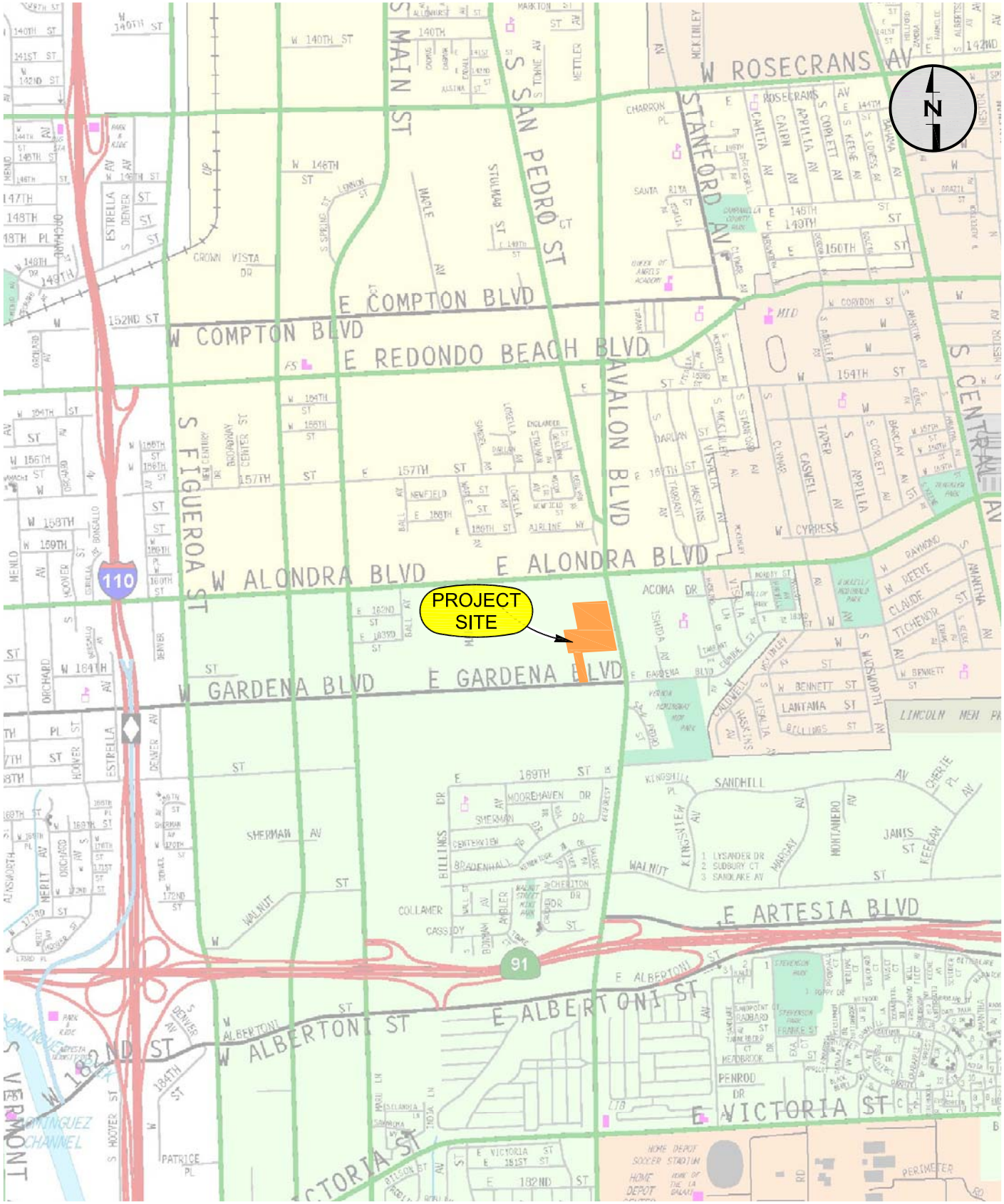

FIGURE 1

PROJECT SITE VICINITY

The project applicant retained Hirsch/Green Transportation Consulting, Inc. ("Hirsch/Green") to study the potential impacts of the proposed development on the operations of the streets and intersections surrounding the project site. The scope of the study was reviewed by the City of Carson's traffic engineer to ensure that appropriate analysis methodologies and assumptions were utilized. Based on those scoping discussions and City recommendations, this study evaluates the existing (year 2011) and forecast future (year 2013) conditions at five signalized intersections adjacent to or in close proximity to the project site during typical weekday AM peak hour (corresponding to the highest one-hour traffic volume period between 7:00 and 10:00 AM) and PM peak hour (between 3:00 and 6:00 PM) commute traffic periods.

The five study intersections selected for this analysis, listed below and shown in relation to the project site in Figure 2, represent those intersections providing either direct access to the project site, or located along travel routes used to access the nearby Harbor (US-110) Freeway or Artesia/Gardena (SR-91) Freeway, and are the intersections most likely to be affected by new traffic generated by the proposed project.

1. Avalon Boulevard and Alondra Boulevard
2. Main Street and Gardena Boulevard
3. Avalon Boulevard and Gardena Boulevard
4. Avalon Boulevard and SR-91 Freeway Westbound On/Off-Ramps/Artesia Boulevard
5. Avalon Boulevard and Albertoni Street/SR-91 Freeway Eastbound On/Off-Ramps

In addition to the analysis of the potential for project-related traffic impacts to nearby streets and intersections, this study also contains a review of the project's proposed vehicular access and internal circulation plan, including an examination of the proposed truck dock operations, as well as a comparison of the project's parking requirements against the proposed parking supply. Finally, this study includes an evaluation of potential project impacts to regionally-significant intersections and freeway segments in the project vicinity as identified in the (2010) Los Angeles County Congestion Management Program ("CMP"), as required by the City of Carson.

AVALON-ALONDRA (CARSON) \ STUDY-INTS

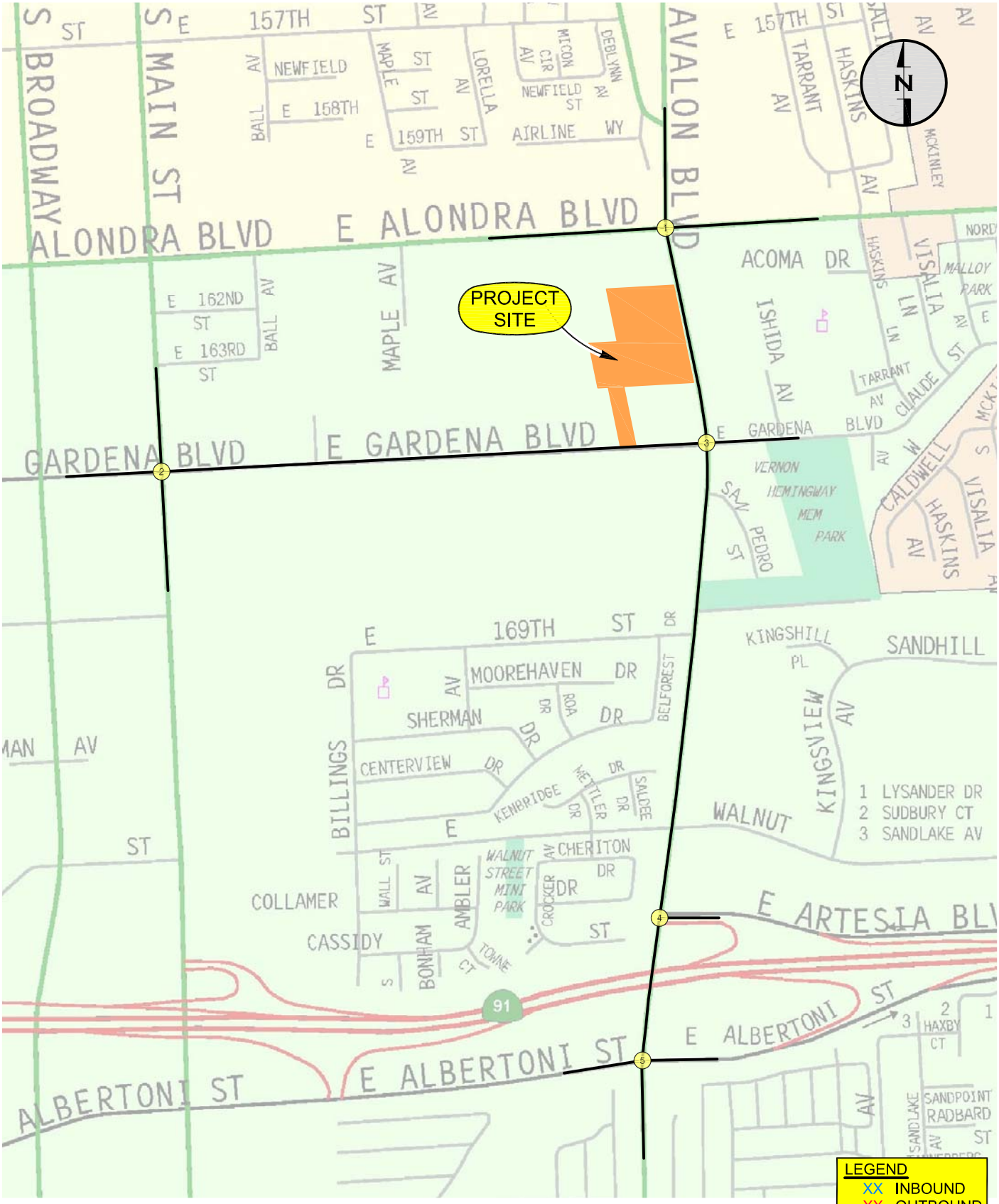

FIGURE 2

10/10/2011

HIRSCH GREEN
Hirsch/Green Transportation Consulting, Inc.

PROJECT STUDY INTERSECTION LOCATIONS

PROJECT DESCRIPTION

The project under consideration is the proposed development of a new industrial/warehousing facility at 16325 Avalon Boulevard, on an approximately 11.67-acre site along the west side of the street between Alondra Boulevard and Gardena Boulevard, in the northern portion of the City of Carson, California. The project site is generally bounded by Avalon Boulevard on the east, and by existing development on the north, west, and south, although a narrow "flag lot" extends south of the main portion of the project site near its western edge to provide vehicular access to Gardena Boulevard. The main portion of the site is currently undeveloped, although the flag lot portion of the site is paved and contains an existing approximately 8,000 square foot vacant industrial building, which will be demolished in order to develop the proposed project. The project site is shown in relation to the surrounding vicinity in Figure 1.

The proposed project will construct a new two-tenant industrial/warehouse building containing a total of approximately 206,400 square feet of floor space, plus an additional 23,600 square feet of mezzanine/office area, for a total building area of approximately 230,000 square feet. The project will also provide a total of approximately 230 on-site automobile parking spaces within various surface parking areas generally surrounding the new building, including approximately 216 spaces located on the main site, and an additional 14 spaces located on the flag lot. A total of approximately 26 truck docks will be located along the west side of the building, and two truck service/maintenance and parking areas are provided at the southwestern corner of the site.

Vehicular access to the site will be provided via three driveways along Avalon Boulevard and an additional driveway on Gardena Boulevard, which will provide access to the main site via the flag lot. The northernmost and southernmost project driveways along Avalon Boulevard will exhibit right-turn entry/right-turn exit restrictions, due to an existing raised median island adjacent to the project's frontage, although the "middle" driveway on Avalon Boulevard is expected to permit both left-turn and right-turn entry and exit moves due to an existing break in the median island opposite its location. However, this driveway does not provide adequate driveway width or drive aisle maneuvering space to accommodate semi-trailer truck traffic, and truck usage of this driveway will be prohibited. The project's Gardena Boulevard driveway will provide "full access" operations. On-site truck circulation will be restricted to westbound-only along the north drive aisle, and eastbound-only along the southern drive aisle, although truck movements along the west side of the project site (to and from the truck docks) and through the flag lot access road will exhibit two-way circulation. The project site layout is shown in Figure 3.

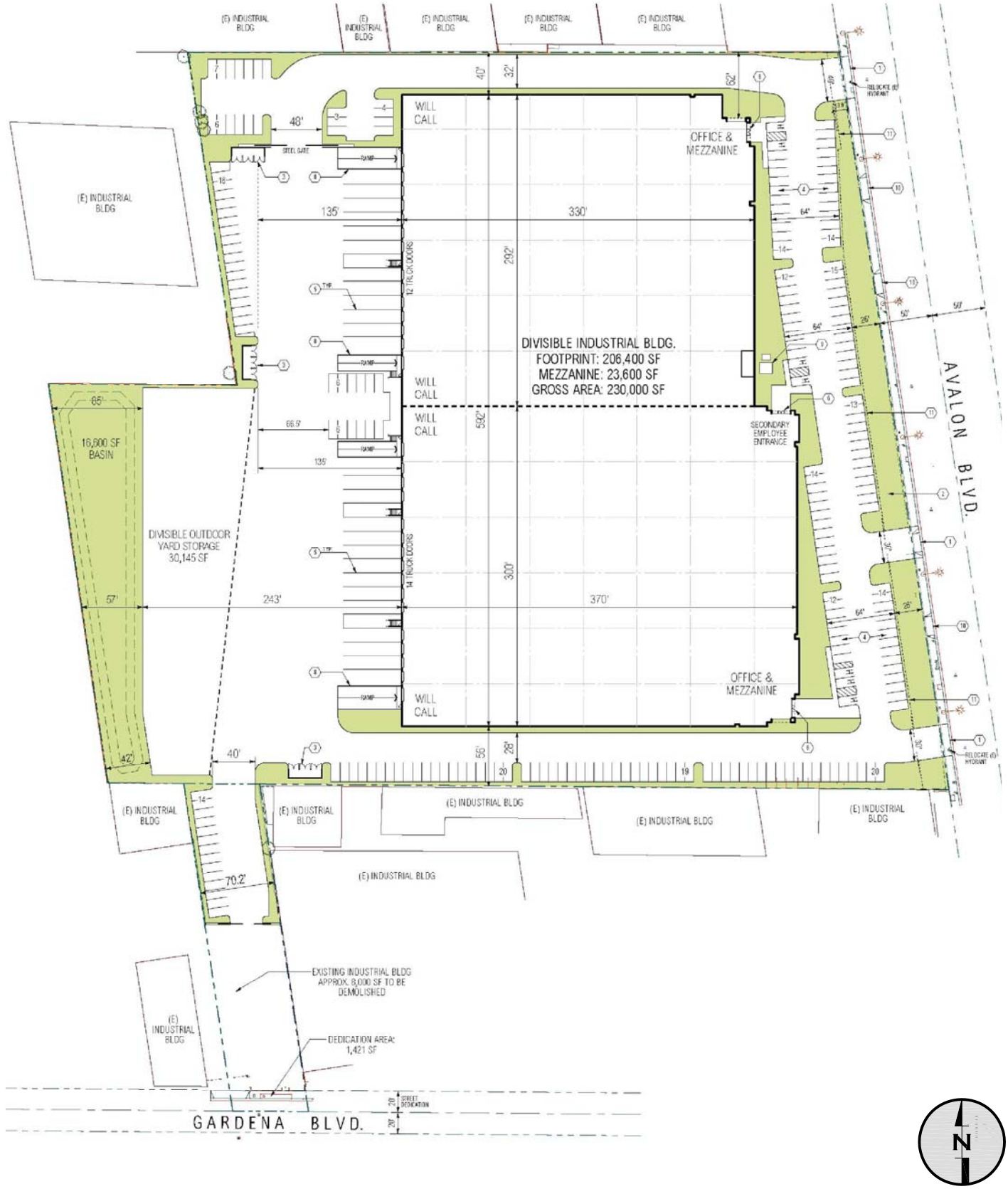

FIGURE 3

PROJECT SITE LAYOUT

Project Traffic Generation

The traffic-generating characteristics of a variety of land uses, including industrial "warehouse" developments such as the one proposed, have been extensively surveyed and documented in studies conducted under the auspices of the Institute of Transportation Engineers ("ITE"), with the most recent information provided in the 8th Edition of ITE's *Trip Generation* manual.[1] The trip generation data contained in the ITE manual are nationally recognized, and are used as the basis for most traffic studies conducted throughout the Southern California region, including the City of Carson. The City's traffic engineer concurred with the use of the ITE data in the preparation of this study.

While specific tenants for the proposed project have not been identified at this time, based on the anticipated use and operations of the proposed project, and discussions with the City of Carson traffic engineer, the ITE "warehouse" land use was determined to be most appropriate for estimation of the project's trip generation characteristics. This assumption is expected to produce a conservatively high estimate of the project's potential trip generation, since the "warehouse" trip generation rates provided in the ITE *Trip Generation* publication are based on the total square footage of the development, rather than on a more appropriate indicator of site activity, such as the number of truck loading docks.

The ITE *Trip Generation* manual identifies both "average rates" and "fitted equations" for use in estimating the trip generation potential for "warehouse" uses. However, a review of the ITE data found that the average size of the warehouse facilities surveyed to develop the trip generation rates and equations contained in the ITE publication is approximately twice the size of the proposed project. Since most land uses, including warehouse uses, tend to generate fewer trips per unit of area as they increase in size, the larger sizes of the surveyed warehouses could skew the average trip generation rate data toward these lower "per unit" trip generating characteristics, and as such, use of the "average rates" could potentially underestimate the amount of traffic generated by the project. Therefore, for purposes of this study, in order to provide a conservative assessment of the potential trip generation and associated traffic impacts of the proposed project, the ITE "fitted equations" were used, as shown in Table 1.

Due to the type of development proposed (a warehousing facility containing truck docks), it is anticipated that a number of single-unit and semi-trailer trucks will enter and exit the site on a daily basis. While the ITE trip generation equations shown in Table 1 can be used to estimate

[1] *Trip Generation*, 8th Edition, Institute of Transportation Engineers, Washington, D.C., 2008.

Table 1
Project Trip Generation Rates*

Warehousing - per 1,000 gross square feet of floor area (ITE Land Use 150)

Daily Trips:	Ln (T) = 0.86 Ln (A) + 2.24
AM Peak Hour:	Ln (T) = 0.55 Ln (A) + 1.88; I/B = 79%, O/B = 21%
PM Peak Hour:	Ln (T) = 0.64 Ln (A) + 1.14; I/B = 25%, O/B = 75%

Where:
T = Trip Ends
A = Building Area in 1,000 sq. ft.
I/B = Inbound Trip Percentage
O/B = Outbound Trip Percentage

* Note:
All trip generation rates from 8th Ed. ITE *Trip Generation* .

the total number of daily and peak hour vehicle trips resulting from development of the project, these rates do not account for the effects on traffic flows of larger single unit and semi-trucks, which occupy more space on the roadway than typical passenger vehicles, and can produce more disruptive traffic effects than typical automobiles or light trucks. Therefore, in order to accurately assess the project's potential for traffic impacts, it is necessary to estimate the amount of heavy truck traffic occurring at the site.

The ITE data indicates that approximately 20 percent of the total vehicular traffic generated by "warehouse" uses (on both a daily and peak hour basis) is due to truck trips. Therefore, for purposes of the analysis of the potential effects of the proposed project on traffic conditions at the five study intersections, it was assumed that 80 percent of the total daily and peak hour traffic generated by the proposed project would be due to typical passenger (automobiles and light-duty pickups, etc.) vehicles, which by definition, exhibit a passenger car equivalency factor ("PCE") of 1.0. However, as described above, the remaining 20 percent of the project's trips would be single-unit trucks or larger semi-trailer trucks, which are generally assumed to exhibit a PCE factor of 2.0, meaning that they produce traffic-influencing effects due to length, width, and other operational characteristics (acceleration/deceleration, turning radii, etc.) equivalent to approximately twice that of typical automobiles or other passenger vehicles.

Based on these assumptions, the number of "total" (actual vehicle) trips generated by the proposed project was calculated; these values were then broken down into passenger vehicle trips and truck trips (adjusted using the "passenger car equivalency" factor described above). The total "passenger car equivalent" trips were used to evaluate the project's potential traffic impacts at the study intersections. The results are summarized in Table 2.

Table 2
Project Trip Generation

Size/Use	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
230,000 sq. ft. Warehouse (total trips - unadjusted)	1,009	103	27	130	25	77	102
PCE Trip Calculations							
Automobile trips (80% of total; pce = 1.0)	807	82	22	104	20	62	82
Truck trips (20% of total; pce = 2.0)	404	41	11	52	10	30	40
Total Project "PCE" Trips	**1,211**	**123**	**33**	**156**	**30**	**92**	**122**

As shown in Table 2, at full occupancy, the proposed project is expected to result in a total of approximately 1,009 new daily vehicle trips, including about 130 trips during the AM peak hour and 102 trips during the PM peak hour. These values reflect the actual number of vehicles anticipated to enter and exit the project site, including both passenger vehicles and trucks. However, in order to account for the more “impactful” effects of the truck traffic associated with the proposed project on the area streets and intersections, the number of truck-related trips was adjusted using the 2.0 PCE factor described earlier, essentially doubling the number of truck trips as a means of estimating the actual operational impacts of these large vehicles on the area roadway network. Therefore, for purposes of this analysis, and as also shown in Table 2, the project is anticipated to generate a total of approximately 1,211 daily passenger car equivalent trips, including a total of approximately 156 PCE trips during the AM peak hour (123 inbound and 33 outbound) and approximately 122 PCE trips during the PM peak hour (30 inbound and 62 outbound), or approximately 20 percent more traffic than without the PCE adjustments. This higher number of trips was used as the basis for evaluating the project’s potential impacts on the surrounding roadway network, as discussed in detail later in this report.

Project Geographic Trip Distribution

Next, the general geographic distribution of project trips through the local study area as well as the surrounding region was identified for both the passenger vehicle trips and, separately, for the truck-related trips. These area-wide distributions were based primarily on the relative distribution of the population from which employees of the proposed project would be drawn, and from the anticipated origins and destinations of the truck-related trips, although existing traffic patterns in the project area were also reviewed. The resulting general geographic distribution of project-related trips, by vehicle type, is summarized in Table 3.

Table 3
Geographic Project Trip Distribution Percentages

Direction	Passenger Vehicles			Trucks		
	Street	Freeway	Total	Street	Freeway	Total
North	15%	10%	25%	10%	25%	35%
South	15%	5%	20%	5%	25%	30%
East	25%	10%	35%	5%	20%	25%
West	10%	10%	20%	5%	5%	10%
Totals	65%	35%	100%	25%	75%	100%

Project Traffic Assignment

The assignment of the project-related passenger vehicle and truck trips shown in Table 3 to the surrounding street and highway system was accomplished in several steps. First, the general geographic directional distribution percentages for each of the project's vehicular traffic components (passenger vehicles, and trucks, as shown in Table 3) were individually assigned to specific streets and highways serving the project area. This step considered many factors influencing the project traffic's access routes to and from the site, including one-way or limited access streets; "connectivity" of the local streets to regional transportation facilities (freeways), including freeway ramp locations and operations; and the overall "completeness" of the street system in the study area (accounting for any discontinuities in travel routes). The resulting general project traffic assignment percentages for the passenger vehicle and truck trips to the key streets serving the project vicinity are shown in Figure 4(a) and 4(b), respectively.

The next step in the project traffic assignment process involved the refinement of the general travel patterns described in Table 3 and shown in Figures 4(a) and 4(b), to identify the intersection-level turning movements of each of the project's vehicular components along the key travel routes to and from the project site. The assumptions utilized in this step primarily considered the locations and anticipated/assumed operations of the proposed project's driveways, although other factors which could influence the discrete vehicular travel paths, such as turning movement or other access restrictions at any of the study intersections or at the project site, were also reviewed (for example, no truck traffic was assumed to use the "middle" Avalon Boulevard project driveway, due to lack of appropriate vehicular turning radii to accommodate large vehicles). The resulting vehicle turning-movement assignment percentages for the project's trip components at each of the five study intersections and project driveways are shown in Figure 5(a) for the passenger vehicle trips and in Figure 5(b) for the truck trips.

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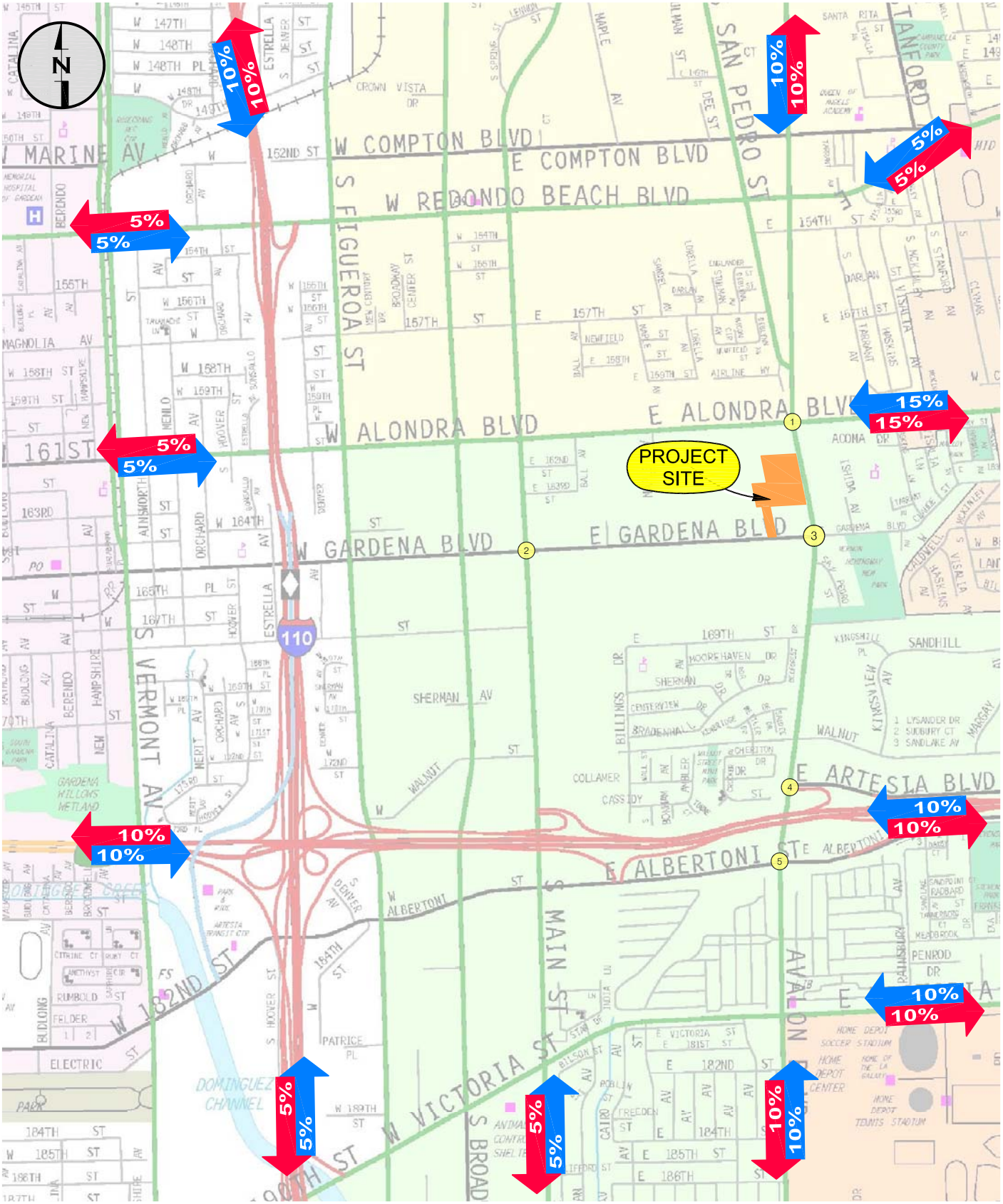

FIGURE 4(a)

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GEOGRAPHIC AUTO DISTRIBUTION PERCENTAGES

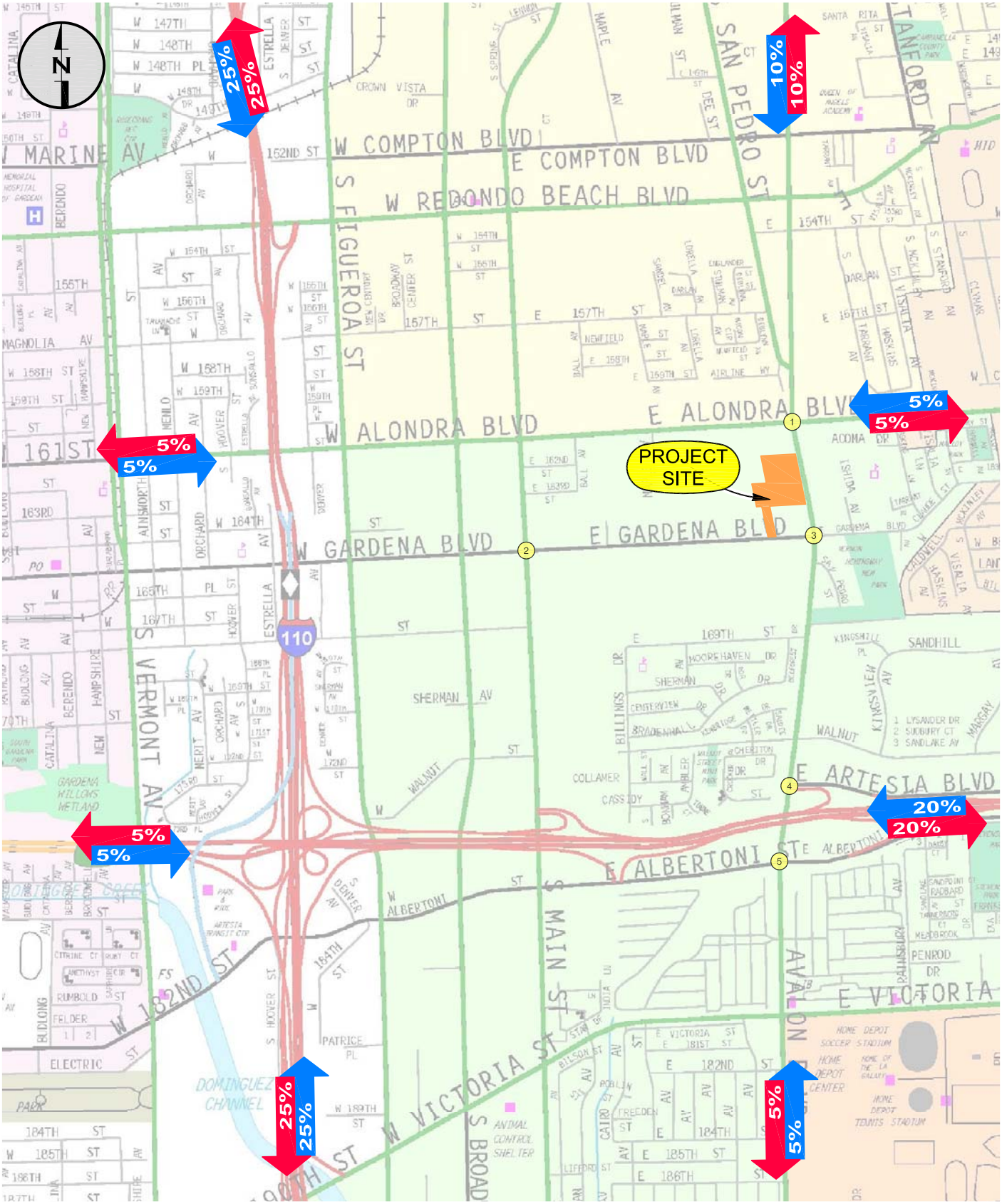

FIGURE 4(b)

