

5.5 TRAFFIC

The following section, prepared by Associated Transportation Engineers (ATE), analyzes the potential traffic and circulation impacts associated with the Carpinteria Valley Greenhouse Program. All of the project-area roadways currently operate at LOS A-B and most of the intersections operate at LOS A or B. The Santa Monica/Via Real/U.S. 101 NB ramps intersection and the Linden/U.S. 101 SB off-ramp intersection operate at LOS D-E during peak periods. And, there are short periods of congestion at the Casitas Pass/U.S. Highway 101 during the morning and evening commute periods. Development of the greenhouses would occur over an extended period of time. Consequently, cumulative volumes were forecasted to include development of cumulative projects in the County and City areas. Development of the additional greenhouses proposed in the plan is expected to generate a total of 822 ADT, 91 A.M. PHT, and 183 P.M. PHT. Most of the roadways and intersections are forecast to operate acceptably with cumulative + project traffic. The Santa Monica/Via Real/U.S. 101 NB ramps intersection and the Linden/U.S. 101 SB off-ramp intersection would be significantly impacted by the project. The City of Carpinteria has developed a facility plan that includes improvements planned for these two locations. Installation of new traffic signals and channelization improvements are planned for the Santa Monica/Via Real/U.S. 101 intersection. Reconfiguration and reconstruction of the Linden/U.S. 101 interchange is also planned, including a wider bridge and installation of traffic signals. These improvements would provide for acceptable levels of service with cumulative + project traffic. Access to greenhouse developments may require minor roadway and intersection widening, and wider driveways with large turning radii to accommodate truck traffic. There would be no change in the pavement and structural section needs with the additional truck traffic generated by the project.

5.5.1 Setting

a. Street Network. The study area is served by a network of highways, arterial streets and collector streets, as illustrated in Figure 5.5-1. Many of the roadways are narrow with moderate to high numbers of driveway access points. Most county roadway shoulders are unpaved and provide little room for on-street vehicle parking or pedestrians. As roadways transition from north to south into the City of Carpinteria (i.e., Cravens Lane, Santa Monica Road, Casitas Pass Road), lanes widen to urban roadway standards and amenities such as curb, gutter and sidewalks are typically present. The following text provides a brief discussion of major components of the study area street network.

U.S. Highway 101, located along the southern boundary of the study area, is the principal inter-city route along the Pacific Coast. It is a four-lane freeway within the Carpinteria area and serves as one of the major links through the South Coast. The freeway is used by a significant number of local drivers as an intra-community route. Access between U.S. 101 and the Study Area is provided via the interchanges at Santa Claus Lane, Santa Monica Road, Linden Avenue, Casitas Pass Road, and Highway 150. Although U.S. 101 runs mostly north-south in California, it runs east-west within the Carpinteria area.

Route 192 (Foothill Road) is a two-lane, east-west State Highway that traverses the foothills of the Carpinteria area and provides an alternate east-west travel route to U.S. Highway 101 and Via Real. Within the Carpinteria area, the roadway is primarily used for local travel and access to adjacent properties. Foothill Road is in good condition, having been recently repaved by the State. The roadway varies in width. In general, the roadway is ± 25 feet in width with 11-foot travel lanes and narrow shoulders. Curb, gutter and sidewalk are present along limited segments in the City of Carpinteria area.

Figure 5.5.1 Existing Street Network

Via Real, located adjacent to U.S. 101, is a two-lane arterial road that runs parallel to U.S. Highway 101 from the Summerland area into the City of Carpinteria. Within the City of Carpinteria, the roadway contains left-turn channelization at intersections and on-street parking is allowed on the north side in some areas. Class II bike lanes are provided along the roadway and the pavement is in good condition.

Toro Canyon Road is a two-lane, 21-foot-wide collector road with no paved shoulders. This road extends northerly from Via Real to Route 192. A stop sign located at the southbound approach to Via Real.

Nidever Road is a north-south two-lane collector road that extends north from Via Real to Route 192. The intersections of Nidever Road at Via Real and Route 192 are stop-sign controlled. This roadway is 32 feet wide and in good condition.

Cravens Lane is a north-south two-lane collector road that extends north from Via Real to Route 192. The intersections of Cravens Lane at Via Real and Route 192 are stop-sign controlled. The northern portion of the roadway is located in the County and the southern portion is located in the City of Carpinteria. Within the County, Cravens Lane is about 18 feet wide and the pavement is in fair to poor condition. The roadway has been widened within the City (± 30 feet) and curb and gutter is present and is generally in good condition. Parking is allowed on the east side of the street at the south end adjacent to Via Real.

Santa Monica Road is a north-south two-lane collector road (designated as a collector in both the City and County Circulation Elements) that extends from the U.S. 101 ramps intersection at Via Real to north of Route 192 (the northern portion is located in the County and the southern portion in the City). Within the County the roadway is ± 19 feet wide and the pavement is in fair to poor condition. The roadway has been widened within the City (± 32 feet) and curb, gutter and sidewalk is provided and is generally in fair to good condition. The Santa Monica Road/Via Real/U.S. Highway 101 intersection is controlled by an all-way stop, and the Santa Monica Road/Route 192 intersection is controlled by a two-way stop.