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GEOGRAPHIC TRUCK DISTRIBUTION PERCENTAGES

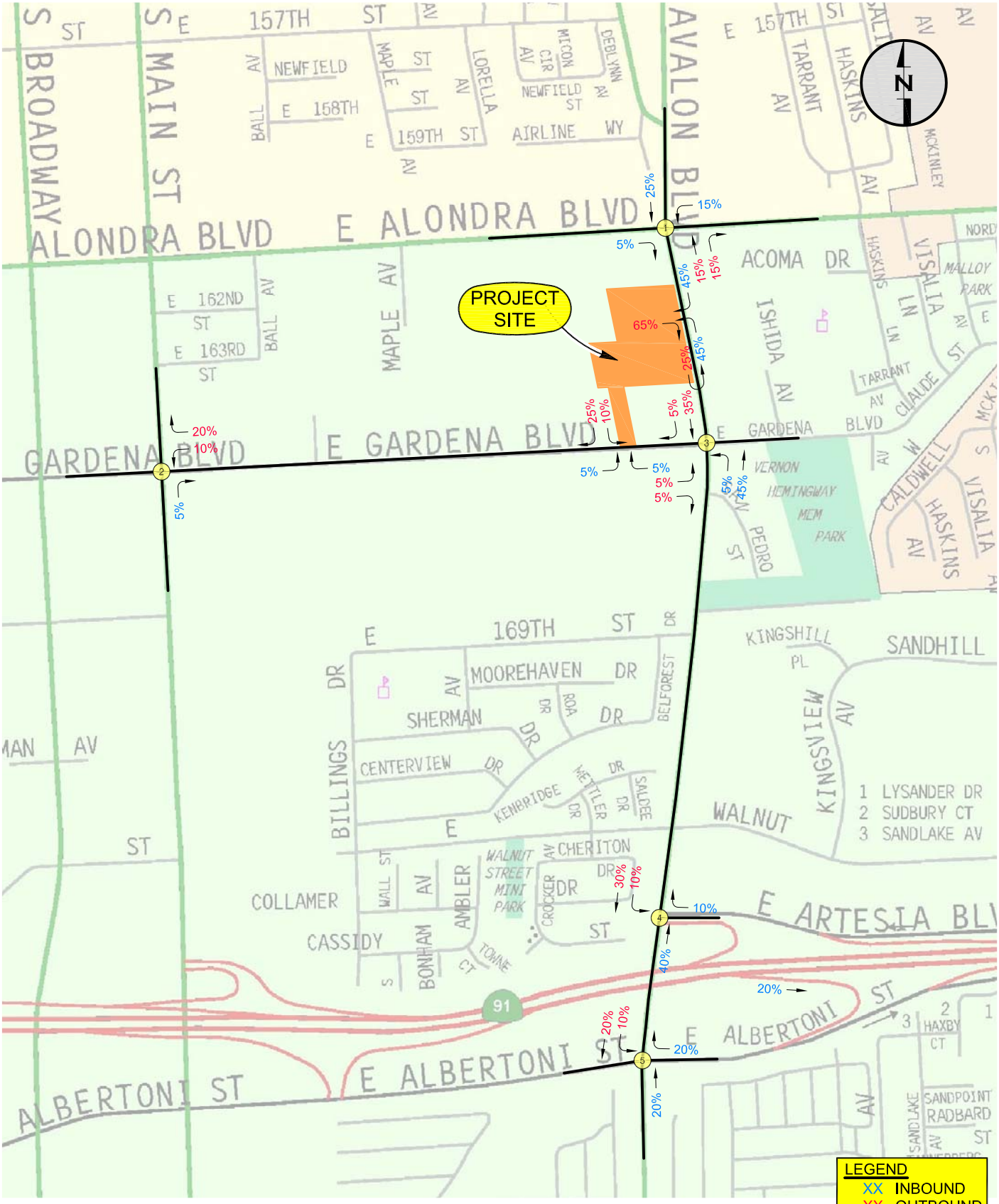

FIGURE 5(a)

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PROJECT AUTO TRIP ASSIGNMENT PERCENTAGES

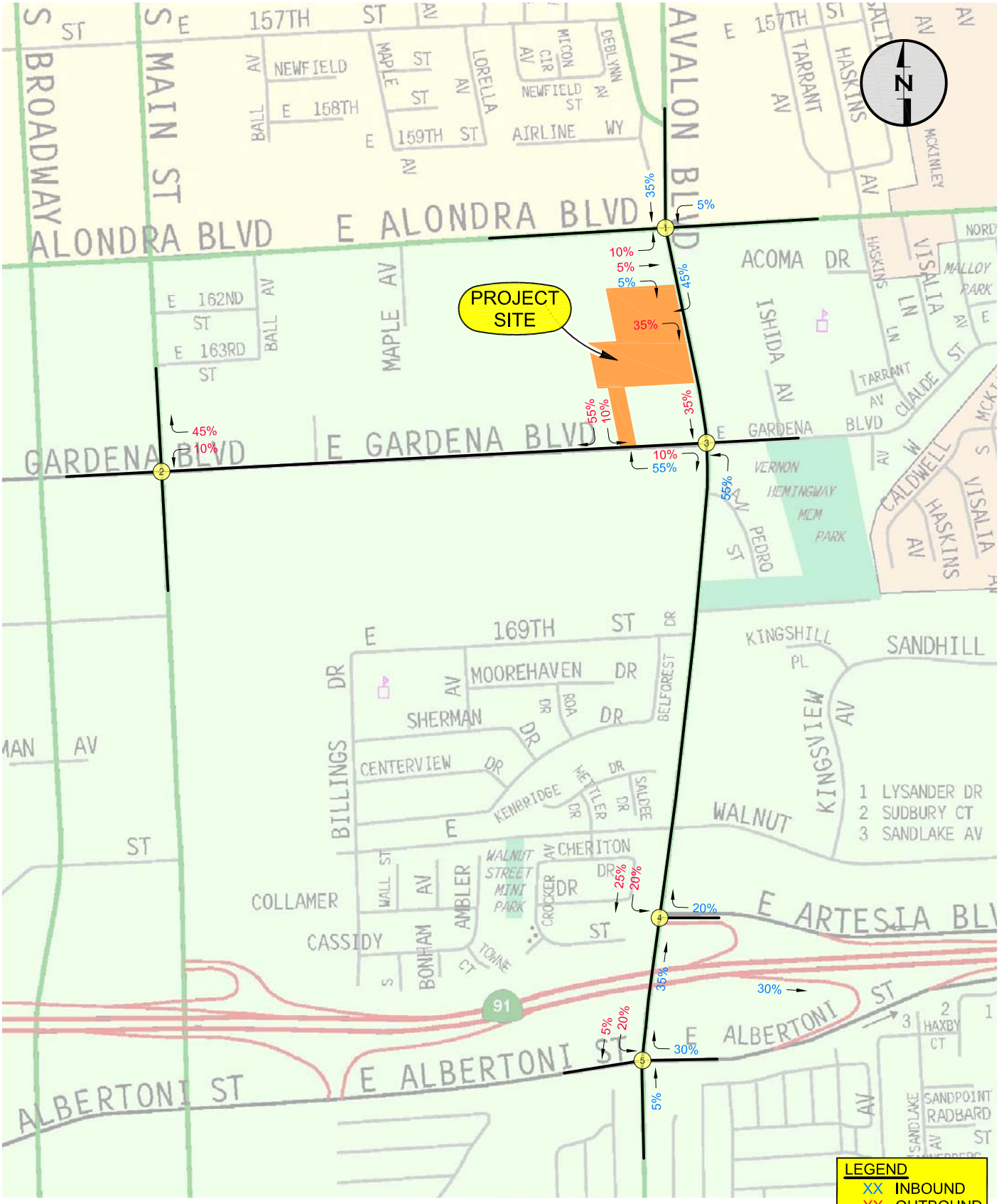

FIGURE 5(b)

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PROJECT TRUCK TRIP ASSIGNMENT PERCENTAGES

The final step in the trip assignment process was to calculate the number of net new project trips traveling through each of the study intersections, by multiplying the "inbound" or "outbound" directional project trips for the individual passenger vehicle and truck components shown previously in Table 2 by its corresponding directional turning movement percentages at each intersection, shown in Figures 4(a) and 4(b). The resulting project component trips at each of the study intersections are shown in Figure 6(a) for the passenger vehicle trips and Figure 6(b) for the PCE-adjusted truck trips during the AM peak hour, and in Figure 7(a) for the passenger vehicle trips and Figure 7(b) for the PCE-adjusted truck trips during the PM peak hour.

Finally, the individual project component trips were added together, to produce the total net new PCE-adjusted project trips at each of the study intersections, which are shown in Figure 8(a) for the AM peak hour, and in Figure 8(b) for the PM peak hour. The values shown in these figures represent the anticipated incremental (PCE-adjusted) increases in peak hour traffic volumes attributable to the project at each of the study intersections, and provide the level of detail necessary to conduct the traffic analysis and identify the project's incremental traffic impacts. The analysis methodologies and results of the evaluation of the project's potential impacts on the selected study intersections are described in detail later in this report.

Project Parking and Access

Parking Requirements

The current City of Carson Zoning Code identifies off-street parking requirements for various commercial and/or industrial businesses, including "warehouse" such as the proposed project. The Zoning Code requires that industrial developments that include "large dock-high" loading facilities similar to the 26 loading docks proposed, are required to provide one vehicle (auto) parking space for every 1,500 square feet of gross floor area, inclusive of ancillary office space (typically up to about 10 percent of the total gross floor area). As described earlier, the project is proposed to contain a total of approximately 230,000 square feet of gross floor area, including approximately 206,400 square feet on the "at-grade" level, and an additional 23,600 square feet of mezzanine/office space. However, the specific uses of the mezzanine area are not currently defined, and for purposes of providing a conservative estimate of the number of required parking spaces for the project, the entire mezzanine area was assumed as "office" space. Therefore, since the 23,600 square feet of mezzanine area exceeds 10 percent of the total project floor area, the parking requirements for this portion of the project were calculated using the applicable industrial office parking rate of one space for each 300 square feet of floor area.

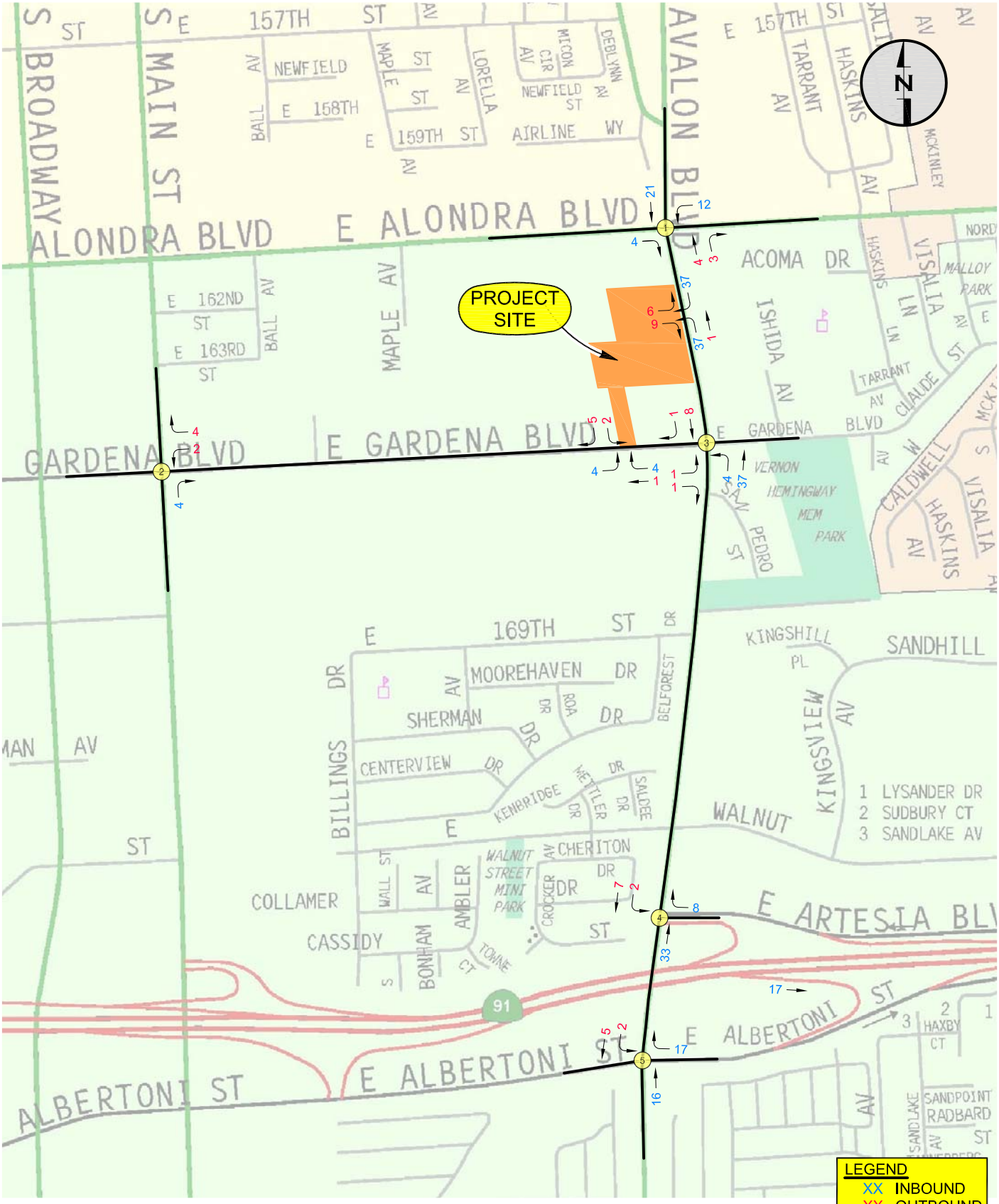

FIGURE 6(a)

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AUTOMOBILE PROJECT TRIPS
AM PEAK HOUR

AVALON-ALONDRA (CARSON) \ PROJVOLS-TRUCK-AM

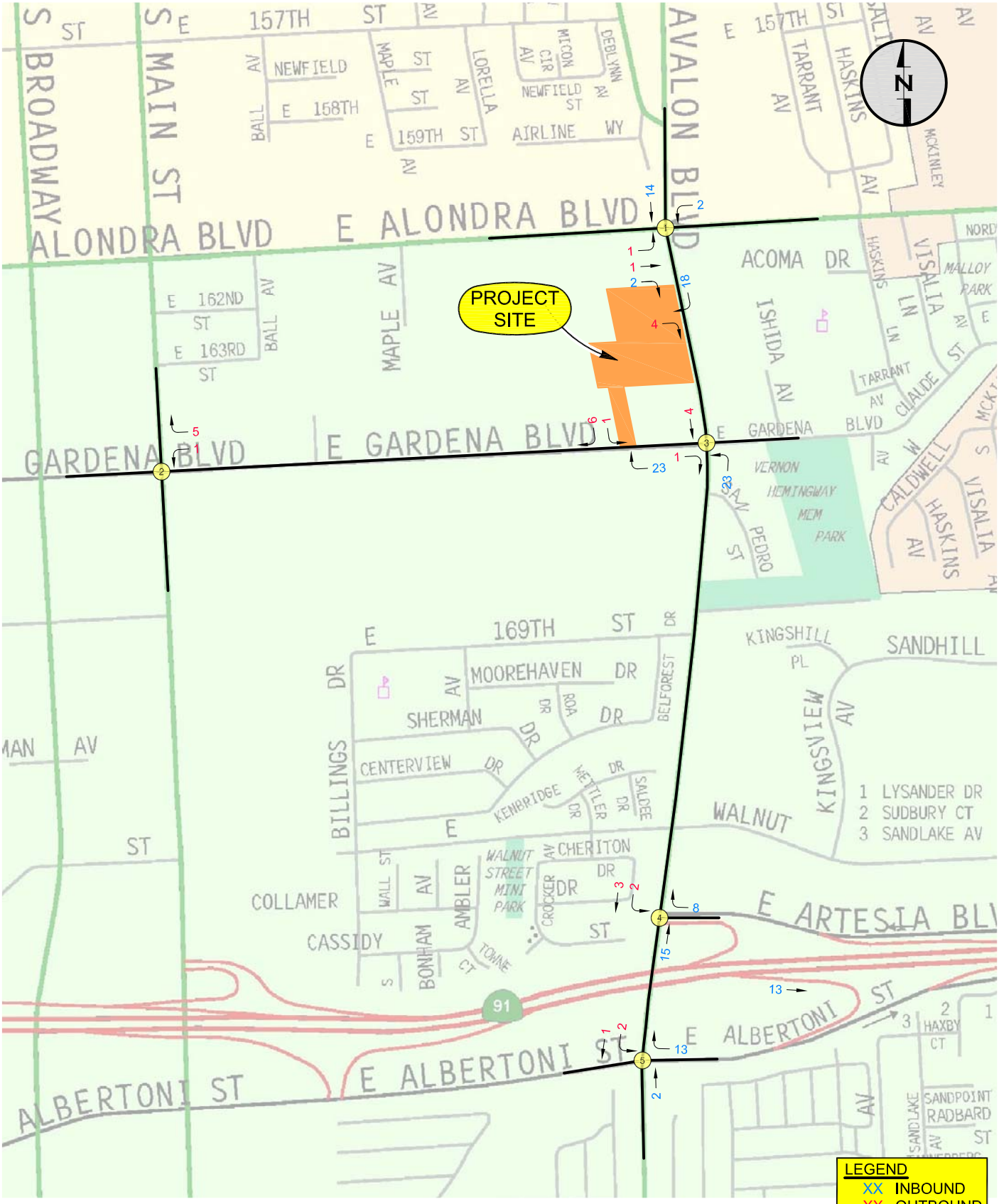

FIGURE 6(b)

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TRUCK PROJECT PCE TRIPS
AM PEAK HOUR

AVALON-ALONDRA (CARSON) \ PROJVOLS-AUTO-PM

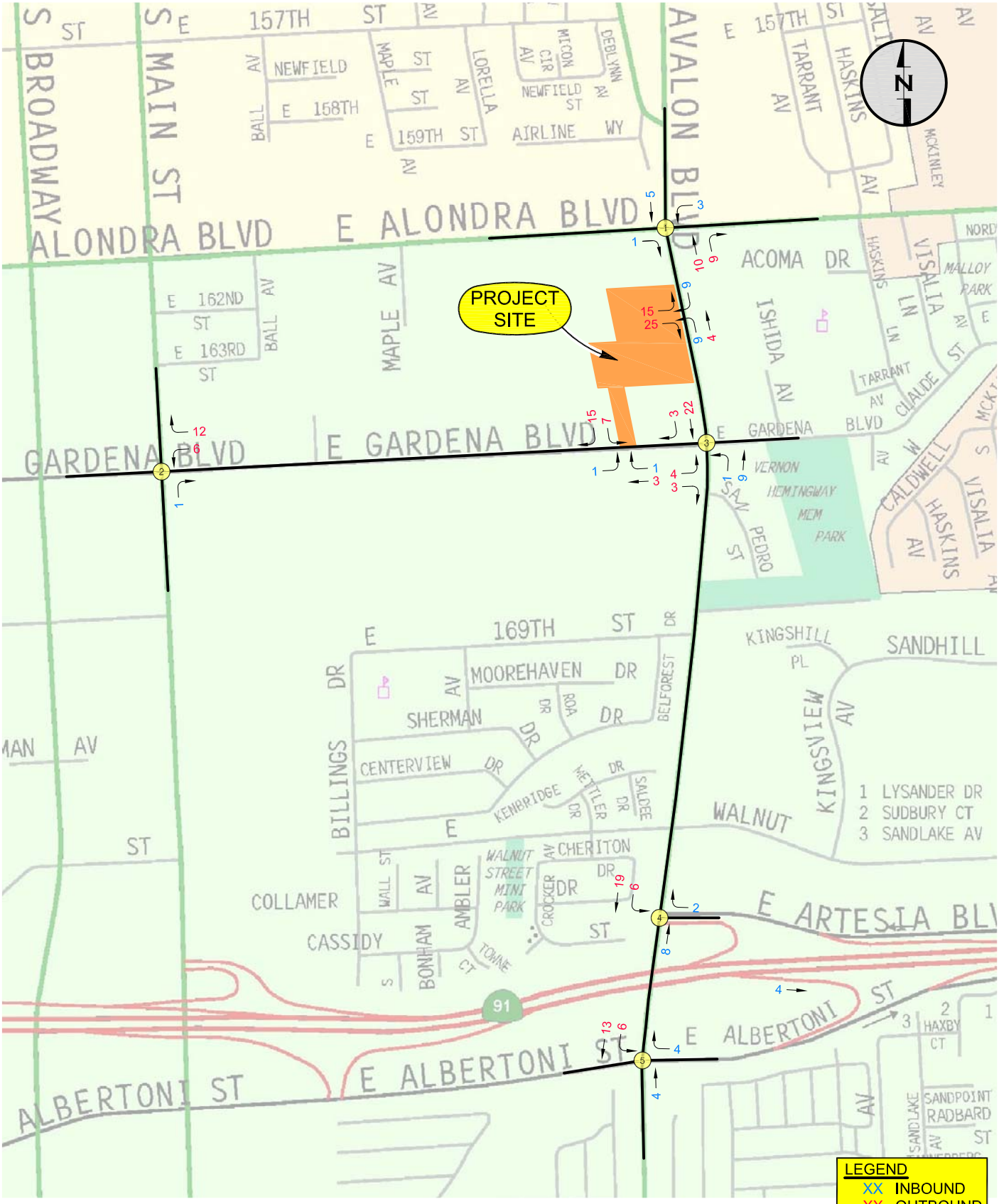

FIGURE 7(a)

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AUTOMOBILE PROJECT TRIPS
PM PEAK HOUR

AVALON-ALONDRA (CARSON) \ PROJVOLS-TRUCK-PM

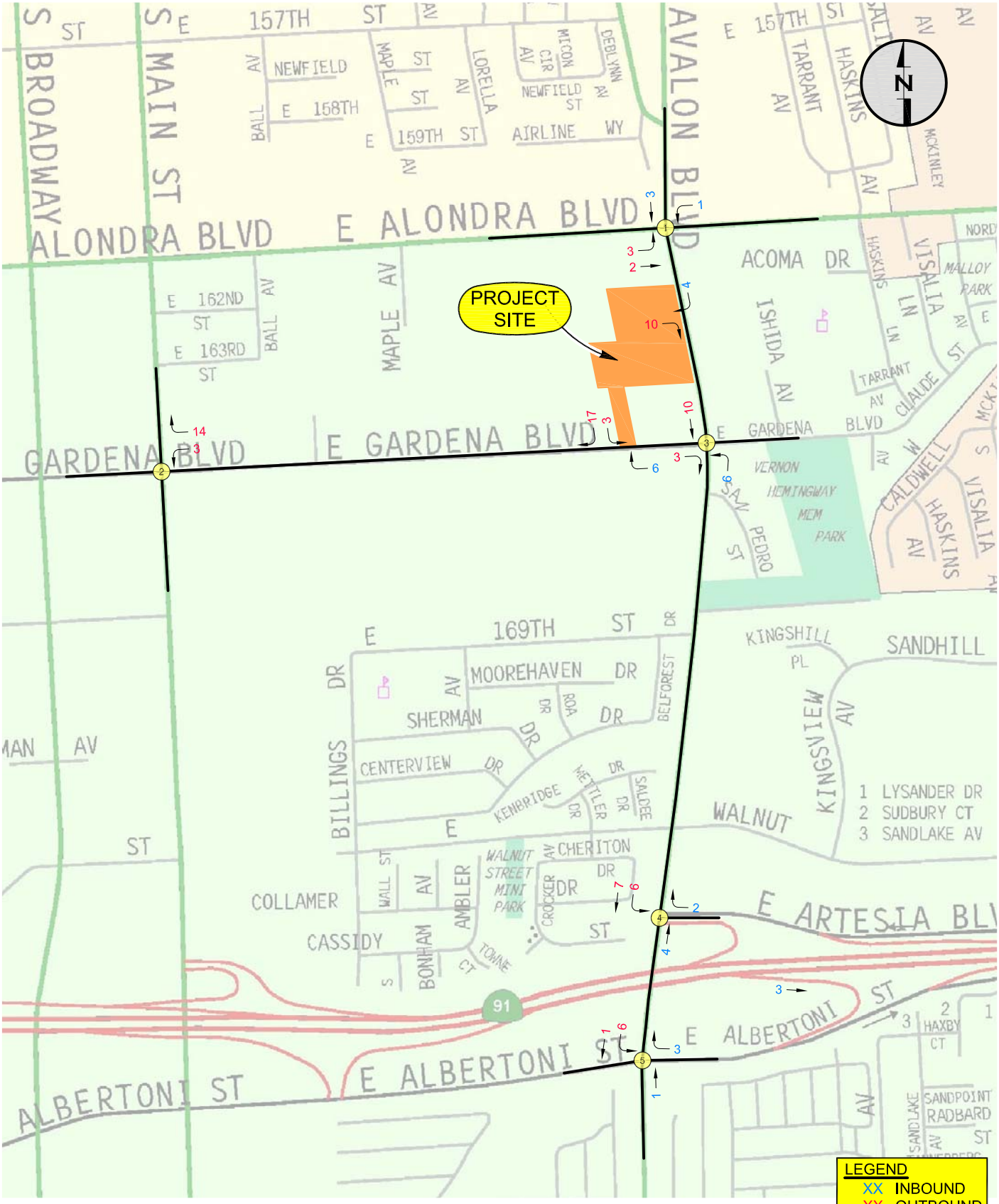

FIGURE 7(b)

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TRUCK PROJECT PCE TRIPS
PM PEAK HOUR

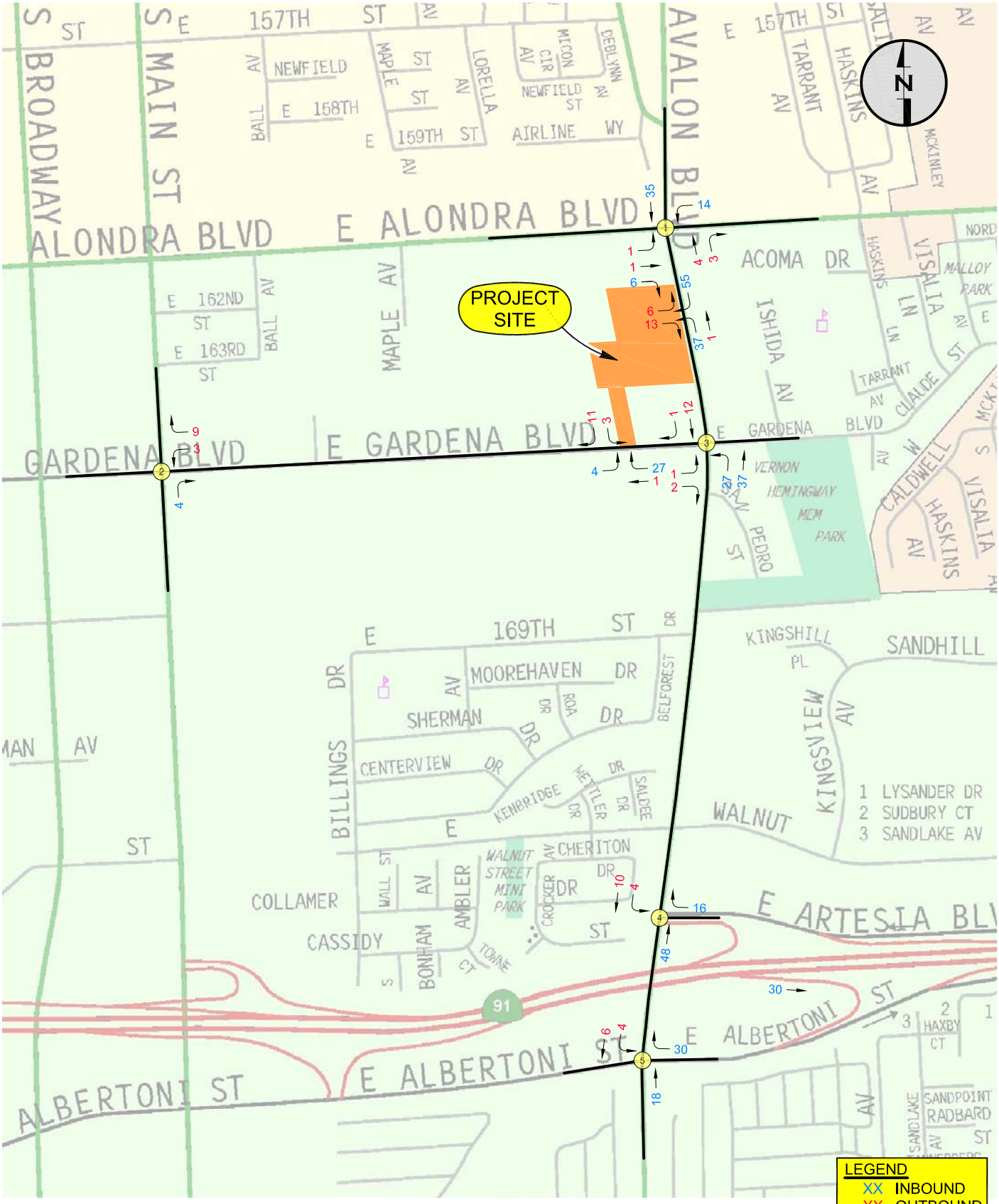

FIGURE 8(a)