Linden Avenue is a two-lane arterial located within the City that extends south from Route 192 across U.S. 101 to the beach. It is the primary north-south arterial in the City. Access to U.S. 101 is limited to a southbound off-ramp and a northbound on-ramp. The pavement is in fair to poor condition adjacent to U.S. 101. Curb, gutter and sidewalk are provided along most of the reach north of U.S. 101 and on-street parking is allowed. The pavement is in fair to good condition on the segment north of U.S. 101. The Linden/U.S. 101 southbound off-ramp intersection is controlled by a 1-way stop, and the Linden/Route 192 intersection is controlled by an all-way stop.

Casitas Pass Road is a two-lane arterial extending south from Route 192 to U.S. 101 and then to Carpinteria Avenue. A modified diamond interchange is provided at U.S. 101 with the northbound on-ramp separated from the interchange by a length of Via Real. The Casitas Pass Road/Route 192 intersection and Casitas Pass Road/U.S. 101 interchange are controlled by stop signs. Casitas Pass Road is about 40 feet wide between Route 192 and U.S. 101 with bike lanes, curb, gutter and sidewalk, along much of this reach.

b. Roadway Operations. In rating a roadway's operating condition, "Levels of Service" (LOS) A through F are used, with LOS A indicating very good operation and LOS F indicating poor operation (more complete definitions are contained in Appendix F for

reference). Both the County and the City of Carpinteria have established LOS C as the minimum acceptable levels for roadway operations.

Existing average daily traffic (ADT) volumes for the roadways in the study area [\(including Toro Canyon Road, Via Real and Route 192 west of Nidever Road\)](#) were obtained from machine counts completed by ATE in 1999, the County (1997 to 1998 counts), and Caltrans (1997 counts). The volumes on the study area collector and arterial roadways range between 830 ADT and 4,900 ADT (See Figure 5.5-4). Based on County adopted roadway capacity standards, the collector roadways have capacities of about 11,800 ADT and the arterial roadways have capacities of about 20,000 ADT. Comparison of the existing ADT volumes and their corresponding design capacities show that all roadway segments currently operate acceptably in the LOS A-B range.

c. Truck Operations. Typical of rural and semi-rural areas, farm equipment and trucks that support agricultural production are commonly present on area roadways. Caltrans data [\(1997 counts\)](#) shows that about 2% to 6% of the total traffic volume on Route 192 are trucks. A traffic count taken on Via Real adjacent to Cravens Lane found that trucks account for about 6% of the total traffic using that road segment. Approximately 5% are small to medium size trucks and 1% are semi-tractor trailer trucks. A count taken on Cravens Lane north of Via Real found that trucks account for about 10% of the total traffic using that road segment, with 8% small to medium size trucks and 2% semi-tractor trailer trucks. The level of truck traffic experienced throughout the Study Area is similar to truck traffic levels on other county and state roadways that serve agricultural areas.

Truck routes are used to designate streets that accommodate through truck traffic within the region. Local streets also accommodate trucks accessing adjacent properties. Within the study area, Highway 101, Route 192, Nidever Road, Via Real, Cravens Lane, Santa Monica Road, Linden Avenue and Casitas Pass Road are designated as truck routes in the City of Carpinteria Circulation Element. As shown in Figure 5.5-2, Highway 101 is a primary route and the remaining routes are designated for agricultural and commercial truck traffic. Thus, there are truck route designations for the area roadways that serve the greenhouse properties. It is important to note that trucks can legally drive any street for access to properties, unless prohibited by regulation due to weight concerns or geometric design.

Due to marketing and distribution changes within the greenhouse industry, large delivery trucks are being used more frequently to deliver nursery product to grocery stores and large, retail chain stores. While not a widespread problem, some existing greenhouse properties have limited access for large trucks. For example, semi-tractor trailer trucks on Cravens Lane often park within existing travel lanes to load/unload material for local greenhouse operations (County P&D, 1999). The double-parked trucks impede the right-of-way and impose safety risks for through vehicles and pedestrians that must attempt to safely negotiate around these vehicles. Access limitations at this location include the narrow road width of north Cravens Lane (18 feet wide) and the confined driveway dimensions of this older greenhouse operation. Off-site product loading has also been observed along the north end of Linden Avenue, and north of Highway 192 between Linden Avenue and Casitas Pass Road. Large delivery trucks and semi-tractor trailer trucks are often unable to cross narrow bridges above the agricultural drainage culvert north of Highway 192. Instead, smaller delivery trucks “shuttle” nursery product between the greenhouse and larger delivery trucks parked off-site. These off-site loading practices are not environmental impacts, but rather city and county vehicle code violations that are enforcement issues that should be addressed by each jurisdiction.