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TOTAL PROJECT PCE TRIPS
AM PEAK HOUR

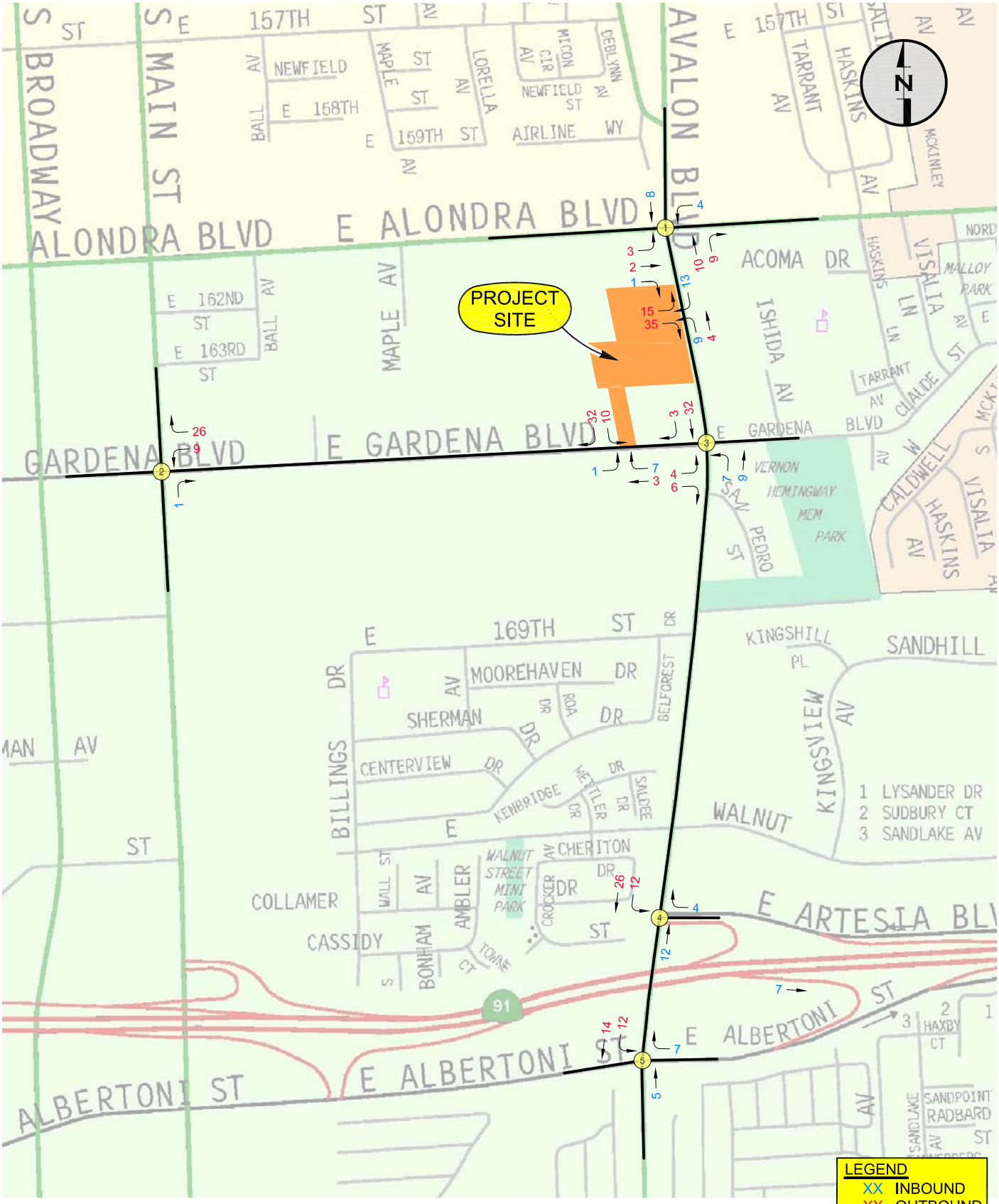

FIGURE 8(b)

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TOTAL PROJECT PCE TRIPS
PM PEAK HOUR

Based on these conservative assumptions, the project would require a maximum parking supply of approximately 138 spaces for the "industrial/warehouse" portion (206,400 square feet at one space per 1,500 square feet) plus an additional 79 spaces for the mezzanine "office" portion of the facility (23,600 square feet at one space per 300 square feet), or a total on-site parking requirement of approximately 217 spaces. As described earlier in this document, the project proposes to provide a total of approximately 230 on-site passenger vehicle parking spaces, exceeding the requirement by about 13 spaces. Therefore, no off-site parking-related impacts or "overflow" parking onto adjacent streets due to on-site parking shortages are anticipated.

In addition to the passenger vehicle parking spaces, the City also requires that industrial warehouse buildings having large dock-high loading facilities also provide on-site truck stacking/parking areas equal to one (truck) space for each seven (7) loading docks or doors. For the proposed project, which will contain a total of approximately 26 loading docks, this requirement equates to the provision of a total of four (4) truck parking spaces. As shown in the project site layout (previous Figure 3), the project will provide two truck service/maintenance and parking areas at the southwestern corner of the site. Although the project site plans do not identify any specific truck parking spaces within these service/maintenance yards, these areas are sufficiently large to accommodate the required minimum of four truck parking spaces, as shown conceptually in Figure 9, and as such, the project will meet its requirement for the provision of on-site truck parking. No additional requirements in this regard are applicable.

Site Vehicular Access and Parking/Loading Dock Operations

The project's on-site parking areas will be accessed by a total of four driveways, including three driveways along Avalon Boulevard, one each located near the northern and southern boundaries of the site and a third located about 2/3^{rds} of the way south along the project frontage (approximately opposite the existing break in the raised median island on Avalon Boulevard), and an additional driveway located along Gardena Boulevard south of the site and accessed via a narrow flag lot connecting to the main portion of the site near its western edge.

Although each of these driveways provides access to both the on-site passenger vehicle parking spaces and truck loading/parking spaces, several driveway and internal traffic operational restrictions are proposed due to physical constraints evident in both the project site layout and on the adjacent streets (Avalon Boulevard and Gardena Boulevard). First, due to the presence of the existing raised median island on Avalon Boulevard adjacent to the site, both the northern and southern project driveways will be restricted to right-turn entry/right-turn exit only

FIGURE 9

ON-SITE TRUCK SERVICE/MAINTENANCE AND PARKING

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operations, although the “middle” Avalon Boulevard driveway, located opposite a break in the median island (which also provides dedicated northbound and southbound left-turn pockets), is anticipated to provide “full” access, including left-turn and right-turn moves into and out of the project site; similarly, the Gardena Boulevard driveway, which does not exhibit any physical or operational access obstructions, will also operate as a full-access driveway.

However, these basic driveway operations, which were assumed in the assignment of the passenger vehicle trips at the project driveways, as shown earlier in Figure 5(a), are applicable only to the passenger vehicles entering and exiting the site. A review of the project site plan indicates that the proposed design of the “middle” Avalon Boulevard driveway will not provide either sufficient driveway width or drive aisle maneuvering space to accommodate either inbound or outbound semi-trailer truck traffic, and as such, truck usage of this driveway will be prohibited. Further, to maximize the efficiency of the on-site traffic flows, truck circulation along the northern and southern drive aisles will be restricted to westbound-only (entering truck trips) for the north drive aisle, and eastbound-only (exiting truck trips) for the southern drive aisle; truck movements along the western side of the project site (to and from the truck docks) and through the flag lot access road, however, will continue to provide two-way circulation.

The proposed truck access operations were examined in detail, to assure that adequate maneuvering room for trucks into and out of the truck dock locations is provided, and that the project’s driveways and drive aisles are wide enough to accommodate large trucks. These evaluations are depicted in Figure 10(a) for the recommended inbound truck traffic operations, and in Figure 10(b) for the recommended outbound truck movements. As shown in these figures, semi-truck entry to the site at the northernmost Avalon Boulevard driveway, and subsequent access through the site to the truck loading docks along the west side of the building, will operate acceptably, as will semi-truck exit movements through the southern on-site drive aisle and onto Avalon Boulevard from the southernmost driveway along that frontage, as well as to and from the two-way driveway along Gardena Boulevard. Therefore, no significant site access or internal vehicular circulation impacts are anticipated, and the project’s assumed truck access moves, shown previously in Figure 5(b), are appropriate for this analysis.

Finally, the overall operations of the project’s driveways were examined, to assure that adequate capacity is provided to accommodate the anticipated vehicular access demands of the project. The total traffic volumes at each of the project’s driveways were determined using the project traffic assignment percentages shown previously in Figures 5(a) and 5(b), along with the

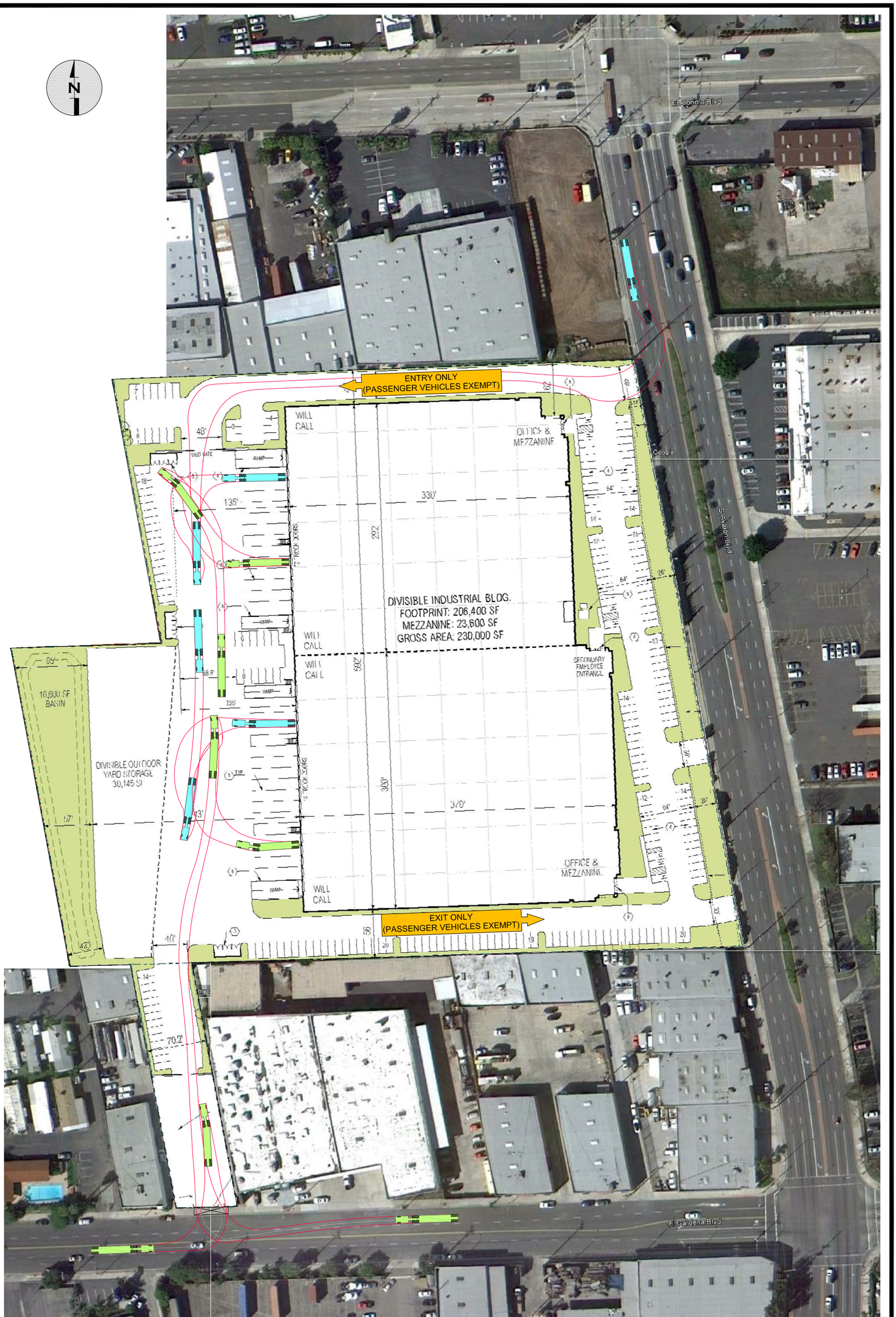

FIGURE 10(a)

TRUCK ENTRY AND DOCK ACCESS OPERATIONS

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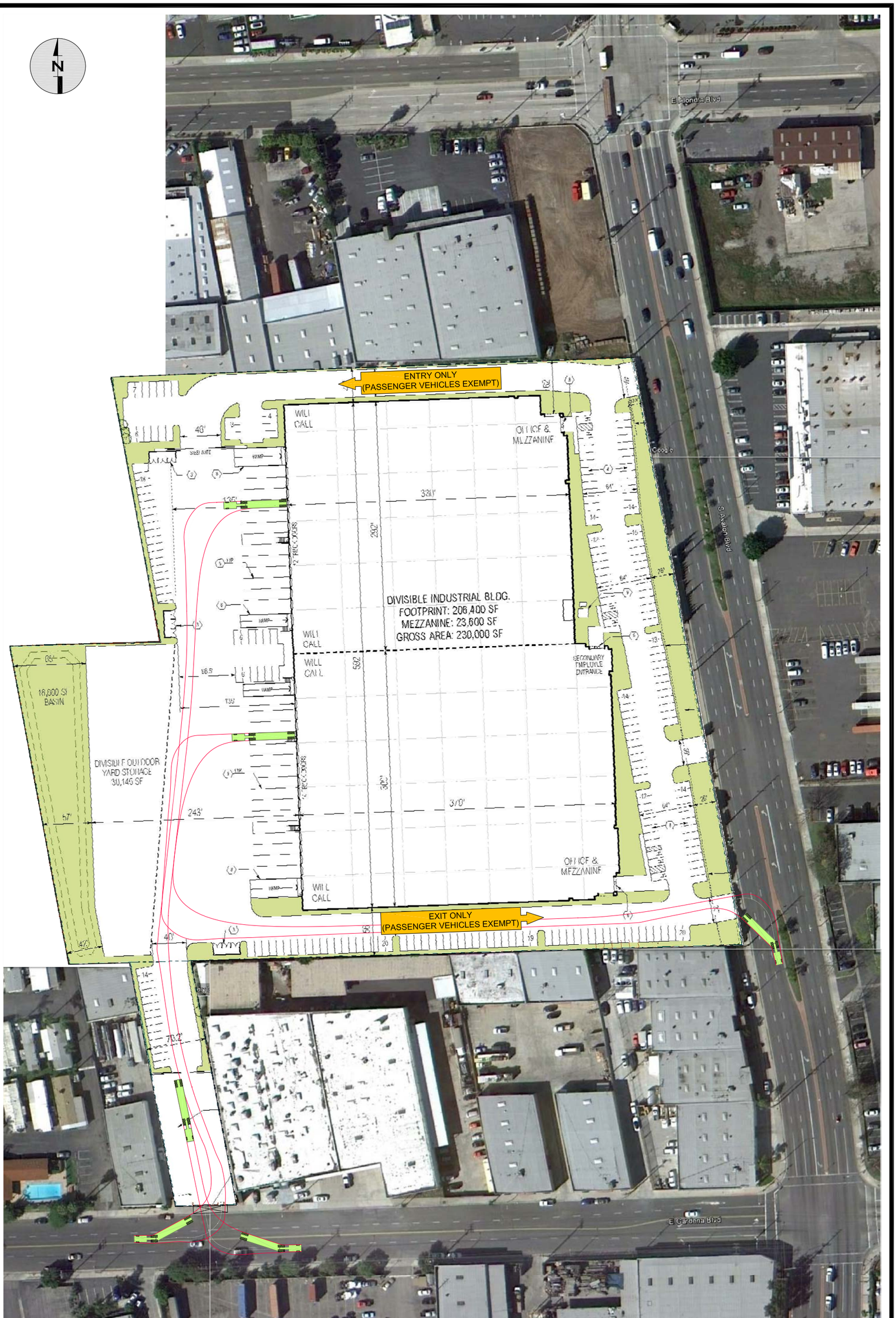

FIGURE 10(b)

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TRUCK EXIT OPERATIONS

project trip generation estimates shown in Table 2. The estimated driveway volumes, including individual identification of both passenger vehicle and truck trips, are shown in Figure 11(a) for the AM peak hour and in Figure 11(b) for the PM peak hour. Note that the expected project driveway volumes do not include the PCE adjustments for truck trips, since the operational capacities of the driveways are not evaluated in this manner. Additionally, the project's passenger vehicles were generally assumed to park in a relatively even distribution throughout the site, and were further assumed to enter and exit the site via the driveway nearest their potential parking locations; upon exiting, however, most vehicles destined for travel along northbound Avalon Boulevard were assumed to use the "middle" Avalon Boulevard driveway to take advantage of the existing median cut and the availability of the left-turn movement there, rather than exit onto eastbound Gardena Boulevard and then turn north at the intersection with Avalon Boulevard. Project truck trips were assigned based on the driveway access assumptions detailed earlier in this section.

As shown in Figure 11(a), during the AM peak hour, a total of approximately 26 inbound vehicles (17 passenger vehicles and nine trucks) and four outbound vehicles (all passenger vehicles) could be anticipated to use the northernmost Avalon Boulevard project driveway, while the "middle" driveway could be used by a total of approximately 44 inbound and eight outbound vehicles (all passenger vehicles), and the southernmost driveway could be accessed by a total of approximately 13 inbound vehicles (all passenger vehicles) and five outbound vehicles (three passenger vehicles and two trucks); additionally, the project's Gardena Boulevard driveway could be expected to exhibit a total of approximately 20 inbound vehicles (eight passenger vehicles and 12 trucks) and an additional 11 outbound vehicles (seven passenger vehicles and four trucks). Similarly, during the PM peak hour, as identified in Figure 11(b), the northernmost Avalon Boulevard driveway is estimated to accommodate a total of approximately six inbound (four passenger vehicles and two trucks) and 11 outbound vehicles (all passenger vehicles), the "middle" driveway could exhibit a total utilization of approximately 11 inbound and 20 outbound vehicles (all passenger vehicles), and the southernmost driveway could be accessed by a total of approximately three inbound vehicles (all passenger vehicles) and an additional 14 outbound vehicles (nine passenger vehicles and five trucks), while the Gardena Boulevard driveway is assumed to exhibit a total of approximately five inbound vehicles (two passenger vehicles and three trucks) and 32 outbound vehicles (22 passenger vehicles and 10 trucks). These values represent the actual number of vehicles expected to enter and exit the project's driveways during the morning and afternoon peak hour periods analyzed in this study.

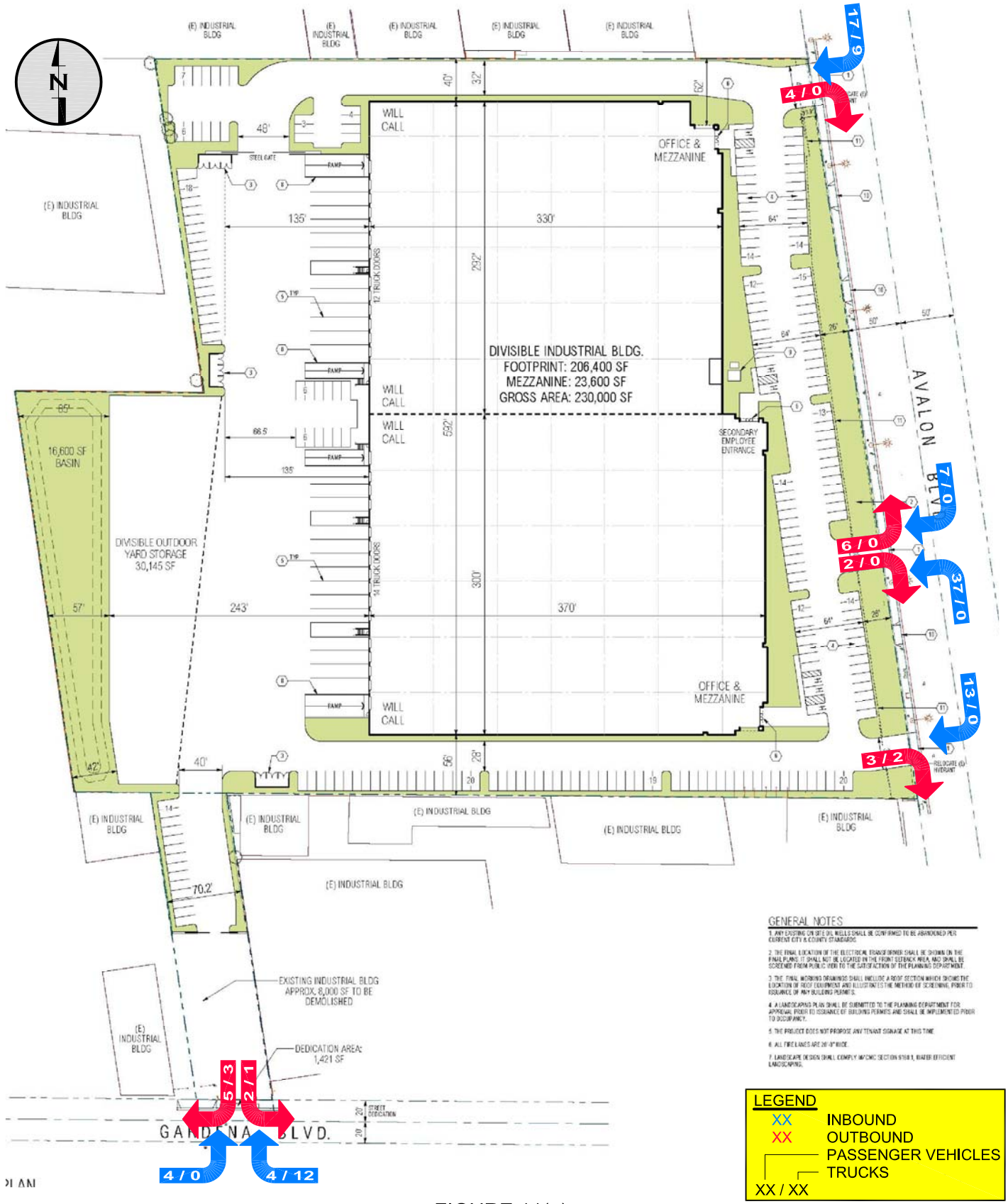

FIGURE 11(a)

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PROJECT DRIVEWAY TRAFFIC VOLUMES
AM PEAK HOUR

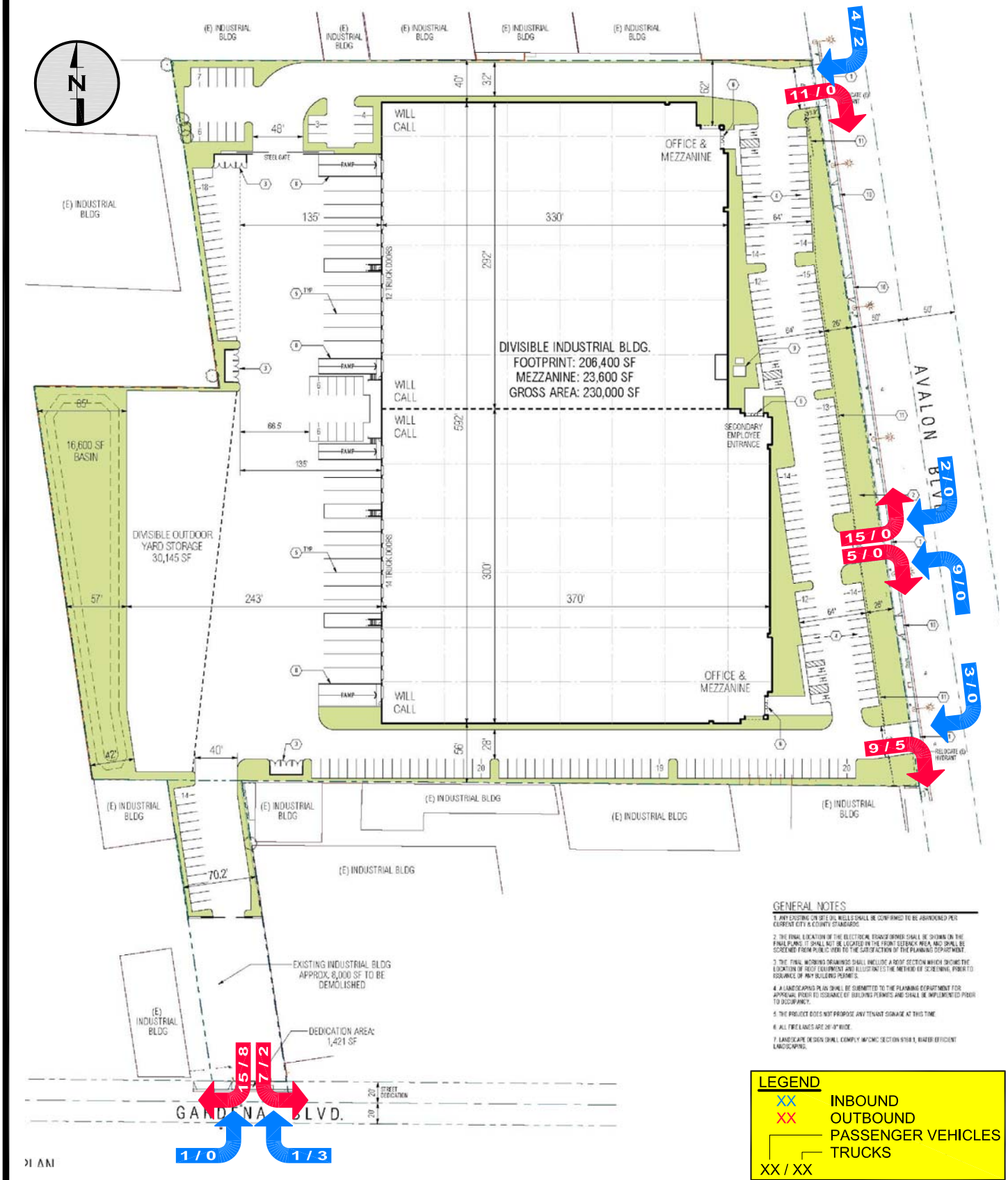

FIGURE 11(b)

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PROJECT DRIVEWAY TRAFFIC VOLUMES
PM PEAK HOUR

The project does not propose to install access control devices, such as “gate” arms activated by card keys or ticket dispensers, at any of the project’s driveways, and as such, each of the driveways will exhibit “uncontrolled” entering and exiting capacities. Typically, uncontrolled driveways provide entry capacities of between 750 to 1,000 vehicles per hour per lane. Driveway exit capacities are dependent upon the amount of traffic/congestion on the frontage streets; the site driveways are expected to provide exit capacities of between 400 and 500 vehicles per hour; each of the four site driveways is configured as one entry and one exit lane, and as such, the “per lane” capacity values identified above represent the total vehicular capacities of each driveway.

A review of the peak hour project driveway volumes shown in Figures 11(a) and 11(b) indicates that the vehicular demand at each of the project driveways for both inbound and outbound traffic will be substantially below the expected individual driveway access capacity levels. Therefore, the project driveways will provide more than sufficient capacity to accommodate the expected weekday and weekend peak hour vehicular demands of the development, and will operate adequately, with no significant external vehicular queuing along either Avalon Boulevard or Gardena Boulevard, and no significant internal queuing within the site parking lot.

Project Roadway Improvements

Avalon Boulevard adjacent to the project frontage is designated as a Major Highway, which based on the City’s current General Plan design standards, requires a half-roadway dedication (centerline to property line) of 50 feet, with a half-street improvement (centerline to back of curb) of 42 feet; this roadway currently exhibits this configuration, and therefore requires no additional right-of-way dedications or roadway widenings along the project frontage. Gardena Boulevard adjacent to the project’s flag lot frontage is designated as a Secondary Highway, which requires a 40-foot half roadway dedication improved with a 32-foot half-street improvement; this roadway is also currently improved to the General Plan specifications. However, it appears that an approximately 20-foot portion of the roadway, including the existing 10-foot sidewalk and 10 feet of the existing roadway, exists under an easement for future roadway improvements, and that the subject property has never been accepted by the City. Therefore, the project will, if necessary, formally dedicate this area along its Gardena Boulevard frontage to the City, although no additional roadway widenings or other improvements are necessary. The project will also be required to construct any new driveways to the City’s current standards, and repair or replace any damaged curb and gutter and/or sidewalks along both roadway frontages.

TRAFFIC IMPACT ANALYSIS STUDY AREA

Environmental Setting

The project is located at 16324 Avalon Boulevard in the northern portion of the City of Carson. The project site is bounded by Avalon Boulevard on the east, and by existing development on the north, west, and south, although a narrow "flag lot" extends south of the main portion of the project site to provide vehicular access to Gardena Boulevard. The areas immediately surrounding the site are developed primarily with light industrial, warehousing, and other commercial uses, although pockets of single-family residential neighborhoods exist approximately two blocks to the north and south of the project site, and residential development becomes the predominant use approximately one-quarter mile to the east of the site. Additionally, the Compton Woodley Airport is located approximately one mile east of the project on Alondra Avenue, while the California State University Dominguez Hills campus is approximately one and one-quarter mile to the south along Avalon Boulevard.

Area Transportation Facilities

The project area is served by both local and regional transportation facilities. Two freeways are located within about one mile of the project site, the Harbor (I-110/SR-110) Freeway to the west and the Artesia/Gardena (SR-91) Freeway to the south; both freeways provide ramp connections to the surface street network serving the project vicinity. In addition to these regional transportation facilities, a number of major and secondary arterials traverse the study area, as does a relatively well-developed local street grid, although some local and collector roadways are discontinuous through the area due to the nearby freeways or various developments in the area. The key transportation facilities in the project vicinity are described in detail in the following pages.