Figure 5.5-2 Truck Routes

Interactions between agricultural trucks and passenger vehicles are, perhaps, most noticeable along narrow roadway segments (i.e., north Cravens Lane and Santa Monica Road) and at collector road intersections with Highway 192. Because of the rural roadway dimensions (approximately +18 feet wide) and intersection design, large trucks are often required to encroach into adjacent lanes to successfully negotiate turning movements. This presents potential safety concerns for on-coming traffic since drivers may need to maneuver their vehicles to the road shoulder, or stop and wait for the trucks to complete their turn. For instance, the geometrics at the Route 192/Cravens Lane intersection make it difficult for truck maneuvers since both Route 192 and Cravens Lane are narrow in width. Also, a utility pole located on the north side of the Route 192/Casitas Pass Road intersection makes it difficult for large trucks to turn left from Casitas Pass Road onto Route 192. The City of Carpinteria has indicated that complaints have been registered about trucks “cutting through” the neighborhood via El Carro Lane to avoid this turn constraint.

d. Intersection Operations. Because traffic flow on roadway networks is most constrained at intersections, detailed traffic flow analyses focus on the operating conditions of critical intersections during peak travel periods. The A.M. and P.M. peak hour periods are heavily influenced by commuter traffic and are generally the periods when traffic on street network are the highest. The A.M. peak period is the highest one hour between 7:00 and 9:00 A.M. The P.M. peak period is the highest one hour between 4:00 and 6:00 P.M. The level of service grading system for roadway segments (LOS A to LOS F) is also used to rate intersection operations. The County and City of Carpinteria have established LOS C as the minimum acceptable operating level for intersections.

Existing A.M. and P.M. peak hour traffic volumes for the project-area intersections were obtained from counts conducted by ATE. Most of the counts were collected in 1999 and a limited number were derived from studies completed in 1997-1998. Figures 5.5-3 and 5.5-4 show the existing peak hour traffic volumes at the project-area intersections. Levels of service for the intersections, which are all unsignalized, were calculated using the Highway Capacity Manual.¹ Levels of service are based on the average number of seconds of delay for vehicles that must stop or yield at the intersection approaches. Levels of service calculation worksheets are contained in Appendix F. Table 5.5-1 lists the type of traffic control, the controlling jurisdiction, and the existing level of service for each intersection.

Table 5.5-1 Existing Intersection Levels of Service

Intersection	Control	Jurisdiction	Delay / LOS ^a	
			A.M. Peak	P.M. Peak
Cravens/Route 192	All-1-Way Stop	County	2.0 Sec/LOS A	1.5 Sec/LOS A
Cravens/Via Real	1-Way Stop	City	4.6 Sec/LOS A	6.0 Sec/LOS B
Santa Monica/Via Real/U.S. 101 NB	All-Way Stop	City	37.1 Sec/LOS E	25.7 Sec/LOS D
Linden/Route 192	All-Way Stop	City	3.6 Sec/LOS A	3.4 Sec/LOS A
Linden/U.S. 101 SB off-ramp	1-Way Stop	City	29.7 Sec/LOS D	31.5 Sec/LOS E
Casitas Pass/Route 192	All-Way Stop	County	4.2 Sec/LOS A	3.8 Sec/LOS A
Casitas Pass/U.S. 101 NB	All-Way Stop	City	11.4 Sec/LOS C	10.5 Sec/LOS C
Casitas Pass/U.S. 101 SB	All-Way Stop	City	7.0 Sec/LOS B	8.2 Sec/LOS B

^a LOS based on average delay in seconds per vehicle.

¹ *Highway Capacity Manual*, Transportation Research Special Report 209, National Research Council, Third Edition, Updated 1994.

Figure 5.5.3 Existing A.M. Peak Hour Volumes

Figure 5.5.4 Existing ADT and P.M. Peak Hour Volumes

Table 5.5-1 indicates that both project-area intersections located in the County currently operate at LOS A, which is considered a good service level. The majority of the intersections located in the City of Carpinteria operate at LOS A or LOS B. However, the Santa Monica/Via Real/U.S. 101 NB ramp intersection and the Linden/U.S. 101 SB off-ramp intersection operate at LOS D-E during peak periods. Field observations also found that there are short periods of congestion at the Casitas Pass/U.S. Highway 101 during the morning and evening commute periods. The Santa Claus Lane/U.S. 101 interchange, operates at LOS A-B.

e. Planned Improvements. The City of Carpinteria has developed a facilities plan that includes improvements to accommodate buildout of the community, including improvements to many of its streets and intersections. The plan includes improvements at the U.S. 101 interchanges at Santa Monica, Linden, and Casitas Pass. Monies are collected for the improvements via traffic mitigation fees. The following improvements are planned for the interchanges at Santa Monica Road, Linden Avenue, and Casitas Pass Road. No timeframe has been currently established for implementation of these improvements.

Santa Monica/Via Real/U.S. 101. Installation of new traffic signals and channelization improvements are planned for this location.

Linden/U.S. 101. Reconfiguration and reconstruction of this interchange is planned, including the addition of a southbound on-ramp and a northbound off-ramp and installation of traffic signals. The overpass would be widened to approximately 64 feet curb-to-curb to provide four lanes and left turn channelization.

Casitas Pass/U.S. 101. Reconfiguration and reconstruction of this interchange is also planned. This project will include widening the overpass to four lanes, construction of turn lanes, installation of traffic signals and upgrading of the on- and off-ramps.