Freeways

Harbor (SR-110/I-110) Freeway and Transitway – This north-south oriented freeway facility is located approximately one mile to the west of the project site, and provides a key regional connection between the northern part of downtown Los Angeles at the Four-Level Interchange (Hollywood Freeway/Santa Ana Freeway/Pasadena Freeway/Harbor Freeway interchange) along the west side of downtown Los Angeles southward to the Los Angeles Port and Harbor facilities in San Pedro. The Harbor Freeway generally provides four to five mainline travel lanes

in each direction, plus additional/auxiliary lanes between ramps or at interchanges with other freeways. Additionally, a separate elevated high-occupancy vehicle ("HOV") "Transitway" facility is provided in the median of the freeway between approximately Adams Boulevard and Slauson Avenue; the Transitway is an extension of the multiple HOV and/or bus-only lanes on the Harbor Freeway generally north of the Artesia/Gardena Freeway (SR-91). The nearest Harbor Freeway/surface street access ramps in the general project vicinity are provided at Redondo Beach Boulevard, located outside the immediate study area approximately one-half mile north of the project site. The Harbor Freeway also provides a full interchange with the Artesia/Gardena Freeway, about one and one-half miles southwest of the project site.

Artesia/Gardena (SR-91) Freeway – One of primary east-west transportation facilities in the region, the Artesia/Gardena Freeway is located approximately two-thirds of a mile to the south of the project site. This freeway begins just west of the Harbor Freeway, at Vermont Avenue, and continues eastward through Los Angeles County, the northern portion of Orange County, and into Riverside County, where it becomes the Riverside (I-215) Freeway at the interchange with the Mareno Valley (SR-60) Freeway, ultimately completing a loop back to the northwest to merge with the Ontario (I-15) Freeway near the Cajon Pass. To the west of Vermont Avenue, the Artesia/Gardena Freeway becomes Artesia Boulevard, which continues west to terminate at Pacific Coast Highway (SR-1) in the City of Hermosa Beach. In the vicinity of the project, the Artesia/Gardena Freeway is generally configured to provide four mainline mixed-flow travel lanes plus an HOV lane in each direction, with additional auxiliary lanes provided near ramp or interchange locations. The nearest surface street ramp connections to the project site are located at Avalon Boulevard, with additional ramps provided at Main Street/Albertoni Avenue one-half mile to the west, and Central Avenue one mile to the east. Additionally, as noted earlier, the Artesia/Gardena Freeway provides a full interchange with the Harbor Freeway approximately one and one-half miles southwest of the project site.

Streets and Highways

Major and Secondary Highways

Artesia Boulevard – This north-south Major Highway is located along the eastern frontage of the project site, and provides an uninterrupted connection through the Central Los Angeles area, between Jefferson Boulevard in the Exposition Park area of the City of Los Angeles on the north, through the Athens Village and Rosewood areas of unincorporated Los Angeles County and the City of Carson, and its southern terminus at Harry Bridges Boulevard in the Wilmington

community of the City of Los Angeles, just north of the Los Angeles Harbor and Terminal Island. In the project vicinity, Artesia Boulevard is typically configured to provide three through lanes plus exclusive left-turn channelization at major intersections, with the northbound and southbound lanes separated by a raised median island through much of the study area; a break in the median island (also providing exclusive northbound and southbound left-turn pockets) is located along the project frontage near the southern boundary of the site. Artesia Boulevard is designated as a "truck route" through the City of Carson. On-street parking is prohibited at all times along both sides of Avalon Boulevard through the study area.

Gardena Boulevard – This east-west oriented roadway is located approximately 300 feet south of the project site, although it exhibits a short (approximately 70-foot) project frontage due to the project's "flag lot" and access roadway connecting the site to Gardena Boulevard. This facility is designated as a Secondary Highway in the City of Carson, and provides a connection between Grammercy Place at the City of Carson/City of Torrance border on the west (although it continues westward as 164th Street to Crenshaw Boulevard through the City of Torrance), to just east of Avalon Boulevard, where it becomes Claude Street (a local street) and continues to its eastern terminus at Amantha Avenue (just west of Central Avenue) in the City of Compton. Through the study area, Gardena Boulevard is typically striped to provide two through lanes in each direction, plus exclusive left-turn channelization at most intersections (although both approaches at Avalon Boulevard are striped as one left-turn lane, one through lane, and one right-turn only lane). On-street parking is generally permitted throughout the day along both sides of Gardena Boulevard within the study area.

Alondra Boulevard – Designated as a Major Highway, Alondra Boulevard is located less than 300 feet north of the project site, at the City of Carson/Los Angeles County border, and provides a key east-west oriented connection from Vermont Avenue on the west (although it continues westward as 161st Street to Normandie Avenue in the City of Gardena) through the cities of Compton, Paramount, Bellflower, Norwalk, Santa Fe Springs, and La Mirada to ultimately terminate at La Mirada Boulevard, about 17 miles to the east. Within the immediate study area, Alondra Boulevard is identified as a "truck route" and is improved with a wide raised median island, and is striped to provide three peak period (6:30 to 8:00 AM, 4:00 to 6:00 PM) travel lanes plus left-turn channelization at cross streets and mid-block driveways (via left-turn pockets provided within the raised median island). On-street parking is typically allowed on both sides of Alondra Boulevard during much of the day, but is prohibited in both directions during the peak commute hours noted earlier to provide the third through lane.

Artesia Boulevard – Another east-west oriented Major Highway, Artesia Boulevard is, overall, a key east-west roadway in this portion of the Los Angeles region, traversing the area between Pacific Coast Highway in Hermosa Beach on the west to Gilbert Street in the City of Fullerton in Orange County on the east. However, within the project vicinity, Artesia Boulevard, located a little more than one-half mile south of the project site, operates essentially a one-way frontage road paralleling the Artesia/Gardena Freeway (westbound along the north side of the freeway between Acacia Avenue to Avalon Boulevard, and eastbound on the south side of the freeway between Central Avenue and Acacia Avenue), providing surface street connections between and access to the Artesia/Gardena Freeway on- and off-ramps. Artesia Boulevard is discontinuous between Avalon Boulevard and Vermont Avenue, where it returns as the eastward continuation of the terminus of the Artesia/Gardena Freeway. Within the immediate study area, the "frontage road" portions of Artesia Boulevard are designated by the City of Carson as "collector streets", although they are also identified as "truck route" facilities, and are striped to provide two travel lanes in their respective directions, although near the major cross streets where freeway ramps are provided, the ramps combine with Artesia Boulevard to provide a third travel lane. On-street parking is prohibited along both sides of the roadway throughout the "frontage road" sections.

Albertoni Street – This generally east-west oriented Secondary Highway facility is located approximately three-quarters of a mile south of the project site, along the south side of the Artesia/Gardena Freeway. Albertoni Street provides a two-way connection from Figueroa Street on the west (although it continues westward as 182nd Street through the cities of Los Angeles, Gardena, and Torrance before terminating at Inglewood Avenue in the City of Redondo Beach) and Avalon Boulevard on the east; at Avalon Boulevard, this facility provides a westbound approach at the intersection, although the westbound lanes are actually the westbound off-ramp lanes of the Artesia/Gardena Freeway; east of Avalon Boulevard, Albertoni Street continues as a one-way eastbound facility to terminate opposite (and continue as) Artesia Boulevard at Central Avenue. Throughout the study area, Albertoni Street is identified as a "truck route", and is typically improved to provide three eastbound and two westbound travel lanes plus a painted median island/two-way left-turn lane that converts to provide exclusive left-turn channelization at cross streets and key driveways, including dual left-turn lanes at the Artesia/Gardena Freeway eastbound on-ramp located between Avalon Boulevard and Main Street. On-street parking is generally permitted along the north side of the street within the study area, but is prohibited at all times along the south side of the roadway.

Public Transportation

Public transit within the study area consists primarily of local-serving bus lines providing multiple stops and convenient localized access to shopping, business, and recreation destinations, although some regional transit opportunities are present. This bus service is operated primarily by the Los Angeles County Metropolitan Transportation Authority ("Metro"), although the City of Gardena and City of Carson also run buses within the project vicinity. However, while the area in general is served by a number of bus lines and other public transit facilities, only four bus lines currently provide stops at or within convenient walking distance (approximately one-quarter mile) of the project site; Metro Lines 52/352, the Carson Circuit Transit System Route H, and Gardena Municipal Bus Line 3. While other bus lines operated by these and other providers are not located close enough to the project site to be used directly, including Metro Line 51 along Compton Boulevard to the north, and Orange County Transit Authority ("OCTA") Line 721 along Artesia Boulevard and the Artesia/Gardena Freeway to the south, these and other transit lines can generally be accessed via connections or transfers from the site-serving lines to provide access to the project from the larger regional area. A map of the current bus service in the project vicinity is shown in Figure 12, while the key public transportation facilities most directly serving the site are described in more detail below.

Metro Lines 52/352 – These bus lines provide weekday, weekend, and holiday service between the Wilshire/Vermont Metro Red Line/Purple Line Station in the Koreatown community of the City of Los Angeles and the Artesia Transit Center, located adjacent to the Harbor Freeway near 182nd Street. Lines 52/352 loop along Shatto Place, 6th Street, and Vermont Avenue around the Wilshire/Vermont station, then along 7th Street through downtown Los Angeles (with a stop at the 7th Street/Metro Center Transit Center) to San Pedro Street before turning south to travel along San Pedro Street and Avalon Boulevard through the project vicinity (with additional stops at the San Pedro Metro Blue Line Station and Avalon/I-105 Metro Green Line Station, to Victoria Street, before traveling along Victoria Street, Figueroa Street, and 182nd Street to the Artesia Transit Center. Lines 52/352 typically operate between about 4:30 AM and 12:30 AM every day, with Line 52 providing local-stop service along this route and Line 352 providing only limited-stop service, although both include a stop at Avalon Boulevard and Alondra Boulevard, approximately 300 feet north of the project site. Weekday headways for Lines 52/352 are approximately every three to five minutes in each direction during the peak morning and afternoon/evening periods, extending to 10 to 20 minutes or more during the off-peak hours, with weekend and holiday headways of approximately eight to 10 minutes throughout the day.

AVALON-ALONDRA (CARSON) \ BUS-ROUTES

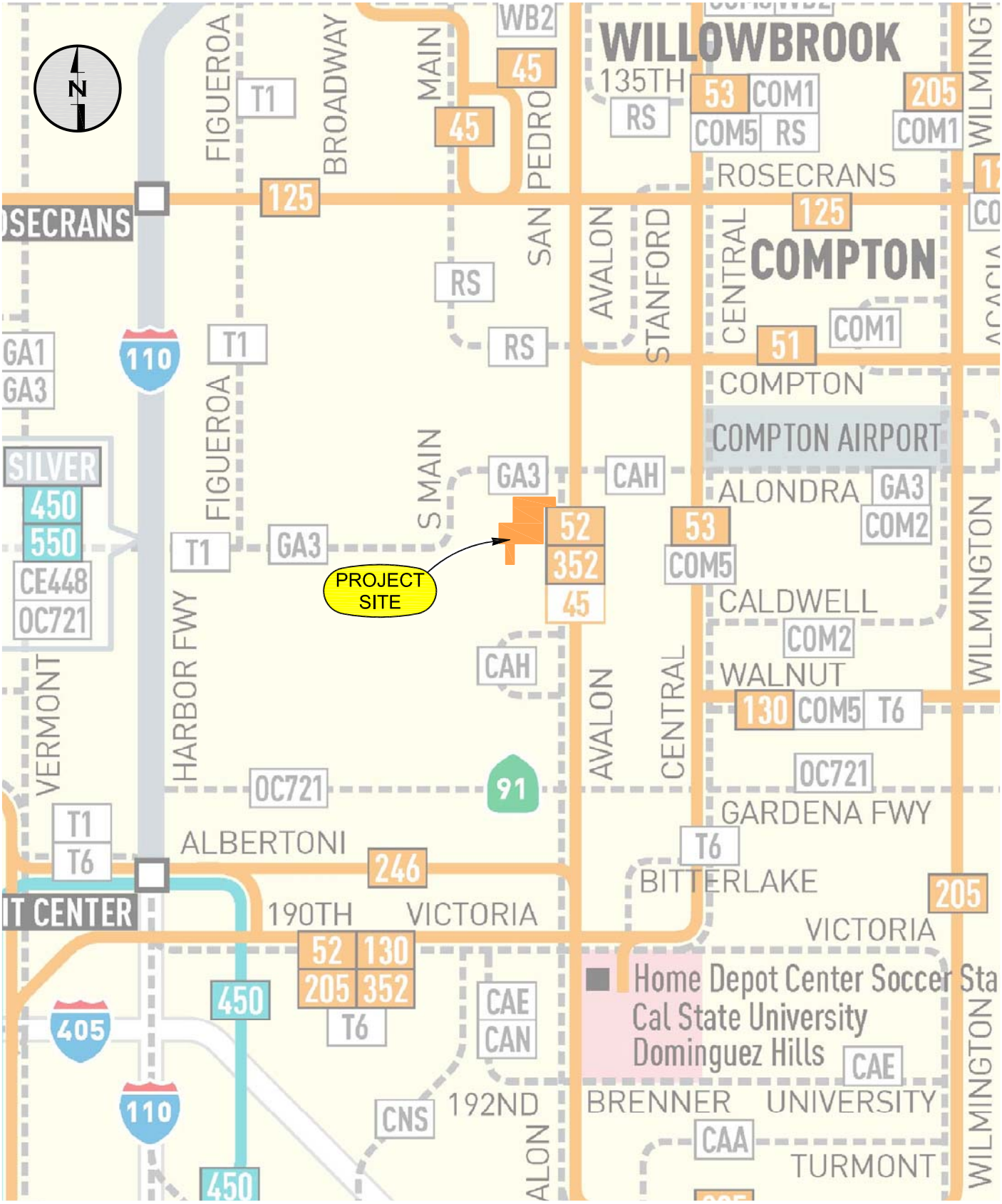

FIGURE 12

11/10/2011

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AREA TRANSIT SERVICE MAP

Carson Circuit Transit System, Route H – This local-service shuttle provides weekday and Saturday service between the Vernon Hemingway Memorial Park area of the City of Carson (just east of the project site), and the South Bay Pavilion shopping center, in the southeast quadrant of the intersection of Avalon Boulevard and Del Amo Boulevard, approximately two and one-half miles south of the project site. Beginning at Avalon Boulevard, Route H loops along Gardena Boulevard, Claude Street, McKinley Avenue, and Alondra Boulevard before turning south along Avalon Boulevard past the project site (with stops at both Alondra Boulevard and Gardena Boulevard), providing a local-serving loop through the residential community south of the project site, bounded by 169th Street, Billings Drive, and Walnut Street, before continuing along Avalon Boulevard to the South Bay Pavilion. Route H operates between about 5:20 AM and 6:30 PM on weekdays, and between about 10:40 AM and 5:15 PM on Saturdays, with headways in both directions of approximately 40 minutes throughout the day every day.

Gardena Municipal Bus Line 3 – This bus line (not to be confused with the Gardena Municipal Bus Line 3 School Tripper, which does not serve the project vicinity) provides weekday and weekend service between the Martin Luther King, Jr. Transit Center and Metro Blue Line Compton Station, both located near Compton Boulevard and Willowbrook Avenue in the City of Compton, and the South Bay Galleria shopping center near Redondo Beach Boulevard and Hawthorne Boulevard in the City of Torrance. Line 3 travels along Compton Boulevard, Wilmington Avenue, and Alondra Boulevard to Main Street, passing through the project vicinity along Alondra Boulevard and providing a site-serving stop at Avalon Boulevard. At Main Street, Line 3 then turns north to access Redondo Beach Boulevard, then travels west along this roadway to Hawthorne Boulevard before making a loop around the South Bay Galleria and returning to the Martin Luther King, Jr. Transit Center and Metro Blue Line Compton Station along the reverse route. Line 3 operates on weekdays between about 5:30 AM and 9:30 PM for eastbound travel and about 6:00 AM and 8:30 PM for westbound travel, and between about 5:30 AM and 7:00 PM for both eastbound and westbound travel on weekends. Weekday headways of approximately every 15 minutes are provided in both directions during the peak morning and afternoon/evening periods, but extend to about 30 minutes during the off-peak periods, while weekend headways are about 30 minutes in both directions throughout the day.

As described in the preceding pages, some limited public transportation is currently available to visitors and employees of the proposed project, and the bus lines described in the preceding pages providing direct service to the project site allow transfers to and from a number of additional transit services throughout the area at multiple locations along their routes, or at

designated transit centers served by these lines. As a result, area-wide transit service is available for the proposed project. However, practical use of the existing site-serving transit lines to travel significant distances throughout the region would typically require multiple and time-consuming transfers to these other lines. Therefore, in order to present the most conservative analysis of the potential traffic impacts of the project, no significant additional use of public transportation by project employees or visitors beyond that intrinsically included in the ITE trip generation data was assumed for this analysis.

STUDY AREA TRAFFIC VOLUMES

Existing (Year 2011) Traffic Volumes

Existing (No Project) Conditions

Current traffic volumes for the five intersections analyzed in this report were obtained from counts performed specifically for this study for Hirsch/Green in late October of 2011. The traffic count data represent typical mid-week conditions during weeks with no holidays or other special events, and with area businesses and schools generally in normal operation. The "peak hour" volumes described in this analysis reflect the highest four consecutive 15-minute periods within a larger three-hour count windows; peak hour traffic volumes were determined individually for each of the study intersections, assuring that the "worst case" operational conditions at each location were analyzed in this study. The "existing" (year 2011) peak hour traffic volumes at each of the five signalized study intersections are shown in Figure 13(a) for the AM peak hour conditions and in Figure 13(b) for the PM peak hour conditions.

Existing With Project Conditions

Although not specifically required under the City's current traffic study policies, recent court actions related to preparation of environmental studies, including traffic impact analyses, conducted under the California Environmental Quality Act ("CEQA") have identified that an analysis of potential project-related impacts on existing conditions in the study is required, in order to identify any "immediate" traffic impacts within the project vicinity which may result from development of the proposed project alone. Therefore, in order to comply with the CEQA requirements, this study includes a supplemental "Existing (2011) With Project" analysis scenario. The traffic volumes associated with this scenario were developed by adding the net project traffic volumes shown earlier in Figures 8(a) and 8(b) to the existing (year 2011) traffic volumes shown in Figures 13(a) and 13(b), with the resulting "Existing (2011) With Project" scenario traffic volumes shown in Figures 14(a) and 14(b).

Future (Year 2013) Traffic Volumes

In addition to the "Existing (no project) and "Existing With Project" analyses described above, the City of Carson also requires an evaluation of the effects of the proposed project on the forecast future conditions in the area, with the future study year reflecting the date when the project is expected to be completed, fully occupied and operational. For purposes of this study,

AVALON-ALONDRA (CARSON) \ EX2011-AM

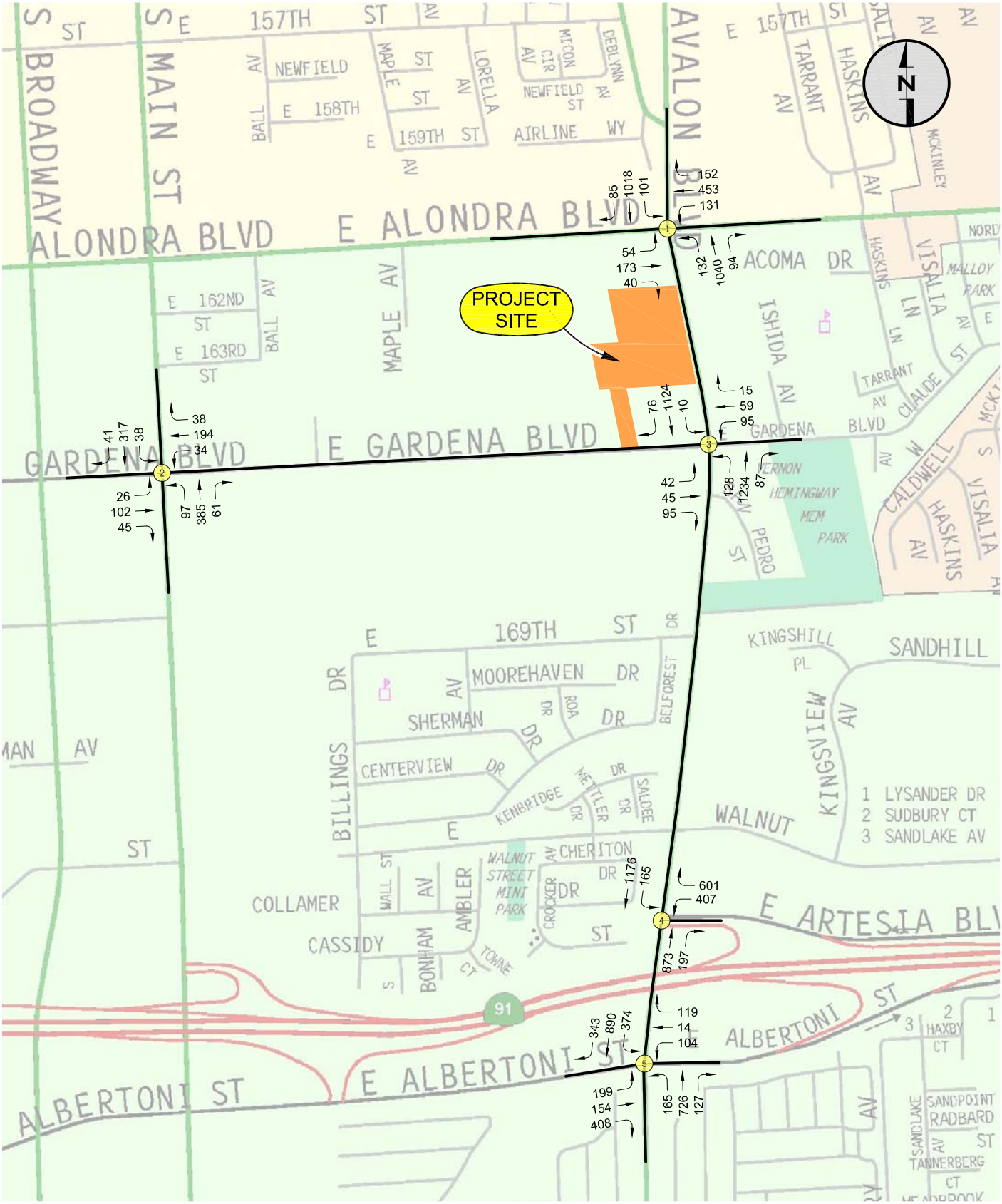

FIGURE 13(a)

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EXISTING (2011) TRAFFIC VOLUMES
AM PEAK HOUR

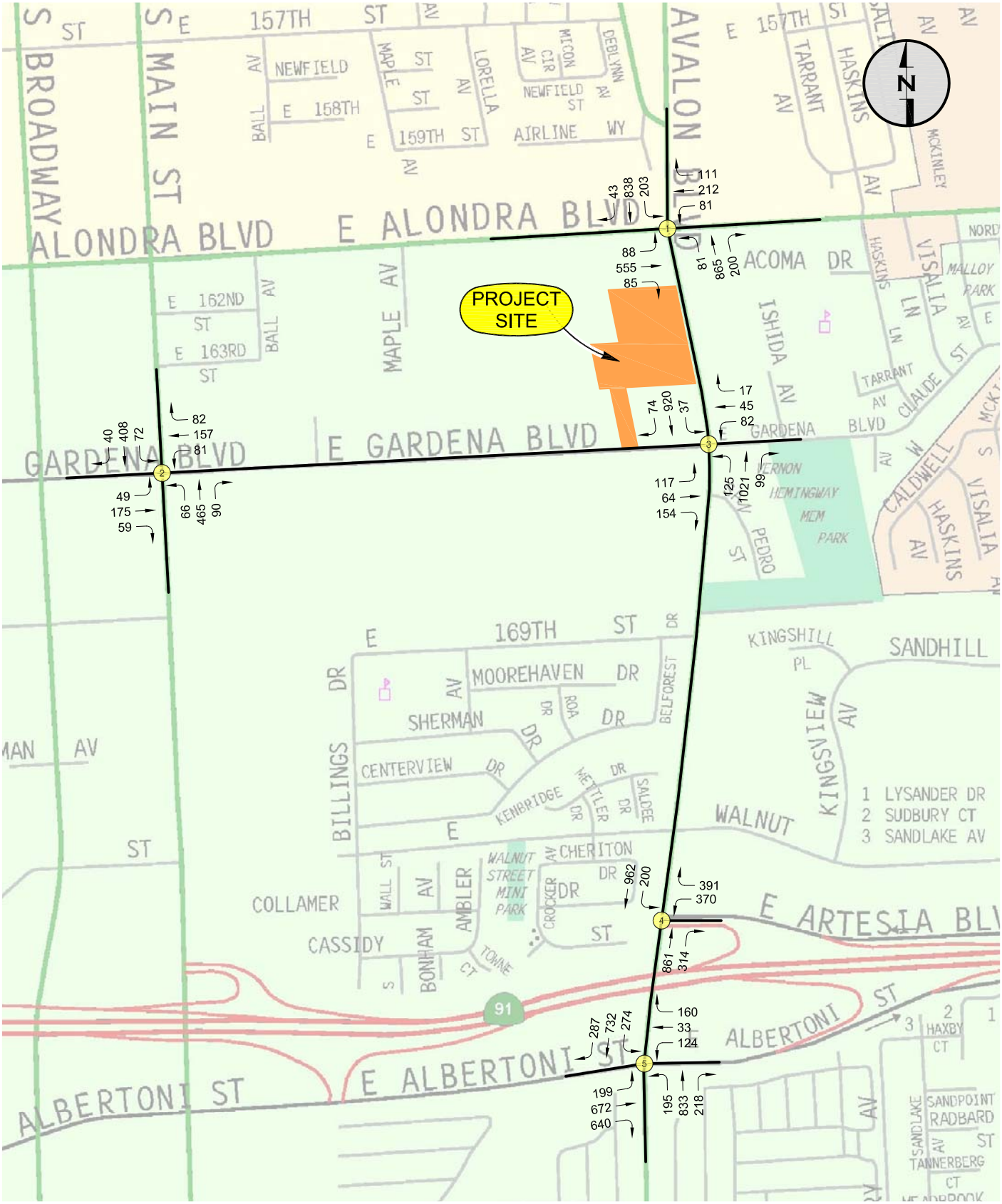

FIGURE 13(b)

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EXISTING (2011) TRAFFIC VOLUMES
PM PEAK HOUR

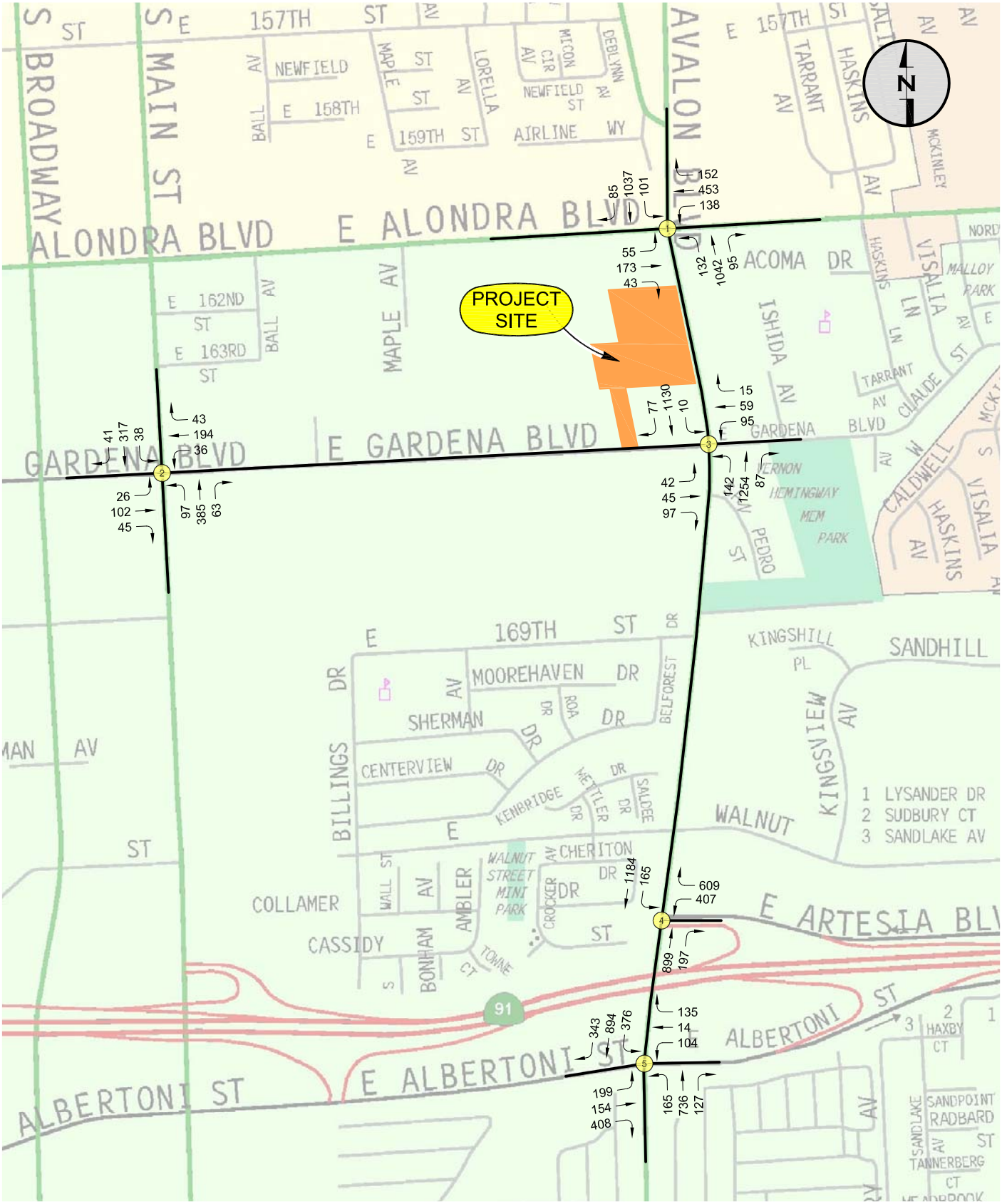

FIGURE 14(a)

11/2/2011

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EXISTING (2011) TRAFFIC VOLUMES
WITH PROJECT
AM PEAK HOUR

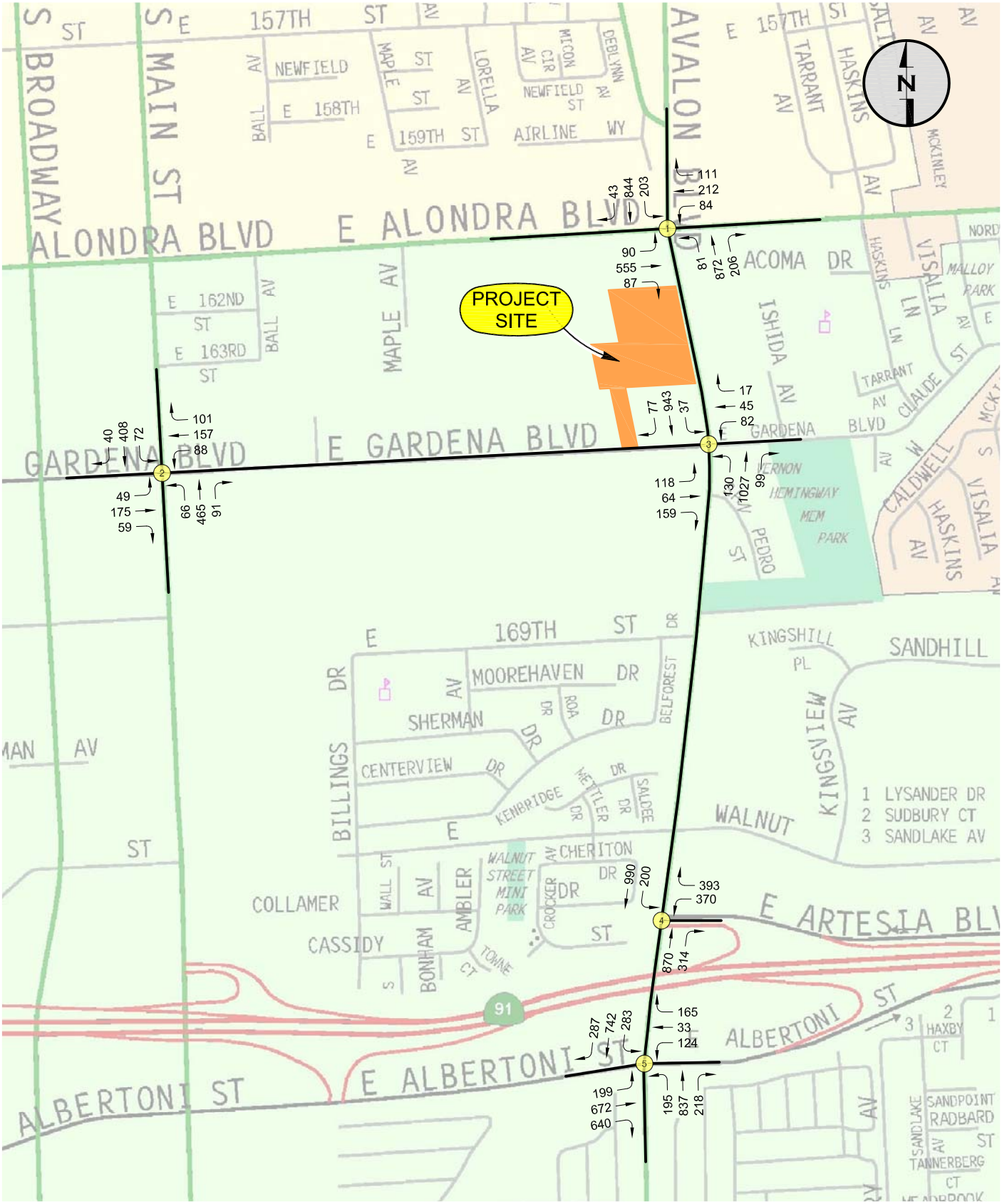


FIGURE 14(b)

HIRSCH GREEN
Hirsch/Green Transportation Consulting, Inc.