The above-described planned improvements were not assumed to be completed when assessing potential impacts of the greenhouses. No other roadway or intersection improvements have been identified for the study-area at this time.

5.5.2 Impact Analysis

a. Methodology and Significance Thresholds. Future traffic volumes were developed assuming buildout of the greenhouse development would occur over an extended period of time (10 to 15 years). In addition, future traffic volumes assumed development of additional projects proposed in the Toro Canyon/City of Carpinteria area to provide a basis for assessing greenhouse development's contribution to potential cumulative impacts. Trip generation estimates were then calculated for buildout of the greenhouse development and potential traffic impacts associated with these increases were measured against the future cumulative conditions.

The thresholds outlined below were used to assess the significance of the impacts associated with the traffic generated by the project. Both the County and the City of Carpinteria have adopted these thresholds.

A. If the addition of project traffic to an intersection increases the volume to capacity (V/C) ratio by the values provided in Table 5.5-2, the impact is considered significant.

Table 5.5-2 Significant Changes in Levels of Service

Intersection Level of Service (Including Project)	Increase in V/C or Trips Greater Than
LOS A	0.20
LOS B	0.15
LOS C	0.10
LOS D	15 Trips
LOS E	10 Trips
LOS F	5 Trips

B. The project’s access to a major road or arterial road would require access that would create an unsafe situation, a new traffic signal or major revisions to an existing traffic signal.

C. The project adds traffic to a roadway that has design features (e.g., narrow width, roadside ditches, sharp curves, poor sight distance, inadequate pavement structure) that would become a potential safety problem with the addition of project traffic.

D. Project traffic would utilize a substantial portion of an intersection's capacity where the intersection is currently operating at acceptable levels of service (A-C) but with cumulative traffic would degrade to or approach LOS D (V/C 0.80) or lower. Substantial is defined as a minimum change of 0.03 for an intersection which would operate from 0.80 to 0.85, a change of 0.02 for an intersection which would operate from 0.86 to 0.90, and a change of 0.01 for an intersection which would operate greater than 0.90.

b. Cumulative Conditions. Cumulative traffic volume were forecast assuming traffic that will be generated by approved and pending projects located in the County and City of Carpinteria, as well as buildout of the Toro Canyon Planning area (under the zoning that has been initiated by the County). Listings of the future development projects provided by the County and City of Carpinteria and their associated trip generation estimates are contained in Appendix F. This traffic was distributed to the area street network and then added to the existing volumes to arrive at the cumulative traffic volume forecasts. Figures 5.5-5 and 5.5-6 show the cumulative traffic volumes on the project-area street network.

c. Project Impacts. The AG-I-OF zone district retains the provisions of the existing AG-I zone district except for greenhouse development of 20,000 sf or more. The conversion of land to open field and orchard agriculture and the construction of less than 20,000 sf of greenhouse development per legal lot are permitted under the existing zone district, as well as the proposed AG-I-OF. As stated in Section 3.0, most land that is suitable for greenhouse cultivation has already been converted to agriculture. Eliminating the opportunity to construct greenhouses on slopes greater than 5% will not create an incentive to bring more natural lands into cultivation, as greenhouse development would not have occurred on these slopes anyway. Furthermore, conversion of natural lands to open field and orchard cultivation could occur irrespective of the proposed project. As discussed in Section 3.0, Environmental Setting, these zone district provisions and the impacts associated with their continuation are a part of the environmental baseline and will continue whether or not the project is approved. Therefore, there are no reasonably foreseeable significant traffic impacts associated with the proposed AG-I-OF zone district. Existing traffic associated with open field agriculture has been accounted for in the baseline traffic data compiled by ATE (see page 5.5-4). Any traffic associated with

Figure 5.5.5 Cumulative A.M. Peak Hour Volumes

Figure 5.5.6 Cumulative ADT and P.M. Peak Hour Volumes

conversion to cultivation will also be accounted for in the baseline conditions as such conversion may continue under the existing zone district provisions. Therefore, there are no reasonably foreseeable significant traffic impacts associated with the proposed AG-I-OF zone district.

The project impacts identified below would result from potential buildout of 3.0 million sf of greenhouse development in the proposed AG-I-CARP zone district.

ATE conducted several trip generation studies at existing greenhouse facilities located in Santa Barbara and Ventura Counties (including studies in the Carpinteria area) in order to develop trip generation estimates for the proposed greenhouses. A summary of the trip generation study results is contained in the Technical Appendix F. It is noted that one of the studies was conducted on the Monday prior to the Mother's Day holiday, one of the busier times at greenhouse facilities. A follow-up study after the Mother's Day holiday found that there was no significant change in the level of trip generation at Carpinteria greenhouses. Trip generation rates observed in Carpinteria reflect similar rates associated with greenhouse development in Ventura County (ATE, 1999). Trip generation estimates for buildout of the additional greenhouse development proposed under the plan are shown in Table 5.5-3.

Table 5.5-3 Project Trip Generation

Use	Size	ADT		A.M. PHT		P.M. PHT	
		Rate	Trips	Rate	Trips	Rate	Trips
Greenhouses	3,044,756 SF	0.27	822	0.03	91	0.06	183

*Trip rates per 1,000 SF.
 ADT = Average Daily Trips
 A.M. PHT = A.M. Peak Hour Trips
 P.M. PHT = P.M. Peak Hour Trips*

As shown, buildout of the greenhouse development would generate 822 ADT, 91 A.M. PHT and 183 P.M. PHT.

Truck counts were also collected at the study sites to determine the level of additional trucks that would be generated at future greenhouses. This data indicated that 18% of the total traffic at greenhouses is comprised of light to medium trucks (2 to 3 axle single-body trucks) and 5% is comprised of large trucks (3 to 6 axles, including 6-axle tractor-trailer rigs). Assuming these percentages, the proposed project would generate an average of 148 light to medium truck trip-ends per average weekday and 41 large truck trip-ends per average weekday. A trip-end is one-way - a truck either leaving or arriving at a site. The 148 light to medium truck trips and 41 large truck trips is sum total of truck traffic generation for all of the projected future greenhouse developments. Project-related traffic was distributed to the Study Area street system using existing traffic flow data and knowledge of the population, employment and commercial centers in the area. Once distributed, project-generated traffic was assigned to the project-area street system. Figures 5.5-7 and 5.5-8 illustrate the assignment of project traffic to the area street system. Figures 5.5-9 and 5.5-10 illustrate the cumulative + project traffic volumes on the project-area street system. Project-related traffic resulting from buildout of the greenhouse program is not expected to have any impact on the road system west of Nidever Road.

Figure 5.5.7 Project-Added A.M. Peak Hour Volumes

Figure 5.5.8 Project-Added ADT and P.M. Peak Hour Volumes

Figure 5.5.9 Cumulative + Project A.M. Peak Hour Volumes

Figure 5.5.10 Cumulative + Project ADT and P.M. Peak Hour Volumes

Impact T-1 Buildout of greenhouse development under the proposed project will add 822 ADT to the project-area roadways.

Levels of service for the roadway segments within the Study Area were evaluated assuming cumulative + project traffic volumes (Figure 5.5-10). Based on the roadway design capacities discussed previously, the roadway segments in the Study Area are forecast to continue to operate in the LOS A-B range. Figures 5.5-7 and 5.5-8 illustrate the assignment of project ADT, including trucks, to the study-area street network. This figure shows that the project would add between 60 ADT and 285 ADT to any one roadway segment, with 14 to 65 truck trips per day on any given road. These traffic additions would not impact the operations of the roadway segments from a capacity standpoint based on County standards and roadway design capacities, and no significant impact is anticipated. Additional analysis of truck traffic is provided under impact statements T-3, T-4, and T-5 below.

Impact T-2 The project would generate 91 A.M. PHT and 183 P.M. PHT.

Levels of service were calculated for the project-area intersections assuming the cumulative and cumulative + project peak hour traffic forecasts. The level of service calculations assumed existing geometrics and did not assume completion of proposed improvements.

Tables 5.5-4 and 5.5-5 list the results of the level of service calculations. Worksheets illustrating the level of service calculations are provided in Appendix F for reference.

Table 5.5-4 Cumulative + Project A.M. Intersection Levels of Service

Intersection	Delay/LOS			Project Added
	Existing	Cumulative	Cumulative + Project	
Cravens/Route 192	2.0 Sec/LOS A	2.2 Sec/LOS A	2.2 Sec/LOS A	8 PHT
Cravens/Via Real	4.6 Sec/LOS A	4.8 Sec/LOS A	4.9 Sec/LOS A	15 PHT
Santa Monica/Via Real/U.S. 101 NB ^a	37.1 Sec/LOS E	44.7 Sec/LOS E	38.9 Sec/LOS E	37 PHT
Linden/Route 192	3.6 Sec/LOS A	3.7 Sec/LOS A	3.8 Sec/LOS A	20 PHT
Linden/U.S. 101 SB	29.7 Sec/LOS D	35.9 Sec/LOS E	37.7 Sec/LOS E	11 PHT
Casitas Pass/Route 192	4.2 Sec/LOS A	4.4 Sec/LOS A	4.5 Sec/LOS A	15 PHT
Casitas Pass/U.S. 101 NB	11.4 Sec/LOS C	15.8 Sec/LOS C	15.9 Sec/LOS C	12 PHT
Casitas Pass/U.S. 101 SB	7.0 Sec/LOS B	8.5 Sec/LOS B	8.7 Sec/LOS B	8 PHT

^a Cumulative + Project delay improves from Cumulative conditions due to traffic added to approaches with relatively low delays.

Tables 5.5-4 and 5.5-5 indicate that most project-area intersections are forecast to operate acceptably at LOS C or better with cumulative + project traffic. However, project generated traffic would contribute to potentially significant A.M. and P.M. peak hour congestion at the Santa Monica/Via Real/U.S. 101 NB ramp intersection and the Linden/U.S. 101 SB off-ramp intersection. These intersections are currently at, and are forecast to exceed, acceptable levels of service. Project buildout would add to the service level degradations.