EXISTING (2011) TRAFFIC VOLUMES
WITH PROJECT
PM PEAK HOUR

the project developer has identified that the project is expected to be completed and operational by the end of the year 2013, which was therefore assumed as the future study year for this analysis. These "future year" analyses identify both the potential project-specific traffic impacts on the future roadway system, as well as the effects of anticipated future traffic growth on area traffic operations, which may be exacerbated by development of the proposed project.

Future traffic volumes in the project vicinity, and indeed throughout the region, are anticipated to increase as a result of a number of factors that are generally unrelated to the development of the specific project proposed, although two of these factors contribute most significantly to area traffic growth. The first of these factors is the result of simple ambient increases in the number of vehicles on the roadway system. This ambient traffic growth occurs on both a local and regional basis due to a number of reasons, including but not limited to increases in population (not tied to development), additional vehicles for existing households (as children become driving age, or new multi-vehicle status for current single-vehicle families), economic factors such as new jobs creating new worker trips, and other factors.

The second factor associated with future traffic growth is new traffic resulting from ongoing and continued development. This factor is generally regarded as more localized than the general ambient growth factor described earlier, and is based on information regarding specific development activity within or in close proximity to the project area, but unrelated to the proposed project itself. A survey of development activity in the project vicinity indicated that there are a number of projects (in addition to the proposed 16325 Avalon Boulevard project) that are either currently under construction or planned for development, and which will likely contribute to future traffic growth within the study area.

Therefore, since the project is not expected to be built and occupied immediately (in spite of the required supplemental "Existing With Project" analyses described earlier), its traffic, and consequently, the impacts of that traffic, will occur on a roadway system that is likely to be accommodating more traffic than indicated in the discussion of "Existing (2011)" conditions. For this reason, the analysis of future traffic conditions has been expanded to include potential traffic volume increases expected from both ambient growth and from traffic generated by projects that have not yet been developed. These "Future (2013) Without Project" volumes represent the forecast traffic conditions in the study area at the time the project is expected to be completed, but prior to its occupancy, and form the benchmark against which the project's incremental traffic additions (calculated earlier) on future traffic operations are assessed.

Without Project Traffic Forecasts

Briefly, the methodology for estimating future traffic volumes was as follows: First, as described in a preceding section of this report, the current (year 2011) traffic volumes were determined by traffic counts. These existing volumes were then used to estimate future conditions (year 2013) through the application of an "ambient traffic growth factor". This growth factor, compounded annually, was applied to all of the turning movement volumes at the study intersections to form the benchmark traffic volume conditions for the future study year 2013. Although the annual growth factor is expected to fully represent all potential area traffic increases, for the purposes of conservative analysis, traffic generated from other nearby development projects was also evaluated for possible inclusion in the estimates of the future "Without Project" traffic conditions.

Ambient Traffic Growth

Based on traffic growth trends in the City of Carson and the surrounding project vicinity area over the last several years, the City's traffic engineer has determined that an annual traffic growth factor of approximately 1.0 percent, inclusive of both general ambient growth and traffic from cumulative area development, is appropriate for use in this study. This annual "ambient traffic growth factor" is used to account for expected increases in traffic resulting from general traffic growth in the study vicinity due to ongoing regional population growth, or from potential development projects not yet proposed or outside of the study area. Therefore, the ambient traffic growth factor, compounded annually, was applied to the existing 2011 traffic volumes to develop the traffic volume estimates for the future year 2013 benchmark conditions.

Related Projects

In addition to the 1.0 percent annual ambient traffic growth rate, a review of other proposed or ongoing development projects located within the study area, defined as an approximately 1-mile radius from the project site, was conducted to determine whether any other nearby projects would be completed within the study timeframe which could add traffic to any or all of the selected study intersections. However, based on information provided by the City's traffic engineer, there are no such "related project" developments located within the study area that would be expected to be completed by the year 2013. As such, no additional traffic beyond the assumed 1.0 percent annual ambient traffic growth factor described above is anticipated, and the annual ambient traffic growth factor was assumed to fully reflect all anticipated area traffic growth within the study period, including traffic due to any as-yet unidentified projects.

Therefore, the “Future (2013) Without Project” condition traffic volumes for this analysis were developed by applying the assumed 1.0 percent annual ambient traffic growth in the area, which includes traffic generated by any potential but currently unidentified cumulative development in the vicinity of the project site, to the “Existing (2011)” traffic volumes identified earlier in this report in Figures 13(a) and 13(b). The resulting “Future (2013) Without Project” traffic estimates at each of the five study intersections are shown in Figure 15(a) for the AM peak hour conditions and in Figure 15(b) for the PM peak hour conditions. As described earlier, the values shown in Figures 15(a) and 15(b) represent the anticipated traffic volumes in the project vicinity prior to the development of the proposed project, and form the benchmark values for determining and evaluating the project’s potential traffic impacts on the area’s future street system.

Finally, the net project AM and PM peak hour traffic volumes shown previously in Figure 8(a) and Figure 8(b), respectively, were combined with these forecast future “Without Project” benchmark volumes to produce the “Future (2013) With Project" traffic volume estimates, representing the anticipated traffic volumes at each of the five study intersections following the development and occupancy of the proposed project, as shown in Figure 16(a) for the AM peak hour conditions, and in Figure 16(b) for the PM peak hour conditions. These future year (2013) “Without Project” and “With Project” traffic volume forecasts were used to identify the incremental traffic impacts attributable to the development of the proposed project at the time of its expected completion and occupancy, as described in detail in the next section of this report.

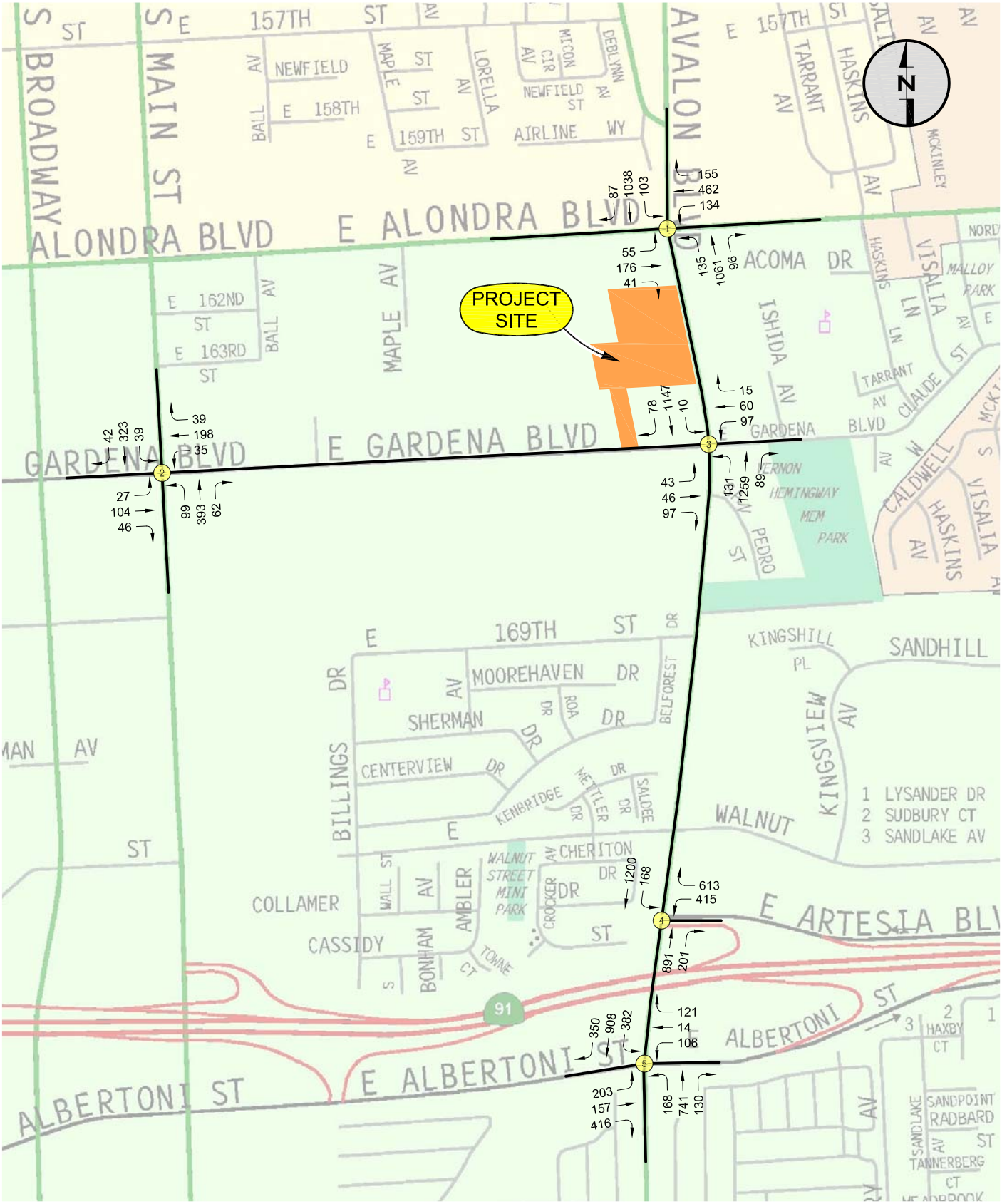


FIGURE 15(a)

HIRSCH GREEN
Hirsch/Green Transportation Consulting, Inc.

FUTURE (2013) TRAFFIC VOLUMES
WITHOUT PROJECT
AM PEAK HOUR

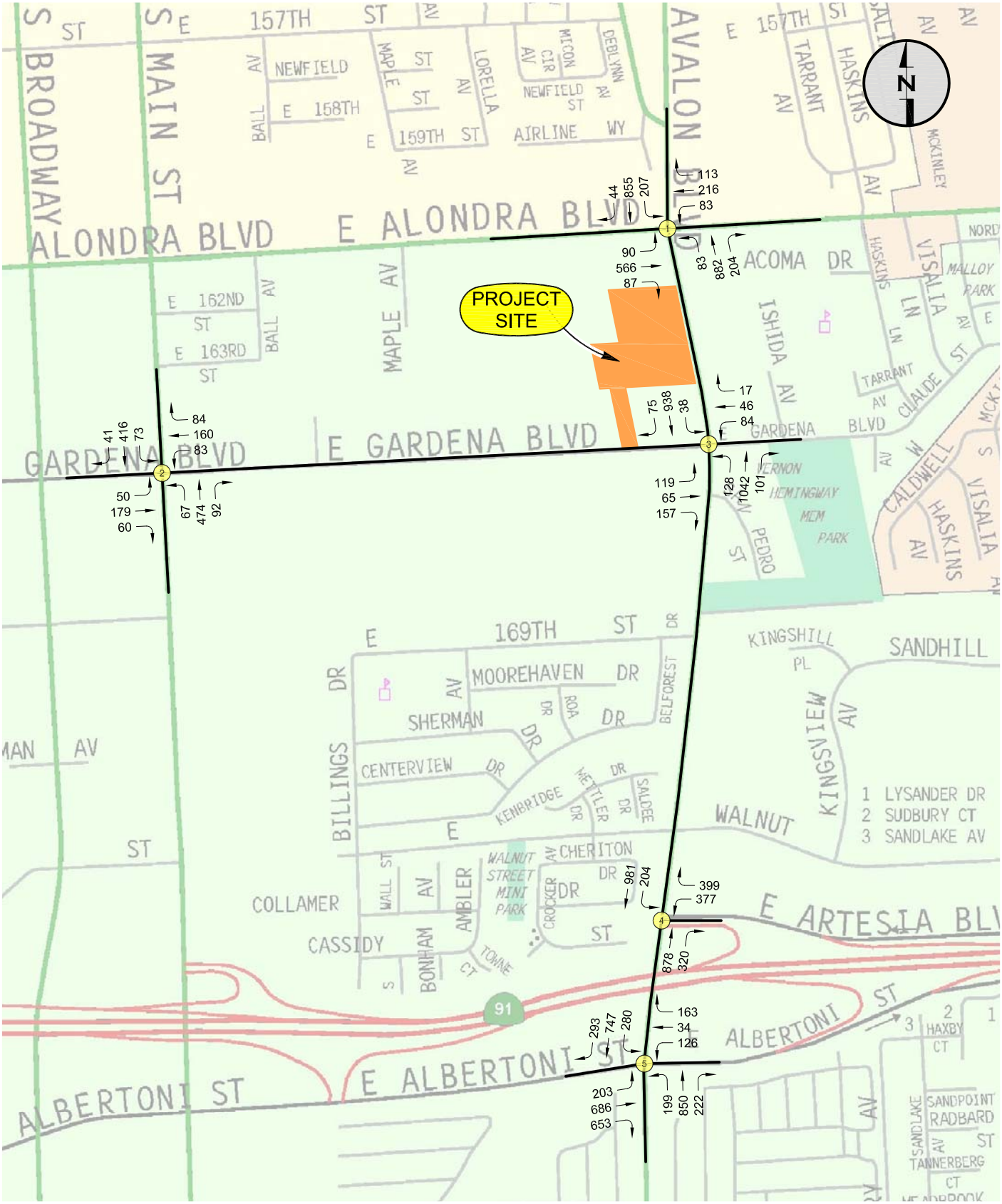


FIGURE 15(b)

HIRSCH GREEN
Hirsch/Green Transportation Consulting, Inc.

FUTURE (2013) TRAFFIC VOLUMES
WITHOUT PROJECT
PM PEAK HOUR

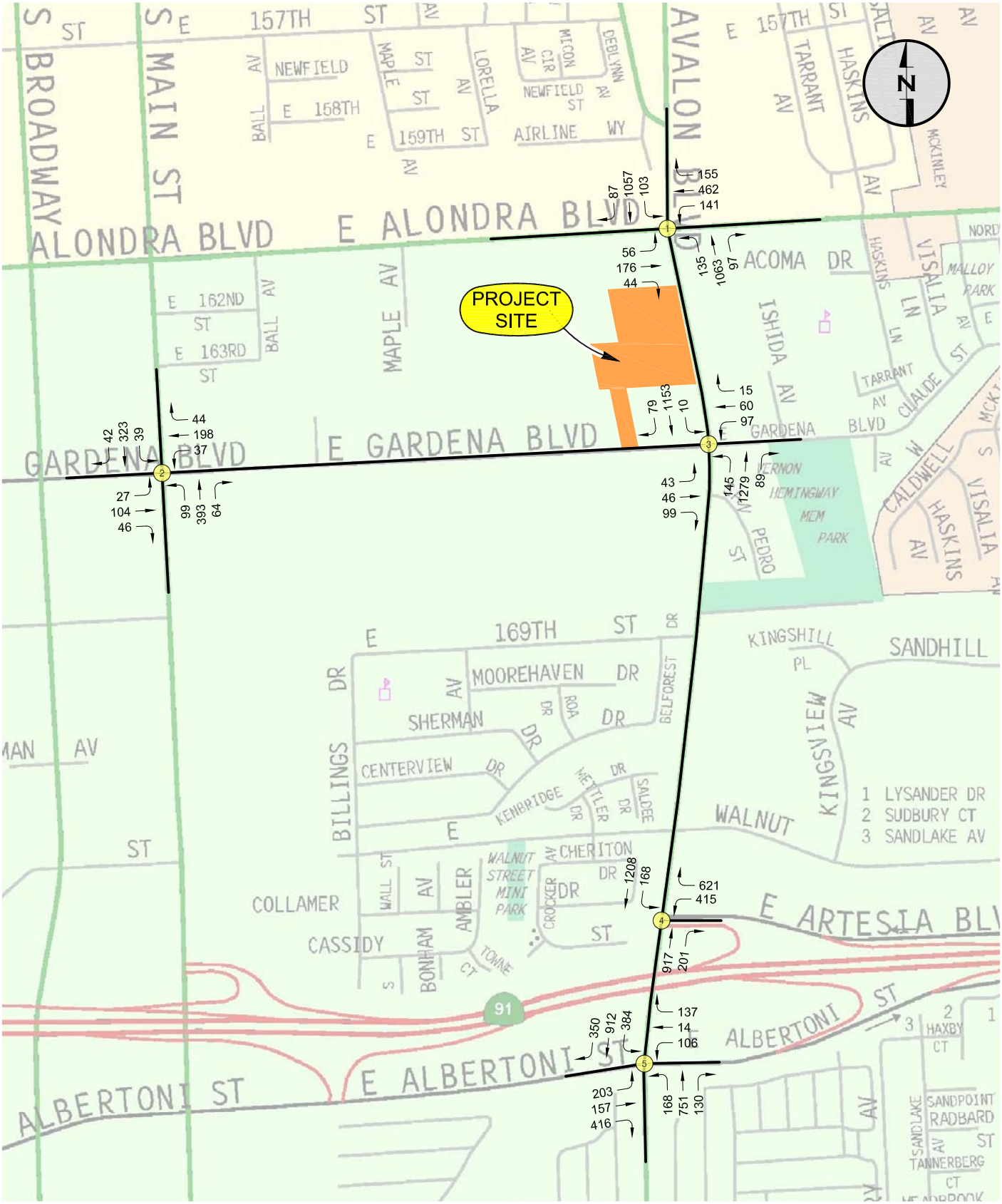


FIGURE 16(a)

HIRSCH GREEN
Hirsch/Green Transportation Consulting, Inc.

FUTURE (2013) TRAFFIC VOLUMES
WITH PROJECT
AM PEAK HOUR

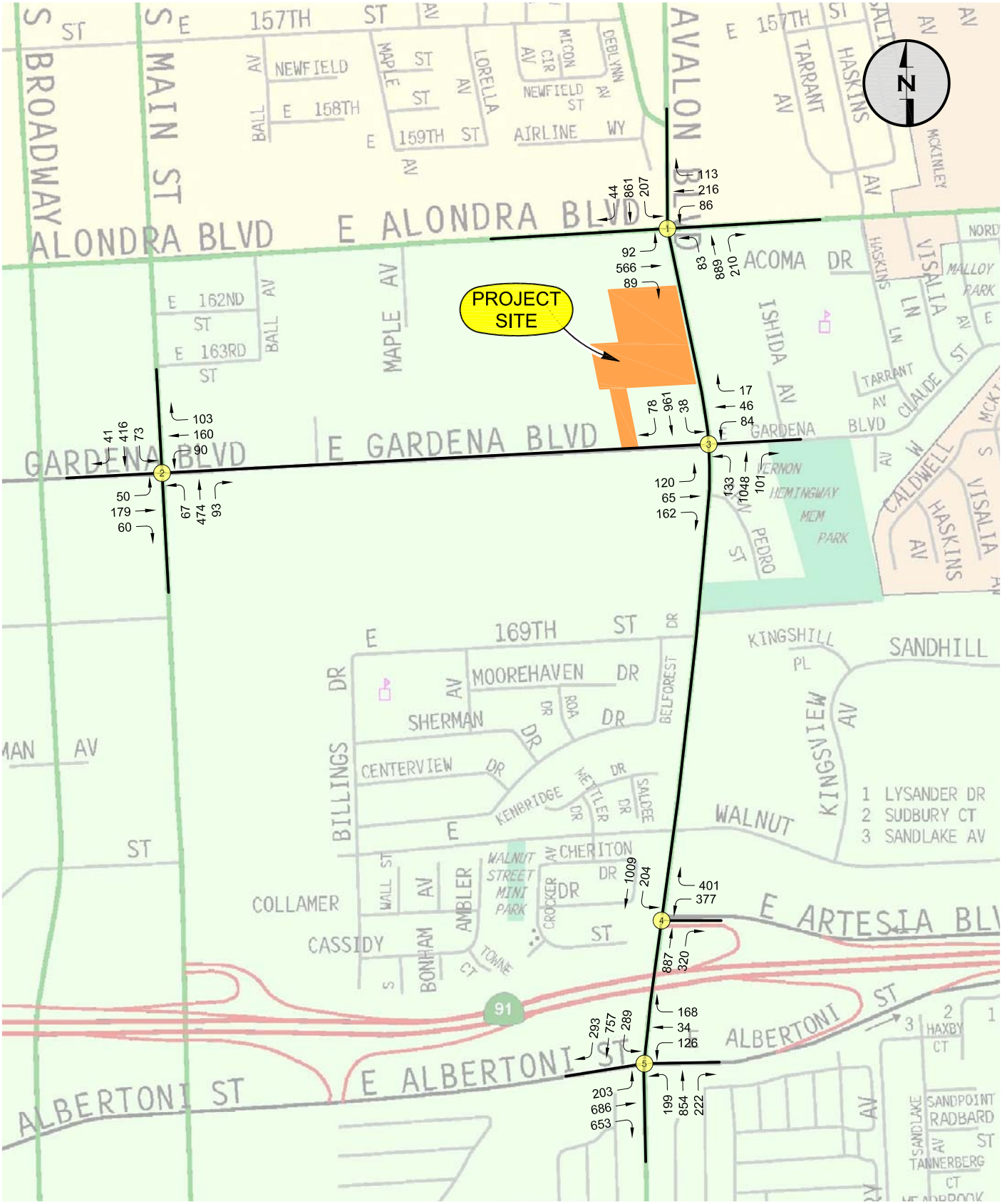


FIGURE 16(b)

HIRSCH GREEN
Hirsch/Green Transportation Consulting, Inc.

FUTURE (2013) TRAFFIC VOLUMES
WITH PROJECT
PM PEAK HOUR

ANALYSIS OF AREA TRAFFIC CONDITIONS

Detailed analyses of the existing (year 2011) and forecast future (year 2013) traffic conditions in the project vicinity were performed at a total of five signalized intersections, all located within the City of Carson, and adjacent to or in the immediate vicinity of the proposed project. These intersections, listed below, provide either direct access to the project site, or are located along primary travel routes to and from the site, and are therefore the locations considered most likely to be affected by traffic generated by the proposed project:

1. Avalon Boulevard and Alondra Boulevard
2. Main Street and Gardena Boulevard
3. Avalon Boulevard and Gardena Boulevard
4. Avalon Boulevard and SR-91 Freeway Westbound On/Off-Ramps/Artesia Boulevard
5. Avalon Boulevard and Albertoni Street/SR-91 Freeway Eastbound On/Off-Ramps

Existing Highway System Improvements

Each of the study intersections listed above are currently signalized, with the intersections of Main Street and Gardena Boulevard, and Avalon Boulevard and Gardena Boulevard exhibiting simple, two-phase signal operations, although the intersections of Avalon Boulevard and Alondra Boulevard, Avalon Boulevard and SR-91 Freeway Westbound On/Off-Ramps, and Avalon Boulevard and Albertoni Street operate with multiple phasing operations, including separate or "lead/lag" left-turn phases to accommodate heavier left-turn demands. All of the signals in the study area are interconnected, but operate on pre-timed or semi-actuated controllers, and do not provide any advanced signal synchronization or coordination protocols, such as the adjacent City of Los Angeles Department of Transportation's ("LADOT") Automated Traffic Surveillance and Control ("ATSAC") or next-generation Adaptive Traffic Control System ("ATCS") signal synchronization systems.

Ongoing or Programmed Future Highway System Improvements

No significant highway improvements within the study area were identified by the City traffic engineer for implementation by the anticipated 2013 completion date of the proposed project. Therefore, the analysis of the forecast year 2013 conditions conservatively assumed that the future roadway network, including intersection geometries and capacities, would remain unchanged from those used in the analysis of the "Existing (2011)" traffic conditions.

Analysis Methodology and Results

This study utilizes the Critical Movement Analysis ("CMA") methodology for the analysis and evaluation of traffic operations at signalized intersections, as detailed in Circular Number 212 published by the Transportation Research Board ("TRB").[2] This analysis technique describes the operating characteristics of an intersection in terms of the "Level of Service", based on intersection traffic volume and other variables such as number and type of signal phasing, lane geometries, and other factors which determine both the quantity of traffic that can move through an intersection ("Capacity") and the quality of that traffic flow ("Level of Service").

"Capacity" represents the maximum total hourly volume of vehicles in the critical lanes which has a reasonable expectation of passing through an intersection under prevailing roadway and traffic conditions. Critical lanes are defined generally as those intersection movement or groups of movements which exhibit the highest "per lane" volumes, thus defining the maximum amount of vehicles attempting to negotiate through the intersection during a specific time period. The capacity of an intersection also varies based on the number of signal phases for the location; more signal phases generally result in more "lost" or "start up" time, as vehicles exhibit slight driver reaction delays when signal indications change from "red" to "green". Additional signal phases introduce more signal indication changes, creating more opportunities for lost time during the signal cycle, and reducing the efficiency and thus the capacity of an intersection.

For the CMA methodology, the intersection capacities for various levels of service are based on the number of traffic signal phases, as shown in Table 4. For the intersection evaluation and transportation planning purposes of this traffic study, the CMA methodology typically equates the maximum "baseline" capacity of an intersection to the value of Level of Service ("LOS") E shown in Table 4. This value represents the highest volume of traffic that can be adequately accommodated through urban area intersections without a breakdown in operations, resulting in unstable traffic flows, high levels of congestion, and long delays.

The "Critical Movement" indices at an intersection are determined by first identifying the sum of the critical lane traffic volumes at the intersection. This traffic *volume* value, which represents the total traffic volumes traveling through the most critical intersection movements for each of the intersection's approaches, is then divided by the appropriate intersection *capacity* value (from Table 4) for the type of signal control at the intersection, to determine the "CMA value" for the intersection, which is roughly equivalent to its volume-to-capacity ratio.

[2] Interim Materials on Highway Capacity, Circular Number 212, Transportation Research Board, Washington, D.C., 1980.

Table 4
Critical Movement Analysis (CMA)
Volume Ranges per Level of Service *

Level of Service	Maximum Sum of Critical Volumes (VPH) vs. Number of Signal Phases: Two Phases	Three Phases	Four or More Phases
A	900	855	825
B	1,050	1,000	965
C	1,200	1,140	1,100
D	1,350	1,275	1,225
E	1,500	1,425	1,375
F	- - - - - - - - - - Not Applicable - - - - - - - - - -		

* For planning applications only. Not appropriate for operations/design applications.

"Level of Service" ("LOS") describes the quality of traffic flow through the intersection. LOS A through LOS C exhibit good traffic flow characteristics, with little congestion. LOS D is typically the level for which metropolitan area street systems are designed, and represents the highest level of acceptable congestion and delay. LOS E defines conditions at or near the capacity of an intersection, and is characterized by short-duration stoppages and unstable traffic flows at its upper range. LOS F occurs when a facility is overloaded, and is characterized by stop-and-go traffic with long duration delays. Note that the LOS definitions do not represent a single operating condition, but rather correspond to a range of CMA values, as shown in Table 5.