Table 5.5-5 Cumulative + Project P.M. Intersection Levels of Service

Intersection	Delay/LOS			Project Added
	Existing	Cumulative	Cumulative +Project	
Cravens/Route 192	1.5 Sec/LOS A	1.9 Sec/LOS A	2.0 Sec/LOS A	17 PHT
Cravens/Via Real	6.0 Sec/LOS B	6.8 Sec/LOS B	7.0 Sec/LOS B	46 PHT
Santa Monica/Via Real/U.S. 101 NB ^a	25.7 Sec/LOS D	34.2 Sec/LOS E	26.5 Sec/LOS D	76 PHT
Linden/Route 192	3.4 Sec/LOS A	3.5 Sec/LOS A	3.7 Sec/LOS A	36 PHT
Linden/U.S. 101 SB	31.5 Sec/LOS E	40.3 Sec/LOS E	44.8 Sec/LOS E	17 PHT
Casitas Pass/Route 192	3.8 Sec/LOS A	4.2 Sec/LOS A	4.5 Sec/LOS A	31 PHT
Casitas Pass/U.S. 101 NB	10.5 Sec/LOS C	13.0 Sec/LOS C	13.5 Sec/LOS C	21 PHT
Casitas Pass/U.S. 101 SB	8.2 Sec/LOS B	8.5 Sec/LOS B	8.7 Sec/LOS B	15 PHT

^a Cumulative + Project delay/LOS improves from Cumulative conditions due to traffic added to approaches with relatively low delays.

Impact T-3 Project-generated traffic may expose persons and property to potentially significant traffic safety impacts along area roadways and intersections.

Truck traffic within the study area currently represents approximately 6% to 10% of the average daily traffic volume. Buildout of the proposed project would generate a total of 189 truck trip-ends (148 light to medium truck trip-ends and 41 large truck trip-ends) distributed throughout the study area. This represents an overall increase in truck traffic to approximately 8% to 12% of average daily traffic volume. Even with the increase in truck traffic, projected truck traffic volumes on area roadways would be comparable with other rural areas within the county and state.

Potential conflicts\interaction between passenger vehicles and trucks would continue to occur on narrow roadways (i.e., Santa Monica Road and Cravens Lane) and their intersection with Highway 192, and along winding sections of Highway 192 and Santa Monica Road. The concentration of future greenhouse development adjacent to Cravens Lane, Santa Monica Road and Linden Avenue could result in increased turning movement conflicts at the intersections of Cravens Lane\Hwy 192, Santa Monica Road\Hwy 192, and Casitas Pass Road\Hwy 192.

Areas proposed for future greenhouse expansion include those located along Craven’s Lane and Santa Monica Road. These roadways have limited sight distances due to relatively narrow widths, existing landscaping and buildings, and frequent road turns (Santa Monica Road). Potential sight distance impacts could also occur at other greenhouse locations given project-specific driveway configurations. Access to greenhouse developments may require roadway widening and wider driveways with large turning radii to accommodate truck traffic. This may involve driveway modifications at existing access points, and/or new driveway access on currently undeveloped parcels.

Collision Analysis

A summary of collision rates for Route 192 from Santa Monica Road to Linden Avenue and the intersections along the route are shown in Table 5.5-6. Caltrans provided the data for the 3-year period of 1996-1998. The table compares the actual collision rates that were experienced in the Carpinteria area with rates for similar facilities in the State of California.

Table 5.5-6 Collision Rate Summary

Facility	Collision Rates	
	Actual	Statewide Average
Route 192 - Santa Monica Rd to Linden Ave	1.64	3.12
Route 192/Cravens Ln (intersection)	1.24	0.33
Route 192/Santa Monica Rd (intersection)	0.00	0.33
Route 192/Carp High School (intersection)	0.00	0.11
Route 192/Linden Ave (intersection)	0.58	0.21

^a Rates per million vehicle miles for roadway segments and million entering vehicles for intersections.

As shown, the collision rates experienced at the Route 192/Cravens Lane intersection and the Route 192/Linden Avenue intersection are higher than the statewide averages for similar facilities. The rates and number of collisions were reviewed using the following Poisson formula to evaluate their significance. This Poisson formula defines the significance of the number of collisions based upon traffic volumes. The equation is:

$$N_e = \frac{ADT \text{ (Time Period)} \text{ (Average Rate)} \text{ (Length)}}{10^6}$$

$$N_R = N_e + (2.576)(N_e)^{1/2} + 1.329$$

Where,

- N_e = Number expected
- N_R = Number for significance
- ADT = Average Daily Traffic
- L = Segment length

For intersections, use annual number of entering vehicles in place of ADT and delete length. The N_R is the same as for roadway segments.

Based on the Poisson formula, the number of collisions are only statistically significant at the Route 192/Cravens Lane intersection. There were a total of 5 reported collisions at the intersection during the 3-year period and the significance threshold is 5. The analyses indicate the need for further investigation and/or corrective action. *This is an existing deficiency that should be addressed with or without the project.*

Collision data indicates that collision rates experienced at the Route 192/Cravens Lane intersection and the Route 192/Linden Avenue intersection are higher than the statewide average for similar facilities, however, only the Route 192/Cravens Lane collision rate is statistically significant. Additionally, a previously unknown method for monitoring high accident locations has been identified by Caltrans. The Route 192/Cravens Lane intersection is a Caltrans facility and as such is part of an ongoing monitoring system for all of the state's facilities. Caltrans monitors high accident locations via the "High Accident Concentration Locations" listing. The Route 192/Cravens Lane intersection is not on the High Accident Concentration Locations listing because the number of accidents is lower than Caltrans thresholds. Although this intersection is not on this list, the collision rates recorded at the

intersection are considered statistically significant and above normal accident rates. Additional review by Caltrans and the City of Carpinteria and County Public Works Departments will be required to determine the exact intersection deficiency (e.g. sight distance, geometry, etc.), and what corrective action is required. Until this study is completed, it is uncertain whether greenhouse-related truck traffic is a contributing factor to the elevated collision rates. What is known is that project + cumulative buildout would send additional traffic to these intersections and expose persons and property to a *potentially significant* traffic safety impact.

Impact T-4 The project would generate large trucks on area roadways, which may necessitate additional roadway structural improvements.

The anticipated level of truck traffic predominantly determines roadway structural requirements (the base and pavement). Calculating the Traffic Index (TI) based on truck traffic forecasts sets the structural requirements for a new roadway. TI calculations are also completed to assess potential impacts of the additional truck traffic on the structural sections of the existing roadways. The TI was calculated using the methods listed in Caltrans Design Manual. The TI forecast is based upon all of the greenhouse projects producing truck traffic on a regular basis.

Based upon the traffic volumes developed for cumulative and cumulative + project conditions, the TI for Via Real east of South Padaro Lane is 8.5 for both cases. The cumulative and cumulative + project TI for Craven Lane is 8.0 for both cases. Thus, there would be no change in the structural section needs with the additional truck traffic generated by the project. It is recognized that there are several County roadways that have experienced pavement failure and are in poor condition (north end of Cravens Lane and Santa Monica Road). However, these are existing conditions that will require improvements by the County.

Impact T-5 Congestion Management Program (CMP) Impacts

The Santa Barbara County Association of Governments (SBCAG) has developed a set of traffic impact guidelines to assess impacts of land use decisions made by local jurisdictions on regional transportation facilities located within the County CMP roadway system. The following guidelines are used to determine the significance of project-generated traffic impacts on the regional CMP system.

1. For any roadway or intersection operating at “Level of Service” (LOS) A or B, a decrease of two levels of service resulting from the addition of project-generated traffic.
2. For any roadway or intersection operating at LOS C, project-added traffic that results in LOS D or worse.
3. For intersections within the CMP system with existing congestion, Table 5.5-7 defines significant impacts.

Table 5.5-7 CMP Impact Criteria

Level of Service	Project-Added Peak Hour Trips
LOS D	20
LOS E	10
LOS F	10

4. For freeway or highway segments with existing congestion, Table 5.5-8 defines significant impacts.

Table 5.5-8 Freeway Impact Criteria

Level of Service	Project-Added Peak Hour Trips
LOS D	100
LOS E	50
LOS F	50

Intersections. The Linden Avenue/Carpinteria Avenue and Casitas Pass Road/Carpinteria Avenue intersections are part of the CMP network. The project would add less than 20 peak hour trips to the Linden Avenue/Carpinteria Avenue intersection and less than 20 peak hour trips to the Casitas Pass Road/Carpinteria Avenue intersection. Both of these intersections operate at LOS C or better. These locations would not be significantly impacted by the addition of project traffic.

Freeway. The project would add less than 50 peak hour trips to the freeway segments in the area, which is below the CMP threshold for freeway segment impacts. Therefore, project-generated traffic would have *less than significant impacts* upon the CMP roadway system.

5.5.3 Mitigation Measures

a. Existing Comprehensive Plan/Coastal Plan Policies. The Circulation Element contains policies pertaining to levels of service at existing roadways and intersections. Generally, a project is found to be inconsistent with these policies if the intersection level of service would be reduced below LOS C, or if roadways would be congested beyond their acceptable capacities.

b. Proposed Development Standards. No specific development standards regarding traffic associated with development within the proposed AG-I-CARP zone are proposed.

c. Additional Proposed Mitigation Measures. The following measures would serve to assure that traffic associated with additional greenhouse development would not add to existing congestion problems.