Table 5
Level of Service (LOS) as a Function of CMA Value

CMA Value	LOS	Intersection Operation/Traffic Flow Characteristics
$\leq$ 0.600	A	No congestion; all vehicles clear in a single cycle.
> 0.600 $\leq$ 0.700	B	Minimal congestion; all vehicles still clear in a single cycle.
> 0.700 $\leq$ 0.800	C	No major congestion; most vehicles clear in a single cycle.
> 0.800 $\leq$ 0.900	D	Generally uncongested, but vehicles may wait through more than one cycle; short duration queues may form on critical approaches.
>0.900 $\leq$ 1.000	E	Increased congestion on critical approaches; long duration queues form at higher end of range.
> 1.000	F	Over capacity; forced flow with long periods of congestion; substantial queues form.

Using the procedures described above, the CMA value and corresponding LOS for each of the five study intersections were calculated for each of the traffic scenarios described earlier; "Existing (2011)" (no project), "Existing (2011) With Project", "Future (2013) Without Project", and "Future (2013) With Project". The incremental project-related impacts at each of the study intersections were then determined by comparing the results of the analysis of the "without project" conditions to those of the "with project" conditions for both the existing (year 2011) and forecast future (year 2013) evaluation scenarios at each location; specifically, the "Existing (2011) With Project" analysis results were compared against the results of the evaluation of the "Existing (2011)" (no project) traffic conditions to identify the project-specific traffic impacts under current traffic conditions. Similarly, the results of the "Future (2013) With Project" analysis were compared to the results of the "Future (2013) Without Project" traffic conditions analyses, to determine the incremental project-related impacts to the study area roadway network under the forecast future traffic scenarios. The results of these analyses, including the without project and with project intersection operational levels, as well as the incremental project-related impacts for the AM and PM peak hours at each of the study intersections for both the existing (year 2011) and forecast future (year 2013) conditions, are summarized in Table 6.

Existing (2011) Conditions

As shown in Table 6, all of the study intersections currently exhibit acceptable levels of service for urban conditions (LOS A through D) during both the AM and PM peak hours, with only the intersection of Avalon Boulevard and Albertoni Street/SR-91 Freeway Eastbound Ramps operating at higher than LOS B operations (at LOS C during the PM peak hour). As also shown in Table 6, while development of the proposed project and the addition of its associated traffic is expected to result in incremental increases in the CMA values at each of the study intersections to varying degrees, depending upon the intersection's proximity to the project site, its location along the anticipated project traffic travel routes, or the specific geometries and/or operating characteristics of the intersection, these incremental increases will be relatively minor. Table 6 also shows that the proposed project is not anticipated to change the current operating conditions (LOS) at any of the study intersections during either the AM or PM peak hours.

Future (2013) Conditions

As further indicated in Table 6, anticipated ambient traffic growth within the study area, including traffic increases from area development (not including the proposed project) is expected to result in worsening traffic conditions at all of the study intersections by the year 2013. However,

Table 6
Critical Movement Analysis Summary
Existing (2011) and Future (2013) Without and With Project Conditions

Int. No.	Intersection	Peak Hour	Year 2011 Conditions: Existing (No Project) CMA	LOS	Existing Plus Project CMA	LOS	Impact	Year 2013 Conditions: Without Project CMA	LOS	With Project CMA	LOS	Impact
1	Avalon Boulevard	AM	0.550	A	0.559	A	0.009	0.561	A	0.570	A	0.009
	and Alondra Boulevard	PM	0.620	B	0.638	B	0.018	0.633	B	0.641	B	0.008
2	Main Street	AM	0.279	A	0.281	A	0.002	0.284	A	0.287	A	0.003
	and Gardena Boulevard	PM	0.365	A	0.371	A	0.006	0.373	A	0.379	A	0.006
3	Avalon Boulevard	AM	0.445	A	0.466	A	0.021	0.455	A	0.476	A	0.021
	and Gardena Boulevard	PM	0.420	A	0.434	A	0.014	0.429	A	0.442	A	0.013
4	Avalon Boulevard	AM	0.499	A	0.509	A	0.010	0.509	A	0.519	A	0.010
	and SR-91 WB Off-Ramp/Artesia Boulevard	PM	0.444	A	0.452	A	0.008	0.453	A	0.460	A	0.007
5	Avalon Boulevard	AM	0.635	B	0.641	B	0.006	0.648	B	0.655	B	0.007
	and Albertoni Street/SR-91 EB Ramps	PM	0.784	C	0.793	C	0.009	0.799	C	0.809	D	0.010

Notes:

"*" Indicates significant impact per City of Carson criteria (CMA increase of +0.020 at LOS E/F).

each of the five study locations are forecast to continue to exhibit acceptable LOS D or better operations during both the AM and PM peak hours under the anticipated future "Without Project" scenario, again with all intersections exhibiting LOS B or better conditions with the exception of the intersection of Avalon Boulevard and Albertoni Street/SR-91 Freeway Eastbound Ramps, which will continue to operate at LOS C during the PM peak hour.

Once developed, traffic generated by the proposed project will add to the expected cumulative traffic increases in the study area resulting from both ambient traffic growth and ongoing development, which could further affect the future operations of the study intersections. As again shown in Table 6, the project would result in only nominal increases in the forecast future (year 2013) CMA values at each of the five study intersections, and with one exception, would not be expected to result in any changes in the forecast future levels of service. However, during the PM peak hour, the project's incremental traffic additions could result in a change in the level of service at the intersection of Avalon Boulevard and Albertoni Street/SR-91 Freeway Eastbound Ramps from very high LOS C (CMA = 0.799) to low LOS D (CMA = 0.809), although this intersection would continue to exhibit acceptable operating conditions (LOS D or better) under the "Future (2013) With Project" scenario.

Intersection Impact Significance Criteria

However, changes to an intersection's level of service are not the sole standard for evaluating the "significance" of a project's incremental impacts. The City of Carson defines a significant traffic impact attributable to a project as an increase in an intersection's CMA value, due to project-related traffic, of 0.020 or more when the final ("With Project") Level of Service is E or F. No significant impacts are deemed to occur at intersections exhibiting LOS A through LOS D, as these operating conditions exhibit sufficient surplus capacities to accommodate traffic increases with little effect on traffic operations or vehicle delays.

As such, using the impact evaluation criteria noted above, despite the potential change in the level of service at Avalon Boulevard and Albertoni Street/SR-91 Freeway Eastbound Ramps, the project's incremental traffic impacts summarized in Table 6 are not considered to be "significant" at any of the five signalized study intersections under either the "existing" year 2011 or forecast future year 2013 conditions during either the AM or PM peak hours. Therefore, based on the results of this analysis, no immediate ("Existing With Project") or long-term ("Future With Project") project-related traffic impacts are expected to occur at any of the study intersections, and as such, no off-site project traffic mitigation measures are warranted.

Project Impacts on Regional Transportation System

To address the increasing public concern that traffic congestion was impacting the quality of life and economic vitality of the State of California, the Los Angeles County Congestion Management Program ("CMP")[3] was enacted to provide the analytical basis for transportation decisions through the State Transportation Improvement Program ("STIP") process. A countywide approach has been established by the Los Angeles County Metropolitan Transportation Authority ("Metro"), the local CMP agency, to implement the statutory requirements of the CMP. The countywide approach includes designating a highway network that includes all state highways and principal arterials within the County and monitoring the network's Level of Service standards.

The CMP project traffic impact analysis ("TIA") guidelines require analyses of all CMP monitoring intersections where the project could add a total of 50 or more trips during either the AM or PM peak hour on weekdays. Additionally, all freeway segments where a project could add 150 or more trips in either direction during the weekday peak hours must be analyzed.

CMP Monitoring Intersection Impacts

The current (2010) CMP identifies only one arterial monitoring intersection within a two-mile radius of the project site, Artesia Boulevard and Vermont Avenue, although this intersection is located outside the study area, and is expected to be beyond the range of potential project traffic impacts, especially considering that none of the project-proximate study intersections examined in detail in the preceding analyses will be significantly impacted.

The CMP requires that detailed analyses be conducted for any location where the proposed project is anticipated to add 50 or more total trips (sum of all directions) during either the AM or PM peak hours of a typical weekday. Based on a review of the project's anticipated geographic trip distributions, shown previously in Figures 4(a) and 4(b) for the project's passenger vehicle and truck component trips, respectively, approximately 10 percent of the project's passenger vehicle trips, and approximately five percent of its truck trips, are anticipated to travel to and from the west of the study area via Artesia Boulevard and/or the Artesia/Gardena Freeway, and would be expected to pass through the subject CMP arterial monitoring intersection. Using these project component trip distribution percentages, coupled with the project's net project traffic additions, identified earlier in Table 2, the number of project-related trips through the intersection of Artesia Boulevard and Vermont Avenue were calculated.

[3] *2010Congestion Management Program for Los Angeles County*, Los Angeles County Metropolitan Transportation Authority, Los Angeles, 2010.

As shown previously in Table 2, the proposed project is expected to generate approximately 104 passenger vehicle trips (82 inbound and 22 outbound) and 52 PCE truck trips (41 inbound and 11 outbound) during the AM peak hour, as well as approximately 82 passenger vehicle trips (20 inbound and 62 outbound) and 40 PCE truck trips (10 inbound and 30 outbound) during the PM peak hour. Therefore, using the appropriate traffic component distribution percentages, the project would potentially add approximately eight inbound (eastbound) passenger vehicle trips (82 inbound trips times 10 percent) and two inbound PCE truck trips (41 inbound trips times five percent) through the intersection of Artesia Boulevard and Vermont Avenue, plus an additional two outbound (westbound) passenger vehicle trips (22 outbound trips times 10 percent) and one outbound PCE truck trip (11 outbound trips times five percent, rounded up to the nearest whole number) during the AM peak hour, for a total project-related traffic increase at this intersection of approximately 13 PCE trips during this time period.

Similarly, during the PM peak hour, the proposed project could be anticipated to add a maximum of approximately two inbound (eastbound) passenger vehicle trips (20 inbound trips times 10 percent) and one inbound PCE truck trip (10 inbound trips times five percent, rounded up to the nearest whole number), plus six additional outbound (westbound) passenger vehicle trips (62 outbound trips times 10 percent) and two outbound PCE truck trips (30 outbound trips times five percent, rounded up), or a total of approximately 11 PCE project-related trips traveling through the CMP arterial monitoring intersection of Artesia Boulevard and Vermont Avenue.

Therefore, the total project-related trip additions at the only CMP arterial monitoring intersection in the project vicinity are expected to be well below the CMP's minimum 50-trip threshold during the typical weekday AM and PM peak hours. As a result, no significant impacts are anticipated at this intersection, and no further analyses are warranted.

CMP Freeway Segment Impacts

An examination was also made of the potential for project-related freeway impacts within the project study area. As described earlier, the CMP requires a detailed impact analysis of freeway mainline segments where a project could increase weekday peak hour traffic by 150 or more vehicles per hour in either direction. As shown in Table 2, the project is expected to generate fewer than 150 net new directional trips during both peak hours, with a maximum of 123 inbound PCE trips during the AM peak hour and a maximum of 92 outbound PCE trips during the PM peak hour. As a result, even if all of this traffic were assigned to the area freeways, the project's incremental trip additions will be less than the CMP's 150-trip threshold.

However, as shown in previous Figures 4(a) and 4(b), only a fraction of the project's trips are expected to use either the Harbor Freeway or Artesia/Gardena Freeway as travel routes, with a maximum of approximately 10 percent of the passenger vehicle trips (Harbor Freeway north of Redondo Beach Boulevard, and Artesia/Gardena Freeway west of Avalon Boulevard) and a maximum of approximately 25 percent of the truck trips (Harbor Freeway, both north and south of the project vicinity). As a result, the net directional peak hour project trip additions to any segment of either of these regional transportation facilities would be expected to be fewer than 25 vehicles during either peak hour. These nominal potential project traffic additions are substantially below the CMP's 150-trip threshold for detailed analyses, and are not expected to produce any measurable effects on any of the regional transportation facilities. Therefore, no further analysis of project-related traffic impacts to the area freeways is warranted.

Transit Impacts

As described earlier in this report, in order to present the most conservative analysis of the potential traffic impacts of the project to the nearby study intersections, no significant additional use of public transportation by project employees or visitors beyond that intrinsically included in the ITE trip generation rates was assumed. However, for purposes of assessing potential project-related impacts to the area transit system, it was assumed that up to 10 percent of the total employee and/or visitor trips (passenger vehicle trips only) to and from the proposed project could utilize the convenient bus service serving the site; no transit use was assumed to be associated with the project's truck-related trips.

Using this conservative assumption, the number of project trips that may potentially travel to and from the project via the existing transit services was calculated. Based on this methodology, it was estimated that approximately 81 daily project-related passenger vehicle trips, including approximately 10 trips (eight inbound and two outbound) during the AM peak hour, and approximately eight trips (two inbound and six outbound) during the PM peak hour would actually occur on the area transit facilities rather than in privately-owned vehicles. Applying a typical vehicle occupancy ratio of approximately 1.2 persons per vehicle, and assuming that the entire project-related transit utilization would occur due to new bus ridership (since the site is currently undeveloped, there are no current site-related transit riders), this assumption results in a maximum project-related increase in transit ridership of approximately 97 persons per day, including approximately 12 persons (10 inbound and two outbound) during the AM peak hour, and approximately 10 persons (three inbound and seven outbound) during the PM peak hour.

Although bus utilization in the project vicinity can be heavy during the peak weekday commute periods, this nominal level of new rider demand would be expected to be divided among the four existing bus lines described previously providing direct or convenient service to the site. Further, with each of these bus lines providing several buses per hour during the peak commute periods, increased ridership on any single bus would be expected to be nominal. Therefore, the project is not expected to result in significant transit-related impacts to the existing bus service in the area, and no mitigation measures in this regard are warranted.

MITIGATION MEASURES

The results of the analyses documented in this report indicate that the 230,000 square foot industrial/warehouse development proposed at 16325 Avalon Boulevard in the City of Carson will be a relatively nominal trip generator, and is not expected to result in significant traffic impacts at any of the five intersections analyzed in detail in this study under either the near-term "Existing (2011) With Project" or forecast "Future (2013) With Project" scenarios. Additionally, the proposed project will not generate sufficient new traffic to significantly impact any of the CMP arterial monitoring intersections or freeway segments in the project vicinity, and potential new public transit ridership due to the proposed project is expected to be nominal, and no significant transit-related impacts are anticipated.

The project will provide a total of approximately 230 on-site passenger vehicle parking spaces, which are approximately 13 spaces more than are required, as well as the required on-site truck staging/parking areas, and as such, no on-site parking shortages or "spill over" into adjacent commercial streets or parking areas is anticipated. The project will be accessed by a total of four driveways, including three along Avalon Boulevard and one on Gardena Boulevard, which will provide more than adequate entry and exit capacity for the site, although the "middle" driveway along Avalon Boulevard driveway will not provide adequate driveway width or drive aisle maneuvering space to accommodate semi-trailer truck traffic, and truck usage of this driveway will be prohibited. Additionally, in order to maximize the efficiency of the on-site traffic operations, the internal site truck circulation will be restricted to westbound-only (entering truck trips) along the north drive aisle, and eastbound-only (exiting truck trips) along the southern drive aisle; truck movements on the western side of the project site (to and from the truck docks) and through the flag lot access road will, however, continue to provide two-way circulation. The proposed internal vehicular circulation operations and parking layout is typical of such developments, and are expected to operate acceptably.

Therefore, based on the results of the traffic and parking impact analyses summarized in this report, the project will not create any significant traffic-related impacts, and will provide adequate parking and vehicular access and circulation, and as such, no off-site traffic or parking mitigation measures are warranted.

APPENDICES

APPENDIX A

INTERSECTION GEOMETRICS/CONTROLS AND TRAFFIC COUNT DATA SHEETS

AVALON-ALONDRA (CARSON) \ LANE-CONFIGS

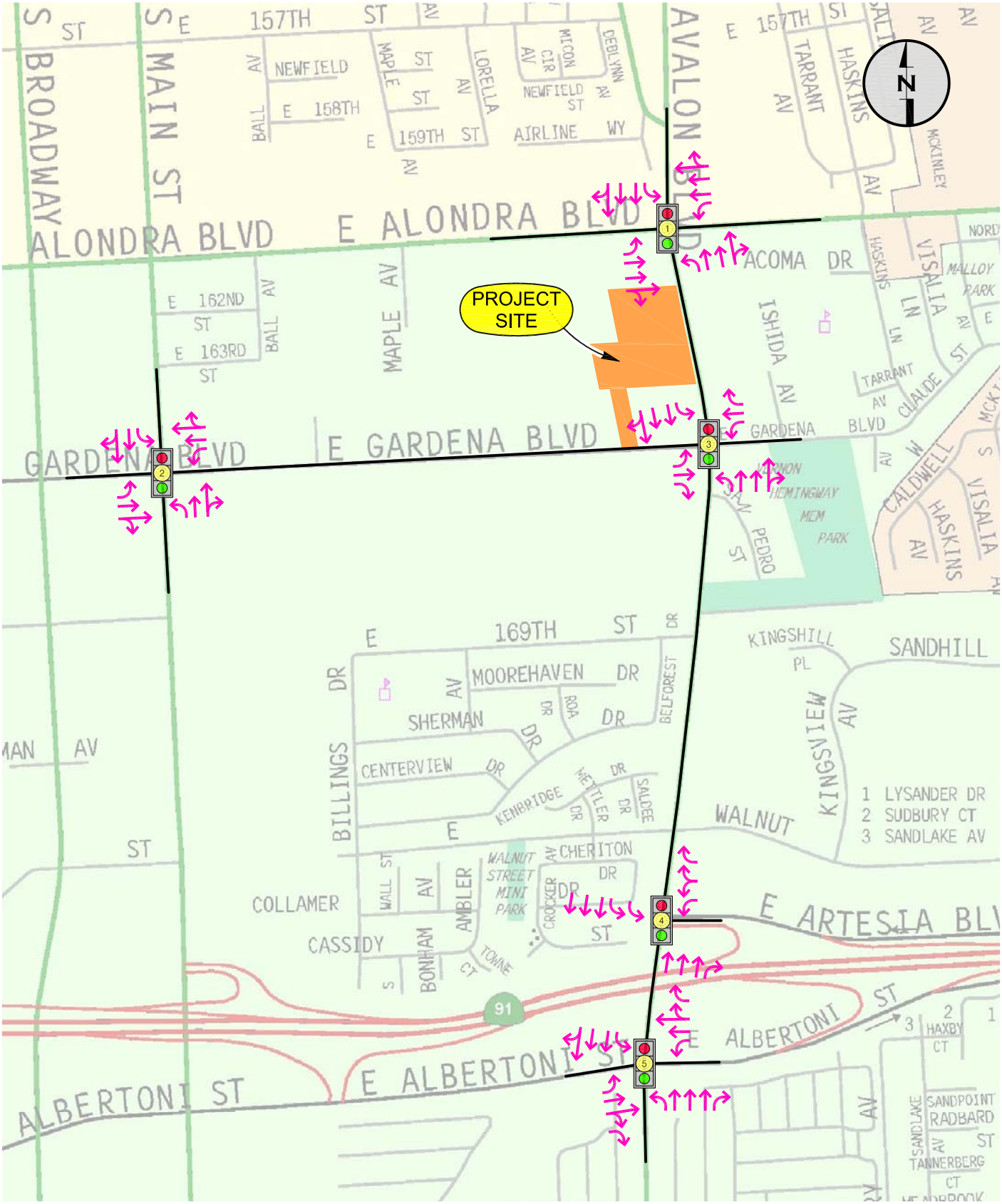


FIGURE A-1

11/10/2011

HIRSCH GREEN
Hirsch/Green Transportation Consulting, Inc.

STUDY INTERSECTION LANE CONFIGURATIONS AND CONTROLS

Intersection Counts

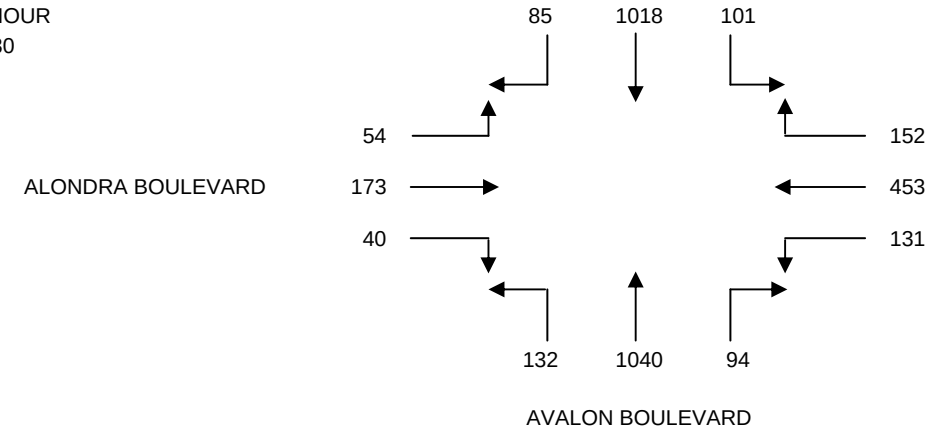
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: HIRSCH/GREEN TRANSPORTATION CONSULTING, INC.
PROJECT: 16325 AVALON BOULEVARD - CARSON
DATE: THURSDAY OCTOBER 27, 2011
PERIOD: 07:00 AM TO 10:00 AM
INTERSECTION N/S AVALON BOULEVARD
E/W ALONDRA BOULEVARD
FILE NUMBER: 1-AM

15 MINUTE TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT
0700-0715	23	118	16	28	92	13	10	164	22	6	32	5
0715-0730	20	114	20	36	138	28	15	243	33	8	23	7
0730-0745	18	242	22	40	149	34	22	257	34	5	30	19
0745-0800	21	198	25	38	124	37	29	304	42	8	46	16
0800-0815	25	316	31	38	93	29	26	251	33	18	46	10
0815-0830	21	262	23	36	87	31	17	228	23	9	51	9
0830-0845	14	197	19	21	84	19	11	168	15	10	40	20
0845-0900	17	211	24	23	72	23	10	183	14	12	28	12
0900-0915	6	172	16	20	47	18	16	136	12	9	31	19
0915-0930	10	184	21	24	56	10	19	125	15	9	31	7
0930-0945	6	191	15	14	58	16	18	129	13	15	22	6
0945-1000	5	188	21	13	44	13	16	105	18	15	19	14

1 HOUR TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
0700-0800	82	672	83	142	503	112	76	968	131	27	131	47	2974
0715-0815	84	870	98	152	504	128	92	1055	142	39	145	52	3361
0730-0830	85	1018	101	152	453	131	94	1040	132	40	173	54	3473
0745-0845	81	973	98	133	388	116	83	951	113	45	183	55	3219
0800-0900	77	986	97	118	336	102	64	830	85	49	165	51	2960
0815-0915	58	842	82	100	290	91	54	715	64	40	150	60	2546
0830-0930	47	764	80	88	259	70	56	612	56	40	130	58	2260
0845-0945	39	758	76	81	233	67	63	573	54	45	112	44	2145
0900-1000	27	735	73	71	205	57	69	495	58	48	103	46	1987

A.M. PEAK HOUR
0730-0830



DATA PROVIDED BY:

QUALITY TRAFFIC DATA, LLC
9701 W. PICO BOULEVARD, SUITE 205
LOS ANGELES, CALIFORNIA 90035
PH: 310-341-0019
FAX: 310-807-9247
INFO@QUALITYTRAFFICDATA.COM

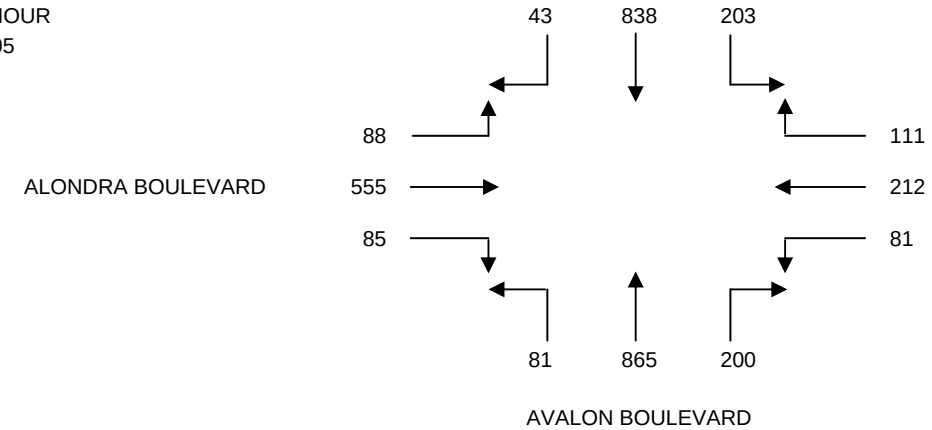
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: HIRSCH/GREEN TRANSPORTATION CONSULTING, INC.
PROJECT: 16325 AVALON BOULEVARD - CARSON
DATE: THURSDAY OCTOBER 27, 2011
PERIOD: 03:00 PM TO 06:00 PM
INTERSECTION N/S AVALON BOULEVARD
E/W ALONDRA BOULEVARD
FILE NUMBER: 1-PM

15 MINUTE TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT
0300-0315	9	155	38	24	41	19	33	214	19	20	79	17
0315-0330	10	171	28	15	57	22	38	238	14	15	75	14
0330-0345	11	159	34	39	65	20	31	174	23	31	106	30
0345-0400	15	165	39	30	60	19	33	189	24	20	104	13
0400-0415	9	181	54	27	56	20	42	183	21	21	157	25
0415-0430	13	194	51	35	50	23	38	189	15	14	105	18
0430-0445	8	226	64	21	62	20	60	179	17	24	126	14
0445-0500	12	185	55	27	56	27	36	198	14	17	115	17
0500-0515	17	232	52	32	62	16	54	177	25	25	154	36
0515-0530	7	214	57	27	46	24	43	223	18	18	138	20
0530-0545	7	207	39	25	48	14	67	267	24	25	148	15
0545-0600	12	196	44	21	60	23	40	164	14	18	98	10

1 HOUR TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
0300-0400	45	650	139	108	223	80	135	815	80	86	364	74	2799
0315-0415	45	676	155	111	238	81	144	784	82	87	442	82	2927
0330-0430	48	699	178	131	231	82	144	735	83	86	472	86	2975
0345-0445	45	766	208	113	228	82	173	740	77	79	492	70	3073
0400-0500	42	786	224	110	224	90	176	749	67	76	503	74	3121
0415-0515	50	837	222	115	230	86	188	743	71	80	500	85	3207
0430-0530	44	857	228	107	226	87	193	777	74	84	533	87	3297
0445-0505	43	838	203	111	212	81	200	865	81	85	555	88	3362
0500-0600	43	849	192	105	216	77	204	831	81	86	538	81	3303

P.M. PEAK HOUR
0445-0505



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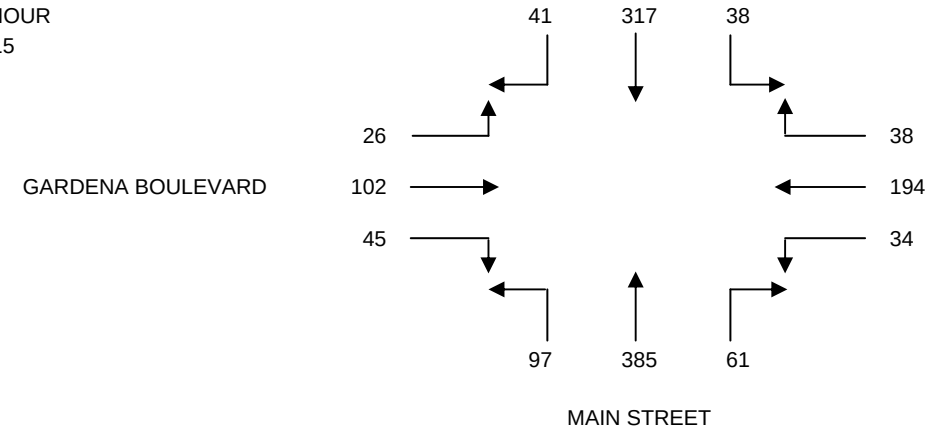
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: HIRSCH/GREEN TRANSPORTATION CONSULTING, INC.
PROJECT: 16325 AVALON BOULEVARD - CARSON
DATE: WEDNESDAY OCTOBER 26, 2011
PERIOD: 07:00 AM TO 10:00 AM
INTERSECTION N/S MAIN STREET
E/W GARDENA BOULEVARD
FILE NUMBER: 2-AM

15 MINUTE TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT
0700-0715	10	62	1	3	34	8	8	60	15	5	7	7
0715-0730	13	77	5	7	56	5	16	78	33	2	13	3
0730-0745	7	90	7	17	51	14	12	67	21	12	22	3
0745-0800	10	77	13	8	38	6	17	128	23	17	37	11
0800-0815	11	73	13	6	49	9	16	112	20	14	30	9
0815-0830	5	81	15	2	25	9	9	83	15	9	16	2
0830-0845	5	55	6	4	27	8	16	92	17	8	14	9
0845-0900	6	74	5	9	32	8	19	88	11	4	25	10
0900-0915	6	55	7	4	25	4	11	85	13	11	24	5
0915-0930	1	49	15	6	18	5	12	66	15	9	21	5
0930-0945	6	52	9	5	22	7	14	77	12	11	20	5
0945-1000	8	51	5	5	20	9	7	63	8	6	16	8

1 HOUR TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
0700-0800	40	306	26	35	179	33	53	333	92	36	79	24	1236
0715-0815	41	317	38	38	194	34	61	385	97	45	102	26	1378
0730-0830	33	321	48	33	163	38	54	390	79	52	105	25	1341
0745-0845	31	286	47	20	139	32	58	415	75	48	97	31	1279
0800-0900	27	283	39	21	133	34	60	375	63	35	85	30	1185
0815-0915	22	265	33	19	109	29	55	348	56	32	79	26	1073
0830-0930	18	233	33	23	102	25	58	331	56	32	84	29	1024
0845-0945	19	230	36	24	97	24	56	316	51	35	90	25	1003
0900-1000	21	207	36	20	85	25	44	291	48	37	81	23	918