Mitigation T-1 Interchange Improvements. New greenhouse development contributing peak hour trips to the Santa Monica/Via Real/U.S. 101 NB ramp interchange and the Linden Avenue/U.S. 101 SB ramp interchange shall pay a pro-rata contribution towards future interchange improvements. A Memorandum of Understanding (MOU) to be developed by Public Works Department, Planning & Development Department, and the City of Carpinteria, shall establish appropriate

mitigation fee calculation rates and procedures. (*Addresses Impact T-2*)

Mitigation T-2 Peak Hour Trip Calculation. Application submittal for new greenhouse development shall include a focused traffic analysis that identifies the number of new peak hour trips a project will send to the Santa Monica/Via Real/U.S. 101 NB ramp interchange and the Linden Avenue/U.S. 101 SB ramp interchange. (*Addresses Impact T-2*)

Mitigation T-3 Sight Distance. Each greenhouse development project shall be reviewed by County Public Works Department to ensure compliance with state and county sight distance requirements. (*Addresses Impact T-3*)

Mitigation T-4 Driveway Access Design. Property access points shall be improved, as determined necessary by County Public Works Department, to safely accommodate truck maneuvers. The design and scale of driveway entrances shall be consistent with the rural character of the area to the maximum extent feasible. Driveway access improvements shall not inhibit, or diminish the effectiveness of, required landscape mitigation. (*Addresses Impact T-3*)

Mitigation T-5 On-Site Parking Requirements. All truck deliveries, shipments, and employee parking shall be accommodated on-site. (*Addresses Impact T-3*)

Mitigation T-6 Route 192/Cravens Lane. The County Public Works Department shall work with Caltrans to investigate the source of elevated collision rates experienced at Route 192/Cravens Lane and to implement appropriate corrective action, if necessary. The design and scale of intersection improvements shall be consistent with the rural character of the area to the maximum extent feasible. (*Addresses Impact T-3*)

Mitigation T-7 Route 192/Linden Ave. The County Public Works Department shall work with Caltrans and the City of Carpinteria to investigate the source of elevated collision rates experienced at Route 192/Linden Avenue and to implement appropriate corrective action, if necessary. The design and scale of intersection improvements shall be consistent with the rural character of the area to the maximum extent feasible. (*Addresses Impact T-3*)

Mitigation T-8 Route 192/Casitas Pass Road. The Public Works Department shall contact the local utility company to request relocation of the utility pole located on the north side of Route 192/Casitas Pass Road. The utility pole shall be located away from the intersection to provide adequate geometrics for trucks using the intersection. (*Addresses Impact T-3*)

Mitigation T-9 Roadway Safety Signs. The Public Works Department shall evaluate the need for appropriate new signage along Santa Monica Road to alert drivers of possible truck traffic when entering or existing at a blind curve area. (*Addresses Impact T-3*)

Mitigation T-10 Traffic Management Plan. The applicant shall prepare a Traffic Management plan for review and approval by County Public Works Department. The plan shall include, but not be limited to, information regarding approach and exit speeds, turning movements, hours of delivery, etc. (*Addresses Impact T-3*)

d. Recommended Mitigation Measures.

Mitigation T-11 Roadway Maintenance. The Public Works Department should make maintenance a priority on Santa Monica Road and Cravens Lane. (*Addresses Impact T-4*)

Residual Impacts

The following discussion identifies the level of significance for project impacts after all available mitigation measures have been applied.

Impact T-1. The addition of 822 ADT to area roadways would not impact capacities. No mitigation required. Residual impacts would remain ***adverse, but not significant (Class III)***.

Impact T-2. The City of Carpinteria has developed a facility plan to be funded with traffic mitigation fees that includes improvements planned for the two existing congested locations. New traffic signals and lane geometry improvements are planned for the Santa Monica/Via Real/U.S. 101 intersection. Reconfiguration and reconstruction of the Linden/U.S. 101 interchange is also planned, including a wider bridge and installation of traffic signals. No timeframe has been currently established for implementation of these improvements. Project study reports (PSR) will be completed for these improvements when funding is developed. The PSR reports will identify the geometrics that will provide for acceptable levels of service with cumulative + project traffic. Mitigation T-2-1 requires new greenhouse development to pay traffic mitigation fees to the City of Carpinteria based on the number of new peak hour trips an individual greenhouse will contribute to both the Linden Avenue/U.S. 101 interchange and the Santa Monica Road/Via Real/ U.S. 101 interchange. However, since the timing of proposed improvements is unknown, and funding for these improvements has not been secured, residual impacts would remain ***significant and unavoidable (Class I)***.

Impact T-3. Implementation of mitigation measures addressing site distance and traffic management plan requirements would reduce driveway access safety impacts to ***a less than significant level (Class II)***. Project buildout would send additional traffic to the Highway 192/Cravens Lane intersection, which has a statistically significant collision rate. Until specific intersection improvements are identified and funded, the project's contribution to this existing impact is considered ***unavoidable and significant (Class I)***.

Impact T-4. The Traffic Index on local roadways is not expected to significantly change due to the increased number of local truck trips associated with buildout of the project impacts would remain ***adverse, but less than significant (Class III)***.

Impact T-5. Project-generated peak hour trips to Carpinteria area CMP intersections and Highway 101 would not exceed existing CMP guidelines for significance determination. Impacts would be considered ***adverse, but not significant (Class III)***.

5.5.5 Cumulative Impacts

The impact analysis presented above is based on development of future greenhouses in the

Carpinteria Valley area over an extended period of time, with cumulative volumes forecasted based on anticipated growth. The analysis and the impacts that were identified are therefore cumulative in nature.