A.M. PEAK HOUR
0715-0815



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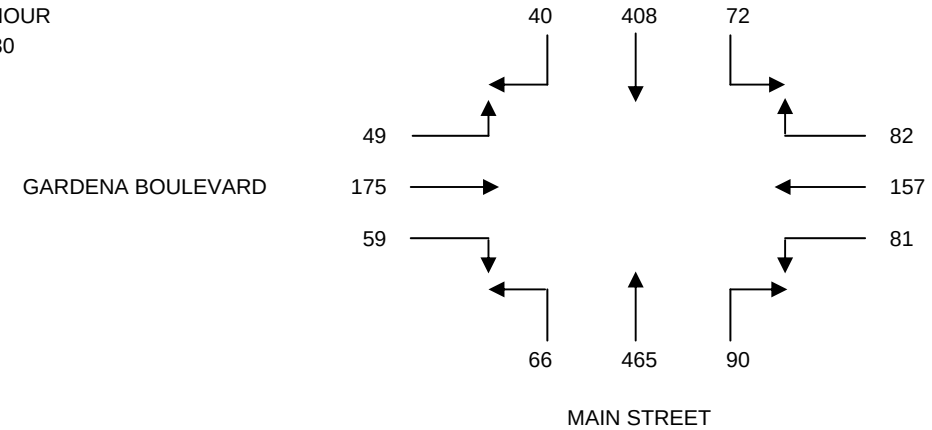
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: HIRSCH/GREEN TRANSPORTATION CONSULTING, INC.
PROJECT: 16325 AVALON BOULEVARD - CARSON
DATE: WEDNESDAY OCTOBER 26, 2011
PERIOD: 03:00 PM TO 06:00 PM
INTERSECTION N/S MAIN STREET
E/W GARDENA BOULEVARD
FILE NUMBER: 2-PM

15 MINUTE TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT
0300-0315	6	82	18	18	36	26	19	134	23	17	41	9
0315-0330	8	86	10	15	28	12	16	130	18	15	22	12
0330-0345	5	135	21	10	27	25	26	103	24	12	35	15
0345-0400	10	73	11	4	22	13	9	115	15	14	33	15
0400-0415	7	90	13	9	31	23	10	107	13	12	43	2
0415-0430	5	90	9	8	28	15	15	108	16	15	46	8
0430-0445	12	116	17	29	51	24	16	92	12	16	38	13
0445-0500	17	92	28	32	41	18	33	97	25	14	48	19
0500-0515	7	108	11	10	33	21	22	146	15	15	43	6
0515-0530	4	92	16	11	32	18	19	130	14	14	46	11
0530-0545	9	76	10	7	33	14	15	115	16	6	32	4
0545-0600	6	67	11	11	24	15	13	78	9	4	33	10

1 HOUR TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
0300-0400	29	376	60	47	113	76	70	482	80	58	131	51	1573
0315-0415	30	384	55	38	108	73	61	455	70	53	133	44	1504
0330-0430	27	388	54	31	108	76	60	433	68	53	157	40	1495
0345-0445	34	369	50	50	132	75	50	422	56	57	160	38	1493
0400-0500	41	388	67	78	151	80	74	404	66	57	175	42	1623
0415-0515	41	406	65	79	153	78	86	443	68	60	175	46	1700
0430-0530	40	408	72	82	157	81	90	465	66	59	175	49	1744
0445-0505	37	368	65	60	139	71	89	488	70	49	169	40	1645
0500-0600	26	343	48	39	122	68	69	469	54	39	154	31	1462

P.M. PEAK HOUR
0430-0530



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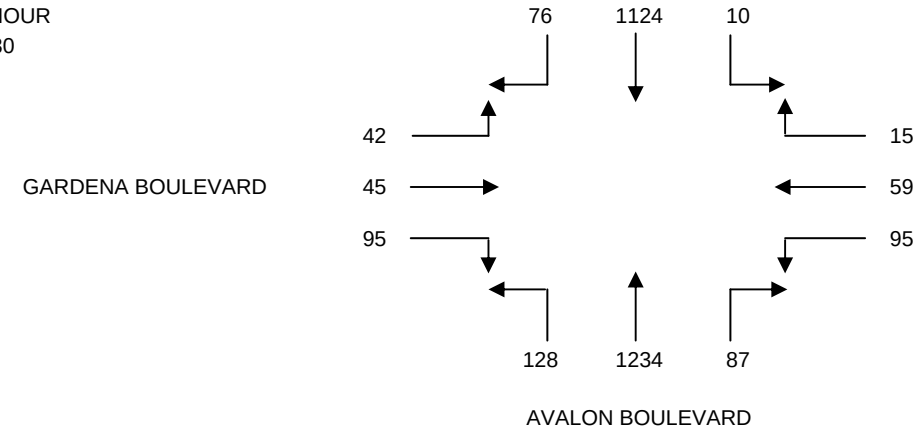
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: HIRSCH/GREEN TRANSPORTATION CONSULTING, INC.
PROJECT: 16325 AVALON BOULEVARD - CARSON
DATE: WEDNESDAY OCTOBER 26, 2011
PERIOD: 07:00 AM TO 10:00 AM
INTERSECTION N/S AVALON BOULEVARD
E/W GARDENA BOULEVARD
FILE NUMBER: 3-AM

15 MINUTE TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT
0700-0715	8	135	0	3	5	15	5	196	28	11	3	4
0715-0730	11	144	2	3	20	18	6	284	43	13	7	9
0730-0745	13	272	1	1	34	33	14	313	42	24	3	5
0745-0800	18	226	3	3	8	17	22	364	34	29	18	14
0800-0815	26	339	4	7	14	24	34	299	30	25	15	12
0815-0830	19	287	2	4	3	21	17	258	22	17	9	11
0830-0845	11	218	3	5	6	18	12	185	17	15	4	10
0845-0900	19	231	4	2	15	12	14	196	23	20	7	16
0900-0915	14	192	1	5	1	16	12	153	24	16	8	11
0915-0930	9	198	4	3	6	11	3	142	21	14	9	17
0930-0945	7	219	2	3	3	16	14	147	19	15	10	13
0945-1000	4	218	0	4	7	13	14	131	20	17	8	9

1 HOUR TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
0700-0800	50	777	6	10	67	83	47	1157	147	77	31	32	2484
0715-0815	68	981	10	14	76	92	76	1260	149	91	43	40	2900
0730-0830	76	1124	10	15	59	95	87	1234	128	95	45	42	3010
0745-0845	74	1070	12	19	31	80	85	1106	103	86	46	47	2759
0800-0900	75	1075	13	18	38	75	77	938	92	77	35	49	2562
0815-0915	63	928	10	16	25	67	55	792	86	68	28	48	2186
0830-0930	53	839	12	15	28	57	41	676	85	65	28	54	1953
0845-0945	49	840	11	13	25	55	43	638	87	65	34	57	1917
0900-1000	34	827	7	15	17	56	43	573	84	62	35	50	1803

A.M. PEAK HOUR
0730-0830



DATA PROVIDED BY:

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INFO@QUALITYTRAFFICDATA.COM

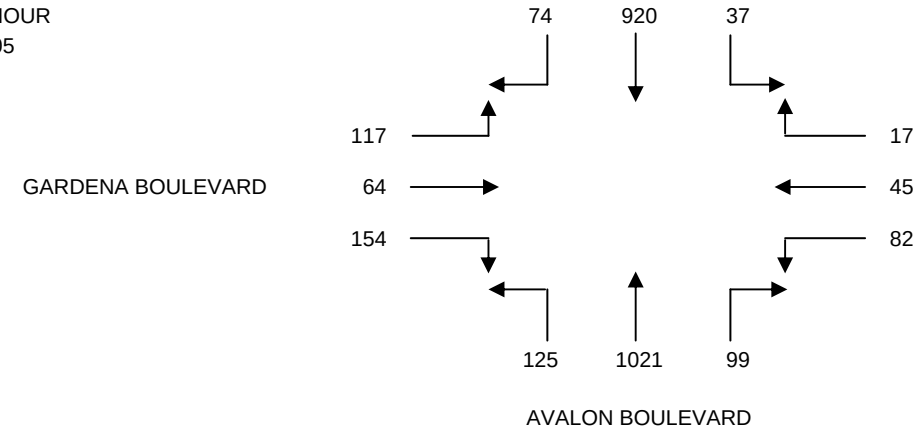
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: HIRSCH/GREEN TRANSPORTATION CONSULTING, INC.
PROJECT: 16325 AVALON BOULEVARD - CARSON
DATE: WEDNESDAY OCTOBER 26, 2011
PERIOD: 03:00 PM TO 06:00 PM
INTERSECTION N/S AVALON BOULEVARD
E/W GARDENA BOULEVARD
FILE NUMBER: 3-PM

15 MINUTE TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT
0300-0315	26	165	8	12	14	24	6	223	33	35	15	35
0315-0330	13	199	4	9	9	15	21	259	25	21	9	25
0330-0345	20	190	5	2	7	10	20	192	29	43	18	29
0345-0400	12	183	13	4	11	19	16	232	20	29	8	14
0400-0415	16	196	13	3	7	8	20	224	32	32	18	25
0415-0430	12	212	10	0	9	16	25	231	24	27	20	16
0430-0445	33	229	13	5	19	16	31	236	45	26	21	23
0445-0500	27	201	9	3	16	19	21	207	40	54	19	44
0500-0515	19	252	8	3	11	23	20	226	28	30	17	21
0515-0530	15	237	12	6	8	19	28	253	32	42	15	29
0530-0545	13	230	8	5	10	21	30	335	25	28	13	23
0545-0600	11	224	8	3	7	10	26	201	28	26	9	18

1 HOUR TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
0300-0400	71	737	30	27	41	68	63	906	107	128	50	103	2331
0315-0415	61	768	35	18	34	52	77	907	106	125	53	93	2329
0330-0430	60	781	41	9	34	53	81	879	105	131	64	84	2322
0345-0445	73	820	49	12	46	59	92	923	121	114	67	78	2454
0400-0500	88	838	45	11	51	59	97	898	141	139	78	108	2553
0415-0515	91	894	40	11	55	74	97	900	137	137	77	104	2617
0430-0530	94	919	42	17	54	77	100	922	145	152	72	117	2711
0445-0505	74	920	37	17	45	82	99	1021	125	154	64	117	2755
0500-0600	58	943	36	17	36	73	104	1015	113	126	54	91	2666

P.M. PEAK HOUR
0445-0505



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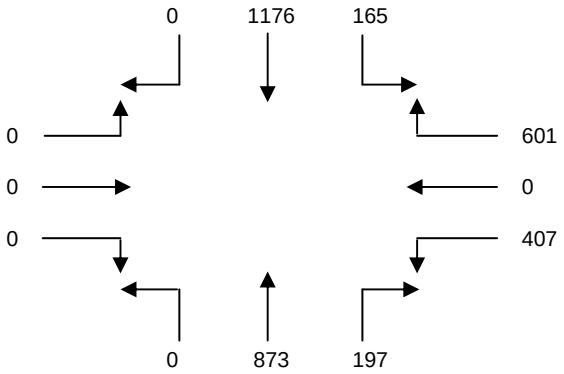
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: HIRSCH/GREEN TRANSPORTATION CONSULTING, INC.
PROJECT: 16325 AVALON BOULEVARD - CARSON
DATE: THURSDAY OCTOBER 27, 2011
PERIOD: 07:00 AM TO 10:00 AM
INTERSECTION N/S AVALON BOULEVARD
E/W SR-91 WB OFF-RAMP/ARTESIA BOULEVARD
FILE NUMBER: 4-AM

15 MINUTE TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT
0700-0715	0	137	29	121	0	74	33	113	0	0	0	0
0715-0730	0	148	33	187	0	109	52	153	0	0	0	0
0730-0745	0	284	52	192	0	119	57	183	0	0	0	0
0745-0800	0	241	37	170	0	108	50	257	0	0	0	0
0800-0815	0	349	47	134	0	91	49	235	0	0	0	0
0815-0830	0	302	29	105	0	89	41	198	0	0	0	0
0830-0845	0	226	31	91	0	84	42	129	0	0	0	0
0845-0900	0	238	32	90	0	83	50	148	0	0	0	0
0900-0915	0	202	29	74	0	70	37	121	0	0	0	0
0915-0930	0	196	32	66	0	65	45	104	0	0	0	0
0930-0945	0	213	42	67	0	71	41	118	0	0	0	0
0945-1000	0	222	33	55	0	71	56	116	0	0	0	0

1 HOUR TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
0700-0800	0	810	151	670	0	410	192	706	0	0	0	0	2939
0715-0815	0	1022	169	683	0	427	208	828	0	0	0	0	3337
0730-0830	0	1176	165	601	0	407	197	873	0	0	0	0	3419
0745-0845	0	1118	144	500	0	372	182	819	0	0	0	0	3135
0800-0900	0	1115	139	420	0	347	182	710	0	0	0	0	2913
0815-0915	0	968	121	360	0	326	170	596	0	0	0	0	2541
0830-0930	0	862	124	321	0	302	174	502	0	0	0	0	2285
0845-0945	0	849	135	297	0	289	173	491	0	0	0	0	2234
0900-1000	0	833	136	262	0	277	179	459	0	0	0	0	2146

A.M. PEAK HOUR
0730-0830



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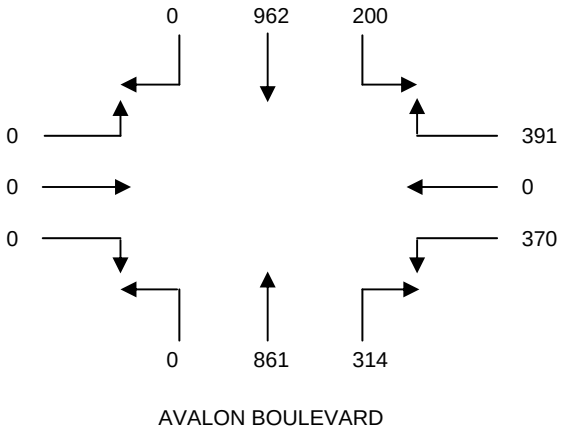
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: HIRSCH/GREEN TRANSPORTATION CONSULTING, INC.
PROJECT: 16325 AVALON BOULEVARD - CARSON
DATE: THURSDAY OCTOBER 27, 2011
PERIOD: 03:00 PM TO 06:00 PM
INTERSECTION N/S AVALON BOULEVARD
E/W SR-91 WB OFF-RAMP/ARTESIA BOULEVARD
FILE NUMBER: 4-PM

15 MINUTE TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT
0300-0315	0	177	54	93	0	67	64	175	0	0	0	0
0315-0330	0	203	37	106	0	87	58	206	0	0	0	0
0330-0345	0	207	42	47	0	79	66	187	0	0	0	0
0345-0400	0	191	43	82	0	90	66	192	0	0	0	0
0400-0415	0	189	53	82	0	67	73	199	0	0	0	0
0415-0430	0	203	57	80	0	73	56	205	0	0	0	0
0430-0445	0	221	56	69	0	72	41	251	0	0	0	0
0445-0500	0	213	53	64	0	77	55	210	0	0	0	0
0500-0515	0	252	59	85	0	83	75	196	0	0	0	0
0515-0530	0	247	57	96	0	92	100	221	0	0	0	0
0530-0545	0	234	48	150	0	106	80	243	0	0	0	0
0545-0600	0	229	36	60	0	89	59	201	0	0	0	0

1 HOUR TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
0300-0400	0	778	176	328	0	323	254	760	0	0	0	0	2619
0315-0415	0	790	175	317	0	323	263	784	0	0	0	0	2652
0330-0430	0	790	195	291	0	309	261	783	0	0	0	0	2629
0345-0445	0	804	209	313	0	302	236	847	0	0	0	0	2711
0400-0500	0	826	219	295	0	289	225	865	0	0	0	0	2719
0415-0515	0	889	225	298	0	305	227	862	0	0	0	0	2806
0430-0530	0	933	225	314	0	324	271	878	0	0	0	0	2945
0445-0505	0	946	217	395	0	358	310	870	0	0	0	0	3096
0500-0600	0	962	200	391	0	370	314	861	0	0	0	0	3098

P.M. PEAK HOUR
0500-0600



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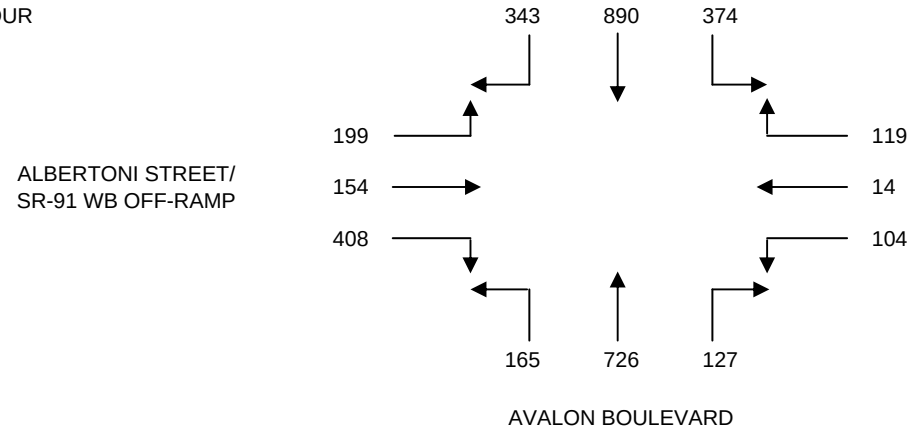
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: HIRSCH/GREEN TRANSPORTATION CONSULTING, INC.
PROJECT: 16325 AVALON BOULEVARD - CARSON
DATE: WEDNESDAY OCTOBER 26, 2011
PERIOD: 07:00 AM TO 10:00 AM
INTERSECTION N/S AVALON BOULEVARD
E/W ALBERTONI STREET/SR-91 EB RAMPS
FILE NUMBER: 5-AM

15 MINUTE TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT
0700-0715	59	104	54	12	4	2	43	117	31	31	18	23
0715-0730	93	112	57	30	4	11	46	140	24	30	20	31
0730-0745	109	221	79	19	5	21	35	162	38	64	37	52
0745-0800	88	202	67	37	3	26	42	216	41	79	39	48
0800-0815	83	250	113	40	2	32	27	197	51	119	46	40
0815-0830	63	217	115	23	4	25	23	151	35	146	32	59
0830-0845	49	149	119	22	4	19	36	102	35	103	73	40
0845-0900	46	153	125	20	7	12	25	129	34	111	36	47
0900-0915	41	119	115	19	7	9	33	104	27	117	33	28
0915-0930	33	125	110	18	7	11	36	110	24	122	24	17
0930-0945	23	182	84	14	3	30	28	105	39	120	34	32
0945-1000	45	156	98	18	8	18	29	123	18	125	37	35

1 HOUR TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
0700-0800	349	639	257	98	16	60	166	635	134	204	114	154	2826
0715-0815	373	785	316	126	14	90	150	715	154	292	142	171	3328
0730-0830	343	890	374	119	14	104	127	726	165	408	154	199	3623
0745-0845	283	818	414	122	13	102	128	666	162	447	190	187	3532
0800-0900	241	769	472	105	17	88	111	579	155	479	187	186	3389
0815-0915	199	638	474	84	22	65	117	486	131	477	174	174	3041
0830-0930	169	546	469	79	25	51	130	445	120	453	166	132	2785
0845-0945	143	579	434	71	24	62	122	448	124	470	127	124	2728
0900-1000	142	582	407	69	25	68	126	442	108	484	128	112	2693

A.M. PEAK HOUR
0730-0830



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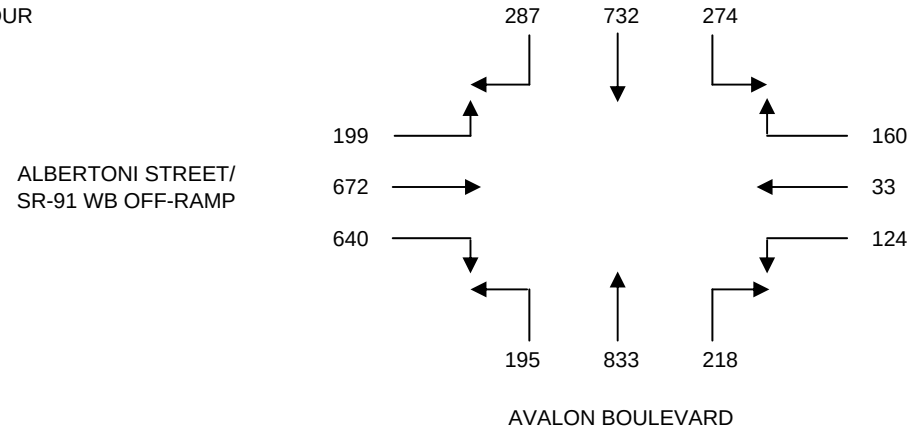
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: HIRSCH/GREEN TRANSPORTATION CONSULTING, INC.
PROJECT: 16325 AVALON BOULEVARD - CARSON
DATE: WEDNESDAY OCTOBER 26, 2011
PERIOD: 03:00 PM TO 06:00 PM
INTERSECTION N/S AVALON BOULEVARD
E/W ALBERTONI STREET/SR-91 EB RAMPS
FILE NUMBER: 5-PM

15 MINUTE TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT
0300-0315	60	119	71	17	8	17	34	182	36	81	52	34
0315-0330	63	161	62	19	9	31	39	199	37	94	46	40
0330-0345	74	140	69	27	7	20	58	203	40	95	67	31
0345-0400	65	151	58	25	4	30	63	195	47	139	94	43
0400-0415	53	142	53	27	11	30	48	204	40	88	106	45
0415-0430	62	159	61	39	4	24	57	175	43	116	118	39
0430-0445	65	153	67	41	7	29	48	196	39	126	155	60
0445-0500	64	158	61	45	6	26	44	167	36	139	188	47
0500-0515	59	198	75	20	6	31	60	206	60	144	156	50
0515-0530	65	193	78	44	11	30	63	231	46	167	167	53
0530-0545	99	183	60	51	10	37	51	229	53	190	161	49
0545-0600	66	212	48	43	15	18	54	177	50	119	105	46

1 HOUR TOTALS	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
0300-0400	262	571	260	88	28	98	194	779	160	409	259	148	3256
0315-0415	255	594	242	98	31	111	208	801	164	416	313	159	3392
0330-0430	254	592	241	118	26	104	226	777	170	438	385	158	3489
0345-0445	245	605	239	132	26	113	216	770	169	469	473	187	3644
0400-0500	244	612	242	152	28	109	197	742	158	469	567	191	3711
0415-0515	250	668	264	145	23	110	209	744	178	525	617	196	3929
0430-0530	253	702	281	150	30	116	215	800	181	576	666	210	4180
0445-0505	287	732	274	160	33	124	218	833	195	640	672	199	4367
0500-0600	289	786	261	158	42	116	228	843	209	620	589	198	4339

P.M. PEAK HOUR
0445-0505



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APPENDIX B

CRITICAL MOVEMENT ANALYSIS CALCULATION WORKSHEETS

Existing (2011)

AM Peak Hour

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	1	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Alondra Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Existing (2011)		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	132		132	132
	Left/Through	0				
	Through	2	1,040		378	
	Through/Right	1			378	
	Right	0	94	0		
	Total Lanes	4				
Southbound	Left	1	101		101	
	Left/Through	0				
	Through	2	1,018		368	368
	Through/Right	1			368	
	Right	0	85	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**500**
Eastbound	Left	1	54		54	54
	Left/Through	0				
	Through	2	173		71	
	Through/Right	1			71	
	Right	0	40	0		
	Total Lanes	4				
Westbound	Left	1	131		131	
	Left/Through	0				
	Through	2	453		202	202
	Through/Right	1			202	
	Right	0	152	0		
	Total Lanes	4				
			Sum of East/West Critical Volumes			**256**
			Total Intersection Critical Volumes			**756**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.550**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.550**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	2	**Date**	November 7, 2011
Intersection Name	North/South: Main Street East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Existing (2011)		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
	Left	1	97		97	97
	Left/Through	0				
Northbound	Through	1	385		223	
	Through/Right	1			223	
	Right	0	61	0		
	Total Lanes	3				
	Left	1	38		38	
	Left/Through	0				
Southbound	Through	1	317		179	179
	Through/Right	1			179	
	Right	0	41	0		
	Total Lanes	3				
			Sum of North/South Critical Volumes			**276**
	Left	1	26		26	26
	Left/Through	0				
Eastbound	Through	1	102		74	
	Through/Right	1			74	
	Right	0	45	0		
	Total Lanes	3				
	Left	1	34		34	
	Left/Through	0				
Westbound	Through	1	194		116	116
	Through/Right	1			116	
	Right	0	38	0		
	Total Lanes	3				
			Sum of East/West Critical Volumes			**142**
			Total Intersection Critical Volumes			**418**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.279**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.279**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	3	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Existing (2011)		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	128		128	128
	Left/Through	0				
	Through	2	1,234		440	
	Through/Right	1			440	
	Right	0	87	0		
	Total Lanes	4				
Southbound	Left	1	10		10	
	Left/Through	0				
	Through	2	1,124		400	400
	Through/Right	1			400	
	Right	0	76	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**528**
Eastbound	Left	1	42		42	
	Left/Through	0				
	Through	1	45		45	45
	Through/Right	0				
	Right	1	95	64	31	
	Total Lanes	3				
Westbound	Left	1	95		95	95
	Left/Through	0				
	Through	1	59		59	
	Through/Right	0				
	Right	1	15	15	0	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**140**
			Total Intersection Critical Volumes			**668**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.445**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.445**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)
Intersection Number	4 **Date** November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: SR-91 Freeway WB On/Off-Ramps/Artesia Boulevard
Intersection Control	Signalized
Analysis Period	AM Peak Hour
Analysis Scenario	Existing (2011)

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
	Left	0	0			
	Left/Through	0				
Northbound	Through	3	873		291	
	Through/Right	0				
	Right	1	197	160	37	
	Total Lanes	4				
	Left	2	165		91	
	Left/Through	0				
Southbound	Through	3	1,176		392	392
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	5				
			Sum of North/South Critical Volumes			**392**
	Left	0	0			
	Left/Through	0				
Eastbound	Through	0	0			
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	0				
	Left	1	407		319	319
	Left/Through	0				
Westbound	Left/Through/Right	1	0		319	
	Through/Right	0				
	Right	1	601	50	319	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**319**
			Total Intersection Critical Volumes			**711**
Number of Clearance Intervals	**3**		**Intersection Capacity**			**1,425**
			Base CMA			**0.499**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.499**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	5	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Albertoni Street/SR-91 Freeway EB On/Off-Ramps		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Existing (2011)		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	165		165	
	Left/Through	0				
	Through	3	726		242	242
	Through/Right	0				
	Right	1	127	52	75	
	Total Lanes	5				
Southbound	Left	1	374		374	374
	Left/Through	0				
	Through	2	890		411	
	Through/Right	1			411	
	Right	0	343	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**616**
Eastbound	Left	1	199		199	
	Left/Through	0				
	Through	1	154		153	153
	Through/Right	1			153	
	Right	1	408	102	153	
	Total Lanes	4				
Westbound	Left	1	104		104	104
	Left/Through	0				
	Through	1	14		7	
	Through/Right	1			7	
	Right	1	119	119	0	
	Total Lanes	4				
			Sum of East/West Critical Volumes			**257**
			Total Intersection Critical Volumes			**873**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.635**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.635**
			Level of Service (LOS)			**B**

Existing (2011)

PM Peak Hour

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	1	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Alondra Boulevard		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Existing (2011)		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
	Left	1	81		81	
	Left/Through	0				
Northbound	Through	2	865		355	355
	Through/Right	1			355	
	Right	0	200	0		
	Total Lanes	4				
	Left	1	203		203	203
	Left/Through	0				
Southbound	Through	2	838		294	
	Through/Right	1			294	
	Right	0	43	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**558**
	Left	1	88		88	
	Left/Through	0				
Eastbound	Through	2	555		213	213
	Through/Right	1			213	
	Right	0	85	0		
	Total Lanes	4				
	Left	1	81		81	81
	Left/Through	0				
Westbound	Through	2	212		106	
	Through/Right	1			111	
	Right	0	111	0		
	Total Lanes	4				
			Sum of East/West Critical Volumes			**294**
			Total Intersection Critical Volumes			**852**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.620**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.620**
			Level of Service (LOS)			**B**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	2	**Date**	November 7, 2011
Intersection Name	North/South: Main Street East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Existing (2011)		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	66		66	
	Left/Through	0				
	Through	1	465		278	278
	Through/Right	1			278	
	Right	0	90	0		
	Total Lanes	3				
Southbound	Left	1	72		72	72
	Left/Through	0				
	Through	1	408		224	
	Through/Right	1			224	
	Right	0	40	0		
	Total Lanes	3				
			Sum of North/South Critical Volumes			**350**
Eastbound	Left	1	49		49	
	Left/Through	0				
	Through	1	175		117	117
	Through/Right	1			117	
	Right	0	59	0		
	Total Lanes	3				
Westbound	Left	1	81		81	81
	Left/Through	0				
	Through	1	157		120	
	Through/Right	1			120	
	Right	0	82	0		
	Total Lanes	3				
			Sum of East/West Critical Volumes			**198**
			Total Intersection Critical Volumes			**548**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.365**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.365**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	3	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Existing (2011)		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	125		125	125
	Left/Through	0				
	Through	2	1,021		373	
	Through/Right	1			373	
	Right	0	99	0		
	Total Lanes	4				
Southbound	Left	1	37		37	
	Left/Through	0				
	Through	2	920		331	331
	Through/Right	1			331	
	Right	0	74	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**456**
Eastbound	Left	1	117		117	
	Left/Through	0				
	Through	1	64		64	
	Through/Right	0				
	Right	1	154	62	92	92
	Total Lanes	3				
Westbound	Left	1	82		82	82
	Left/Through	0				
	Through	1	45		45	
	Through/Right	0				
	Right	1	17	17	0	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**174**
			Total Intersection Critical Volumes			**630**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.420**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.420**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)
Intersection Number	4 **Date** November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: SR-91 Freeway WB On/Off-Ramps/Artesia Boulevard
Intersection Control	Signalized
Analysis Period	PM Peak Hour
Analysis Scenario	Existing (2011)

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
	Left	0	0			
	Left/Through	0				
Northbound	Through	3	861		287	287
	Through/Right	0				
	Right	1	314	118	196	
	Total Lanes	4				
	Left	2	200		110	110
	Left/Through	0				
Southbound	Through	3	962		321	
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	5				
			Sum of North/South Critical Volumes			**397**
	Left	0	0			
	Left/Through	0				
Eastbound	Through	0	0			
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	0				
	Left	1	370		235	235
	Left/Through	0				
Westbound	Left/Through/Right	1	0		235	
	Through/Right	0				
	Right	1	391	55	235	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**235**
			Total Intersection Critical Volumes			**632**
Number of Clearance Intervals	**3**		**Intersection Capacity**			**1,425**
			Base CMA			**0.444**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.444**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)
Intersection Number	5 **Date** November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Albertoni Street/SR-91 Freeway EB On/Off-Ramps
Intersection Control	Signalized
Analysis Period	PM Peak Hour
Analysis Scenario	Existing (2011)

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
	Left	1	195		195	
	Left/Through	0				
Northbound	Through	3	833		278	278
	Through/Right	0				
	Right	1	218	62	156	
	Total Lanes	5				
	Left	1	274		274	274
	Left/Through	0				
Southbound	Through	2	732		340	
	Through/Right	1			340	
	Right	0	287	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**552**
	Left	1	199		199	
	Left/Through	0				
Eastbound	Through	1	672		402	402
	Through/Right	1			402	
	Right	1	640	106	402	
	Total Lanes	4				
	Left	1	124		124	124
	Left/Through	0				
Westbound	Through	1	33		19	
	Through/Right	1			19	
	Right	1	160	137	19	
	Total Lanes	4				
			Sum of East/West Critical Volumes			**526**
			Total Intersection Critical Volumes			**1,078**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.784**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.784**
			Level of Service (LOS)			**C**

Existing (2011) With Project

AM Peak Hour

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	1	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Alondra Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Existing (2011) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	132		132	132
	Left/Through	0				
	Through	2	1,044		380	
	Through/Right	1			380	
	Right	0	97	0		
	Total Lanes	4				
Southbound	Left	1	101		101	
	Left/Through	0				
	Through	2	1,053		379	379
	Through/Right	1			379	
	Right	0	85	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**511**
Eastbound	Left	1	55		55	55
	Left/Through	0				
	Through	2	174		73	
	Through/Right	1			73	
	Right	0	46	0		
	Total Lanes	4				
Westbound	Left	1	145		145	
	Left/Through	0				
	Through	2	453		202	202
	Through/Right	1			202	
	Right	0	152	0		
	Total Lanes	4				
			Sum of East/West Critical Volumes			**257**
			Total Intersection Critical Volumes			**768**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.559**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.559**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	2	**Date**	November 7, 2011
Intersection Name	North/South: Main Street East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Existing (2011) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	97		97	97
	Left/Through	0				
	Through	1	385		225	
	Through/Right	1			225	
	Right	0	65	0		
	Total Lanes	3				
Southbound	Left	1	38		38	
	Left/Through	0				
	Through	1	317		179	179
	Through/Right	1			179	
	Right	0	41	0		
	Total Lanes	3				
			Sum of North/South Critical Volumes			**276**
Eastbound	Left	1	26		26	26
	Left/Through	0				
	Through	1	102		74	
	Through/Right	1			74	
	Right	0	45	0		
	Total Lanes	3				
Westbound	Left	1	37		37	
	Left/Through	0				
	Through	1	194		120	120
	Through/Right	1			120	
	Right	0	47	0		
	Total Lanes	3				
			Sum of East/West Critical Volumes			**146**
			Total Intersection Critical Volumes			**422**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.281**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.281**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	3	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Existing (2011) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	155		155	155
	Left/Through	0				
	Through	2	1,271		453	
	Through/Right	1			453	
	Right	0	87	0		
	Total Lanes	4				
Southbound	Left	1	10		10	
	Left/Through	0				
	Through	2	1,136		404	404
	Through/Right	1			404	
	Right	0	77	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**559**
Eastbound	Left	1	43		43	
	Left/Through	0				
	Through	1	45		45	45
	Through/Right	0				
	Right	1	97	78	19	
	Total Lanes	3				
Westbound	Left	1	95		95	95
	Left/Through	0				
	Through	1	59		59	
	Through/Right	0				
	Right	1	15	15	0	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**140**
			Total Intersection Critical Volumes			**699**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.466**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.466**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name 16325 Avalon Boulevard Project (Trammell Crow)
Intersection Number 4 **Date** November 7, 2011
Intersection Name North/South: Avalon Boulevard
East/West: SR-91 Freeway WB On/Off-Ramps/Artesia Boulevard
Intersection Control Signalized
Analysis Period AM Peak Hour
Analysis Scenario Existing (2011) With Project

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
	Left	0	0			
	Left/Through	0				
Northbound	Through	3	921		307	307
	Through/Right	0				
	Right	1	197	163	34	
	Total Lanes	4				
	Left	2	169		93	93
	Left/Through	0				
Southbound	Through	3	1,186		395	
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	5				
			Sum of North/South Critical Volumes			**400**
	Left	0	0			
	Left/Through	0				
Eastbound	Through	0	0			
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	0				
	Left	1	407		326	326
	Left/Through	0				
Westbound	Left/Through/Right	1	0		326	
	Through/Right	0				
	Right	1	617	46	326	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**326**
			Total Intersection Critical Volumes			**726**
Number of Clearance Intervals	**3**		**Intersection Capacity**			**1,425**
			Base CMA			**0.509**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.509**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	5	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Albertoni Street/SR-91 Freeway EB On/Off-Ramps		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Existing (2011) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	165		165	
	Left/Through	0				
	Through	3	744		248	248
	Through/Right	0				
	Right	1	127	52	75	
	Total Lanes	5				
Southbound	Left	1	378		378	378
	Left/Through	0				
	Through	2	896		413	
	Through/Right	1			413	
	Right	0	343	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**626**
Eastbound	Left	1	199		199	
	Left/Through	0				
	Through	1	154		152	152
	Through/Right	1			152	
	Right	1	408	106	152	
	Total Lanes	4				
Westbound	Left	1	104		104	104
	Left/Through	0				
	Through	1	14		7	
	Through/Right	1			7	
	Right	1	149	149	0	
	Total Lanes	4				
			Sum of East/West Critical Volumes			**256**
			Total Intersection Critical Volumes			**882**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.641**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.641**
			Level of Service (LOS)			**B**

Existing (2011) With Project

PM Peak Hour

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	1	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Alondra Boulevard		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Existing (2011) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	81		81	
	Left/Through	0				
	Through	2	875		361	361
	Through/Right	1			361	
	Right	0	209	0		
	Total Lanes	4				
Southbound	Left	1	203		203	203
	Left/Through	0				
	Through	2	846		296	
	Through/Right	1			296	
	Right	0	43	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**564**
Eastbound	Left	1	91		91	
	Left/Through	0				
	Through	2	557		214	214
	Through/Right	1			214	
	Right	0	86	0		
	Total Lanes	4				
Westbound	Left	1	85		85	85
	Left/Through	0				
	Through	2	212		106	
	Through/Right	1			111	
	Right	0	111	0		
	Total Lanes	4				
			Sum of East/West Critical Volumes			**299**
			Total Intersection Critical Volumes			**863**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.628**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.628**
			Level of Service (LOS)			**B**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	2	**Date**	November 7, 2011
Intersection Name	North/South: Main Street East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Existing (2011) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	66		66	
	Left/Through	0				
	Through	1	465		278	278
	Through/Right	1			278	
	Right	0	91	0		
	Total Lanes	3				
Southbound	Left	1	72		72	72
	Left/Through	0				
	Through	1	408		224	
	Through/Right	1			224	
	Right	0	40	0		
	Total Lanes	3				
			Sum of North/South Critical Volumes			**350**
Eastbound	Left	1	49		49	
	Left/Through	0				
	Through	1	175		117	117
	Through/Right	1			117	
	Right	0	59	0		
	Total Lanes	3				
Westbound	Left	1	90		90	90
	Left/Through	0				
	Through	1	157		132	
	Through/Right	1			132	
	Right	0	108	0		
	Total Lanes	3				
			Sum of East/West Critical Volumes			**207**
			Total Intersection Critical Volumes			**557**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.371**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.371**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	3	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Existing (2011) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	132		132	132
	Left/Through	0				
	Through	2	1,030		376	
	Through/Right	1			376	
	Right	0	99	0		
	Total Lanes	4				
Southbound	Left	1	37		37	
	Left/Through	0				
	Through	2	952		343	343
	Through/Right	1			343	
	Right	0	77	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**475**
Eastbound	Left	1	121		121	
	Left/Through	0				
	Through	1	64		64	
	Through/Right	0				
	Right	1	160	66	94	94
	Total Lanes	3				
Westbound	Left	1	82		82	82
	Left/Through	0				
	Through	1	45		45	
	Through/Right	0				
	Right	1	17	17	0	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**176**
			Total Intersection Critical Volumes			**651**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.434**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.434**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)
Intersection Number	4 **Date** November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: SR-91 Freeway WB On/Off-Ramps/Artesia Boulevard
Intersection Control	Signalized
Analysis Period	PM Peak Hour
Analysis Scenario	Existing (2011) With Project

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
	Left	0	0			
	Left/Through	0				
Northbound	Through	3	873		291	291
	Through/Right	0				
	Right	1	314	118	196	
	Total Lanes	4				
	Left	2	212		117	117
	Left/Through	0				
Southbound	Through	3	988		329	
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	5				
			Sum of North/South Critical Volumes			**408**
	Left	0	0			
	Left/Through	0				
Eastbound	Through	0	0			
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	0				
	Left	1	370		236	236
	Left/Through	0				
Westbound	Left/Through/Right	1	0		236	
	Through/Right	0				
	Right	1	395	58	236	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**236**
			Total Intersection Critical Volumes			**644**
Number of Clearance Intervals	**3**		**Intersection Capacity**			**1,425**
			Base CMA			**0.452**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.452**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)
Intersection Number	5 **Date** November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Albertoni Street/SR-91 Freeway EB On/Off-Ramps
Intersection Control	Signalized
Analysis Period	PM Peak Hour
Analysis Scenario	Existing (2011) With Project

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	195		195	
	Left/Through	0				
	Through	3	838		279	279
	Through/Right	0				
	Right	1	218	62	156	
	Total Lanes	5				
Southbound	Left	1	286		286	286
	Left/Through	0				
	Through	2	746		344	
	Through/Right	1			344	
	Right	0	287	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**565**
Eastbound	Left	1	199		199	
	Left/Through	0				
	Through	1	672		401	401
	Through/Right	1			401	
	Right	1	640	110	401	
	Total Lanes	4				
Westbound	Left	1	124		124	124
	Left/Through	0				
	Through	1	33		19	
	Through/Right	1			19	
	Right	1	167	143	19	
	Total Lanes	4				
			Sum of East/West Critical Volumes			**525**
			Total Intersection Critical Volumes			**1,090**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.793**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.793**
			Level of Service (LOS)			**C**

Future (2013) Without Project

AM Peak Hour

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	1	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Alondra Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Future (2013) Without Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	135		135	135
	Left/Through	0				
	Through	2	1,061		386	
	Through/Right	1			386	
	Right	0	96	0		
	Total Lanes	4				
Southbound	Left	1	103		103	
	Left/Through	0				
	Through	2	1,038		375	375
	Through/Right	1			375	
	Right	0	87	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**510**
Eastbound	Left	1	55		55	55
	Left/Through	0				
	Through	2	176		72	
	Through/Right	1			72	
	Right	0	41	0		
	Total Lanes	4				
Westbound	Left	1	134		134	
	Left/Through	0				
	Through	2	462		206	206
	Through/Right	1			206	
	Right	0	155	0		
	Total Lanes	4				
			Sum of East/West Critical Volumes			**261**
			Total Intersection Critical Volumes			**771**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.561**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.561**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	2	**Date**	November 7, 2011
Intersection Name	North/South: Main Street East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Future (2013) Without Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	99		99	99
	Left/Through	0				
	Through	1	393		228	
	Through/Right	1			228	
	Right	0	62	0		
	Total Lanes	3				
Southbound	Left	1	39		39	
	Left/Through	0				
	Through	1	323		182	182
	Through/Right	1			182	
	Right	0	42	0		
	Total Lanes	3				
			Sum of North/South Critical Volumes			**281**
Eastbound	Left	1	27		27	27
	Left/Through	0				
	Through	1	104		75	
	Through/Right	1			75	
	Right	0	46	0		
	Total Lanes	3				
Westbound	Left	1	35		35	
	Left/Through	0				
	Through	1	198		118	118
	Through/Right	1			118	
	Right	0	39	0		
	Total Lanes	3				
			Sum of East/West Critical Volumes			**145**
			Total Intersection Critical Volumes			**426**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.284**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.284**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	3	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Future (2013) Without Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	131		131	131
	Left/Through	0				
	Through	2	1,259		449	
	Through/Right	1			449	
	Right	0	89	0		
	Total Lanes	4				
Southbound	Left	1	10		10	
	Left/Through	0				
	Through	2	1,147		408	408
	Through/Right	1			408	
	Right	0	78	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**539**
Eastbound	Left	1	43		43	
	Left/Through	0				
	Through	1	46		46	46
	Through/Right	0				
	Right	1	97	66	31	
	Total Lanes	3				
Westbound	Left	1	97		97	97
	Left/Through	0				
	Through	1	60		60	
	Through/Right	0				
	Right	1	15	15	0	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**143**
			Total Intersection Critical Volumes			**682**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.455**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.455**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	4	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: SR-91 Freeway WB On/Off-Ramps/Artesia Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Future (2013) Without Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	0	0			
	Left/Through	0				
	Through	3	891		297	
	Through/Right	0				
	Right	1	201	162	39	
	Total Lanes	4				
Southbound	Left	2	168		92	
	Left/Through	0				
	Through	3	1,200		400	400
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	5				
			Sum of North/South Critical Volumes			**400**
Eastbound	Left	0	0			
	Left/Through	0				
	Through	0	0			
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	0				
Westbound	Left	1	415		325	325
	Left/Through	0				
	Left/Through/Right	1	0		325	
	Through/Right	0				
	Right	1	613	52	325	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**325**
			Total Intersection Critical Volumes			**725**
Number of Clearance Intervals	**3**		**Intersection Capacity**			**1,425**
			Base CMA			**0.509**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.509**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name 16325 Avalon Boulevard Project (Trammell Crow)
Intersection Number 5 **Date** November 7, 2011
Intersection Name North/South: Avalon Boulevard
East/West: Albertoni Street/SR-91 Freeway EB On/Off-Ramps
Intersection Control Signalized
Analysis Period AM Peak Hour
Analysis Scenario Future (2013) Without Project

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	168		168	
	Left/Through	0				
	Through	3	741		247	247
	Through/Right	0				
	Right	1	130	53	77	
	Total Lanes	5				
Southbound	Left	1	382		382	382
	Left/Through	0				
	Through	2	908		419	
	Through/Right	1			419	
	Right	0	350	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**629**
Eastbound	Left	1	203		203	
	Left/Through	0				
	Through	1	157		156	156
	Through/Right	1			156	
	Right	1	416	105	156	
	Total Lanes	4				
Westbound	Left	1	106		106	106
	Left/Through	0				
	Through	1	14		7	
	Through/Right	1			7	
	Right	1	121	121	0	
	Total Lanes	4				
			Sum of East/West Critical Volumes			**262**
			Total Intersection Critical Volumes			**891**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.648**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.648**
			Level of Service (LOS)			**B**

Future (2013) Without Project

PM Peak Hour

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	1	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Alondra Boulevard		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Future (2013) Without Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	83		83	
	Left/Through	0				
	Through	2	882		362	362
	Through/Right	1			362	
	Right	0	204	0		
	Total Lanes	4				
Southbound	Left	1	207		207	207
	Left/Through	0				
	Through	2	855		300	
	Through/Right	1			300	
	Right	0	44	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**569**
Eastbound	Left	1	90		90	
	Left/Through	0				
	Through	2	566		218	218
	Through/Right	1			218	
	Right	0	87	0		
	Total Lanes	4				
Westbound	Left	1	83		83	83
	Left/Through	0				
	Through	2	216		108	
	Through/Right	1			113	
	Right	0	113	0		
	Total Lanes	4				
			Sum of East/West Critical Volumes			**301**
			Total Intersection Critical Volumes			**870**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.633**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.633**
			Level of Service (LOS)			**B**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	2	**Date**	November 7, 2011
Intersection Name	North/South: Main Street East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Future (2013) Without Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
	Left	1	67		67	
	Left/Through	0				
Northbound	Through	1	474		283	283
	Through/Right	1			283	
	Right	0	92	0		
	Total Lanes	3				
	Left	1	73		73	73
	Left/Through	0				
Southbound	Through	1	416		228	
	Through/Right	1			228	
	Right	0	41	0		
	Total Lanes	3				
			Sum of North/South Critical Volumes			**356**
	Left	1	50		50	
	Left/Through	0				
Eastbound	Through	1	179		120	120
	Through/Right	1			120	
	Right	0	60	0		
	Total Lanes	3				
	Left	1	83		83	83
	Left/Through	0				
Westbound	Through	1	160		122	
	Through/Right	1			122	
	Right	0	84	0		
	Total Lanes	3				
			Sum of East/West Critical Volumes			**203**
			Total Intersection Critical Volumes			**559**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.373**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.373**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	3	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Future (2013) Without Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	128		128	128
	Left/Through	0				
	Through	2	1,042		381	
	Through/Right	1			381	
	Right	0	101	0		
	Total Lanes	4				
Southbound	Left	1	38		38	
	Left/Through	0				
	Through	2	938		338	338
	Through/Right	1			338	
	Right	0	75	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**466**
Eastbound	Left	1	119		119	
	Left/Through	0				
	Through	1	65		65	
	Through/Right	0				
	Right	1	157	64	93	93
	Total Lanes	3				
Westbound	Left	1	84		84	84
	Left/Through	0				
	Through	1	46		46	
	Through/Right	0				
	Right	1	17	17	0	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**177**
			Total Intersection Critical Volumes			**643**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.429**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.429**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)
Intersection Number	4 **Date** November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: SR-91 Freeway WB On/Off-Ramps/Artesia Boulevard
Intersection Control	Signalized
Analysis Period	PM Peak Hour
Analysis Scenario	Future (2013) Without Project

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
	Left	0	0			
	Left/Through	0				
Northbound	Through	3	878		293	293
	Through/Right	0				
	Right	1	320	120	200	
	Total Lanes	4				
	Left	2	204		112	112
	Left/Through	0				
Southbound	Through	3	981		327	
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	5				
			Sum of North/South Critical Volumes			**405**
	Left	0	0			
	Left/Through	0				
Eastbound	Through	0	0			
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	0				
	Left	1	377		240	240
	Left/Through	0				
Westbound	Left/Through/Right	1	0		240	
	Through/Right	0				
	Right	1	399	56	240	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**240**
			Total Intersection Critical Volumes			**645**
Number of Clearance Intervals	**3**		**Intersection Capacity**			**1,425**
			Base CMA			**0.453**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.453**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	5	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Albertoni Street/SR-91 Freeway EB On/Off-Ramps		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Future (2013) Without Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	199		199	
	Left/Through	0				
	Through	3	850		283	283
	Through/Right	0				
	Right	1	222	63	159	
	Total Lanes	5				
Southbound	Left	1	280		280	280
	Left/Through	0				
	Through	2	747		347	
	Through/Right	1			347	
	Right	0	293	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**563**
Eastbound	Left	1	203		203	
	Left/Through	0				
	Through	1	686		410	410
	Through/Right	1			410	
	Right	1	653	108	410	
	Total Lanes	4				
Westbound	Left	1	126		126	126
	Left/Through	0				
	Through	1	34		19	
	Through/Right	1			19	
	Right	1	163	140	19	
	Total Lanes	4				
			Sum of East/West Critical Volumes			**536**
			Total Intersection Critical Volumes			**1,099**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.799**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.799**
			Level of Service (LOS)			**C**

Future (2013) With Project

AM Peak Hour

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	1	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Alondra Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Future (2013) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	135		135	135
	Left/Through	0				
	Through	2	1,065		388	
	Through/Right	1			388	
	Right	0	99	0		
	Total Lanes	4				
Southbound	Left	1	103		103	
	Left/Through	0				
	Through	2	1,073		387	387
	Through/Right	1			387	
	Right	0	87	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**522**
Eastbound	Left	1	56		56	56
	Left/Through	0				
	Through	2	177		75	
	Through/Right	1			75	
	Right	0	47	0		
	Total Lanes	4				
Westbound	Left	1	148		148	
	Left/Through	0				
	Through	2	462		206	206
	Through/Right	1			206	
	Right	0	155	0		
	Total Lanes	4				
			Sum of East/West Critical Volumes			**262**
			Total Intersection Critical Volumes			**784**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.570**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.570**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	2	**Date**	November 7, 2011
Intersection Name	North/South: Main Street East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Future (2013) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	99		99	99
	Left/Through	0				
	Through	1	393		230	
	Through/Right	1			230	
	Right	0	66	0		
	Total Lanes	3				
Southbound	Left	1	39		39	
	Left/Through	0				
	Through	1	323		182	182
	Through/Right	1			182	
	Right	0	42	0		
	Total Lanes	3				
			Sum of North/South Critical Volumes			**281**
Eastbound	Left	1	27		27	27
	Left/Through	0				
	Through	1	104		75	
	Through/Right	1			75	
	Right	0	46	0		
	Total Lanes	3				
Westbound	Left	1	38		38	
	Left/Through	0				
	Through	1	198		123	123
	Through/Right	1			123	
	Right	0	48	0		
	Total Lanes	3				
			Sum of East/West Critical Volumes			**150**
			Total Intersection Critical Volumes			**431**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.287**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.287**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	3	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Future (2013) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	158		158	158
	Left/Through	0				
	Through	2	1,296		462	
	Through/Right	1			462	
	Right	0	89	0		
	Total Lanes	4				
Southbound	Left	1	10		10	
	Left/Through	0				
	Through	2	1,159		413	413
	Through/Right	1			413	
	Right	0	79	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**571**
Eastbound	Left	1	44		44	
	Left/Through	0				
	Through	1	46		46	46
	Through/Right	0				
	Right	1	99	79	20	
	Total Lanes	3				
Westbound	Left	1	97		97	97
	Left/Through	0				
	Through	1	60		60	
	Through/Right	0				
	Right	1	15	15	0	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**143**
			Total Intersection Critical Volumes			**714**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.476**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.476**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)
Intersection Number	4 **Date** November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: SR-91 Freeway WB On/Off-Ramps/Artesia Boulevard
Intersection Control	Signalized
Analysis Period	AM Peak Hour
Analysis Scenario	Future (2013) With Project

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
	Left	0	0			
	Left/Through	0				
Northbound	Through	3	939		313	313
	Through/Right	0				
	Right	1	201	166	35	
	Total Lanes	4				
	Left	2	172		95	95
	Left/Through	0				
Southbound	Through	3	1,210		403	
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	5				
			Sum of North/South Critical Volumes			**408**
	Left	0	0			
	Left/Through	0				
Eastbound	Through	0	0			
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	0				
	Left	1	415		332	332
	Left/Through	0				
Westbound	Left/Through/Right	1	0		332	
	Through/Right	0				
	Right	1	629	48	332	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**332**
			Total Intersection Critical Volumes			**740**
Number of Clearance Intervals	**3**		**Intersection Capacity**			**1,425**
			Base CMA			**0.519**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.519**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	5	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Albertoni Street/SR-91 Freeway EB On/Off-Ramps		
Intersection Control	Signalized		
Analysis Period	AM Peak Hour		
Analysis Scenario	Future (2013) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	168		168	
	Left/Through	0				
	Through	3	759		253	253
	Through/Right	0				
	Right	1	130	53	77	
	Total Lanes	5				
Southbound	Left	1	386		386	386
	Left/Through	0				
	Through	2	914		421	
	Through/Right	1			421	
	Right	0	350	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**639**
Eastbound	Left	1	203		203	
	Left/Through	0				
	Through	1	157		155	155
	Through/Right	1			155	
	Right	1	416	109	155	
	Total Lanes	4				
Westbound	Left	1	106		106	106
	Left/Through	0				
	Through	1	14		7	
	Through/Right	1			7	
	Right	1	151	151	0	
	Total Lanes	4				
			Sum of East/West Critical Volumes			**261**
			Total Intersection Critical Volumes			**900**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.655**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.655**
			Level of Service (LOS)			**B**

Future (2013) With Project

PM Peak Hour

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	1	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Alondra Boulevard		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Future (2013) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	83		83	
	Left/Through	0				
	Through	2	892		368	368
	Through/Right	1			368	
	Right	0	213	0		
	Total Lanes	4				
Southbound	Left	1	207		207	207
	Left/Through	0				
	Through	2	863		302	
	Through/Right	1			302	
	Right	0	44	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**575**
Eastbound	Left	1	93		93	
	Left/Through	0				
	Through	2	568		219	219
	Through/Right	1			219	
	Right	0	88	0		
	Total Lanes	4				
Westbound	Left	1	87		87	87
	Left/Through	0				
	Through	2	216		108	
	Through/Right	1			113	
	Right	0	113	0		
	Total Lanes	4				
			Sum of East/West Critical Volumes			**306**
			Total Intersection Critical Volumes			**881**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.641**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.641**
			Level of Service (LOS)			**B**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	2	**Date**	November 7, 2011
Intersection Name	North/South: Main Street East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Future (2013) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
	Left	1	67		67	
	Left/Through	0				
Northbound	Through	1	474		284	284
	Through/Right	1			284	
	Right	0	93	0		
	Total Lanes	3				
	Left	1	73		73	73
	Left/Through	0				
Southbound	Through	1	416		228	
	Through/Right	1			228	
	Right	0	41	0		
	Total Lanes	3				
			Sum of North/South Critical Volumes			**357**
	Left	1	50		50	
	Left/Through	0				
Eastbound	Through	1	179		120	120
	Through/Right	1			120	
	Right	0	60	0		
	Total Lanes	3				
	Left	1	92		92	92
	Left/Through	0				
Westbound	Through	1	160		135	
	Through/Right	1			135	
	Right	0	110	0		
	Total Lanes	3				
			Sum of East/West Critical Volumes			**212**
			Total Intersection Critical Volumes			**569**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.379**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.379**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)		
Intersection Number	3	**Date**	November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Gardena Boulevard		
Intersection Control	Signalized		
Analysis Period	PM Peak Hour		
Analysis Scenario	Future (2013) With Project		

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	135		135	135
	Left/Through	0				
	Through	2	1,051		384	
	Through/Right	1			384	
	Right	0	101	0		
	Total Lanes	4				
Southbound	Left	1	38		38	
	Left/Through	0				
	Through	2	970		349	349
	Through/Right	1			349	
	Right	0	78	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**484**
Eastbound	Left	1	123		123	
	Left/Through	0				
	Through	1	65		65	
	Through/Right	0				
	Right	1	163	68	95	95
	Total Lanes	3				
Westbound	Left	1	84		84	84
	Left/Through	0				
	Through	1	46		46	
	Through/Right	0				
	Right	1	17	17	0	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**179**
			Total Intersection Critical Volumes			**663**
Number of Clearance Intervals	**2**		**Intersection Capacity**			**1,500**
			Base CMA			**0.442**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.442**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)
Intersection Number	4 **Date** November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: SR-91 Freeway WB On/Off-Ramps/Artesia Boulevard
Intersection Control	Signalized
Analysis Period	PM Peak Hour
Analysis Scenario	Future (2013) With Project

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
	Left	0	0			
	Left/Through	0				
Northbound	Through	3	890		297	297
	Through/Right	0				
	Right	1	320	120	200	
	Total Lanes	4				
	Left	2	216		119	119
	Left/Through	0				
Southbound	Through	3	1,007		336	
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	5				
			Sum of North/South Critical Volumes			**416**
	Left	0	0			
	Left/Through	0				
Eastbound	Through	0	0			
	Through/Right	0				
	Right	0	0	0		
	Total Lanes	0				
	Left	1	377		240	240
	Left/Through	0				
Westbound	Left/Through/Right	1	0		240	
	Through/Right	0				
	Right	1	403	60	240	
	Total Lanes	3				
			Sum of East/West Critical Volumes			**240**
			Total Intersection Critical Volumes			**656**
Number of Clearance Intervals	**3**		**Intersection Capacity**			**1,425**
			Base CMA			**0.460**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.460**
			Level of Service (LOS)			**A**

Hirsch/Green Transportation Consulting, Inc.
Critical Movement Analysis (CMA) Worksheet

Project Name	16325 Avalon Boulevard Project (Trammell Crow)
Intersection Number	5 **Date** November 7, 2011
Intersection Name	North/South: Avalon Boulevard East/West: Albertoni Street/SR-91 Freeway EB On/Off-Ramps
Intersection Control	Signalized
Analysis Period	PM Peak Hour
Analysis Scenario	Future (2013) With Project

Approach Direction	Lane Type	No. of Lanes	Approach Volumes	Right-Turn on Red	Assigned Lane Volumes	Critical Moves
Northbound	Left	1	199		199	
	Left/Through	0				
	Through	3	855		285	285
	Through/Right	0				
	Right	1	222	63	159	
	Total Lanes	5				
Southbound	Left	1	292		292	292
	Left/Through	0				
	Through	2	761		351	
	Through/Right	1			351	
	Right	0	293	0		
	Total Lanes	4				
			Sum of North/South Critical Volumes			**577**
Eastbound	Left	1	203		203	
	Left/Through	0				
	Through	1	686		409	409
	Through/Right	1			409	
	Right	1	653	113	409	
	Total Lanes	4				
Westbound	Left	1	126		126	126
	Left/Through	0				
	Through	1	34		19	
	Through/Right	1			19	
	Right	1	170	146	19	
	Total Lanes	4				
			Sum of East/West Critical Volumes			**535**
			Total Intersection Critical Volumes			**1,112**
Number of Clearance Intervals	**4**		**Intersection Capacity**			**1,375**
			Base CMA			**0.809**
Signal Coordination	**None**		**Signal Coordination Adjustment**			**0.000**
			Final CMA			**0.809**
			Level of Service (LOS)			**D**