Appendix H

Traffic Analysis

Appendix H – Traffic Analysis

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Since 1978

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TRAFFIC, PARKING AND VMT ANALYSIS FOR THE DECOMMISSIONING AND REMEDIATION OF THE CARPINTERIA OIL AND GAS PROCESSING FACILITIES – CITY OF CARPINTERIA

Associated Transportation Engineers (ATE) has prepared the following traffic, parking and Vehicle Miles Travelled (VMT) analysis for the Decommissioning and Remediation of the Carpinteria Oil and Gas Processing Facilities (the "Project"), located in the City of Carpinteria. The study reviews baseline traffic conditions in the Project study area, evaluates the effects of the Project's proposed demolition and haul activities, and recommends traffic and parking management strategies for the demolition phase. A discussion of potential Vehicle Miles Traveled (VMT) impacts is also provided.

PROJECT DESCRIPTION

The Project involves the demolition and remediation of the existing oil and gas facilities located in the Carpinteria Buffs area of the City, as shown on Figure 1. Access to the site is provided by Dump Road which extends south from Carpinteria Avenue to the site. The demolished materials would be exported from the site via US 101, Carpinteria Avenue, Bailard Avenue and Dump Road.

PROJECT OPERATIONAL DATA

The demolition, soil remediation, and hauling activities are estimated to take approximately 3 years (intermittently) to complete. An estimated total of 5,445 truckloads (including 169 loads for equipment removal, 1,119 loads for surface materials removal, and 4,157 loads for

soil remediation) will be required to transport the various waste streams from the Project site (including steel scrap material, foundation and surface materials, subsurface piping, and remediated soils).

Depending upon the material loaded for hauling, approximately 18-22 tons or 9-16 cubic yards per truckload will fit into each dump truck. A conservative worst-case day utilizing the shortest trucking route to the Waste Management Landfill in Simi Valley or the State Ready Mix site in Oxnard will allow for up to 2.5 trips/day x 16 trucks or approximately 40 truck trips per day to/from the Project site, however, an average day will more likely utilize approximately 16 trucks. Based on this average day, approximately 350 tons (16 trucks x 22 tons) of material will be transferred from the Project site. If 350 tons were loaded on an average hauling day, approximately 16 hauling days will be required to dispose of the total waste from the Project site. However, it is likely that hauling days will be spread out during the course of the Project, resulting in fewer required trips per day. The Project description indicates that haul trucks will be restricted during the morning (7:00 AM - 9:00 AM) and afternoon (4:00 PM - 6:00 PM) commute periods. It is anticipated that 10 to 15 employees would be required at the site for demolition and loading activities.

PROPOSED TRUCK ROUTE

As shown on Figure 2, trucks travelling to the Project site would exit US 101 at the Bailard Avenue interchange, proceed south on Bailard Avenue to Carpinteria Avenue, then west on Carpinteria Avenue to Dump Road. After picking up their loads, the trucks will return to the US 101 southbound on-ramp at the Bailard Avenue interchange via the same route in reverse (see Figures 3).

It is noted that the Project site includes areas north and south of the Union Pacific Railroad (UPRR) tracks. The Project area south of the UPRR is currently used as employee parking and equipment staging in support of the industrial use of the pier. The demolition and remediation project will continue to access this southern area from Dump Road across the UPRR right-of-way as currently occurs. It is anticipated that traffic volumes at the crossing will be at approximately the same levels as currently exist during the demolition and remediation phase compared to current operations.

EXISTING TRANSPORTATION CONDTIONS

Street Network

The Project site is served by a network of highways, arterial roadways, and collector streets, as shown on Figure 2. The following text provides a brief description of the major components of the street network.

US 101, located north of site, connects the City of Carpinteria with the Santa Barbara-Goleta area to the north and the Ventura-Oxnard area to the south. Access between the Project site and US 101 is provided via the Bailard Avenue interchange located east of the site, and the Casitas Pass Road interchange located west of the site. US 101 is currently being widened to 3 lanes in each direction from Bailard Avenue to Summerland.

Bailard Avenue, located east of the Project site, is a two-lane roadway that extends north from Carpinteria Avenue to its terminus north of US 101. Bailard Avenue would provide access between the site to US 101 via a full access interchange.

Carpinteria Avenue, located along the Project's northern frontage, is an east-west 2-lane arterial roadway that serves as one of the primary travel routes within the City of Carpinteria. Access to the Project site would be provided via the connection of Dump Road to Carpinteria Avenue.

Dump Road, located along the western boundary of the Project site, is a two-lane private road that extends south from Carpinteria to the Chevron site, terminating at the employee parking lots located south of the Union Pacific Railroad (UPRR) tracks. Dump Road would be used by the Project haul trucks and demolition/remediation employees to access the site.

Existing Intersection Operations

Because traffic flow on urban arterials is most constrained at intersections, detailed traffic flow analyses focus on the operating conditions of critical intersections during peak travel periods. "Levels of Service" (LOS) A through F are used to evaluate intersection operations, with LOS A indicating free flow conditions and LOS F indicating severe congestion (more complete definitions of levels of service are attached). The City of Carpinteria Circulation Element has adopted LOS C as the minimum acceptable operating standard for intersections.

Existing intersection levels of service for the study-area intersections were obtained from the traffic and circulation study completed for the Punto Vista Project[1] located on the Carpinteria Bluffs area east of the Project site. Table 1 lists the existing AM and PM peak hour levels of service for the study-area intersections.

1 Revised Traffic, Circulation and Parking Study for the Punto de Vista Project, Associated Transportation Engineers, January 2021.

Table 1
Existing Intersection Levels of Service

Intersection	AM Peak Hour LOS	PM Peak Hour LOS
US 101 NB Ramps/Bailard Ave	LOS C	LOS B
US 101 SB Ramps/Bailard Ave	LOS B	LOS C
Carpinteria Ave/Bailard Ave	LOS B	LOS B
Carpinteria Ave/Casitas Pass Rd	LOS C	LOS C

The data presented in Table 1 indicate that the study-area intersections currently operate in the LOS B-C range, which meets the City's LOS C standard.

PROJECT TRIP GENERATION

Trip generation estimates were developed for the Project based on the operational data provided by the applicant (number of employees and employee shifts, number of haul trucks, number of deliveries, etc.). The analysis assumes a 15% carpool rate for employees based on the commute mode split data published by SBCAG for Santa Barbara County (attached). Table 2 shows the trip generation estimates developed for the Project based on the proposed operations.

Table 2
Project Trip Generation Estimates

Project Component	Number per Day	Shift Schedule	Trip Generation		
			ADT	AM Peak	PM Peak
Employees (a)	15 per day	7:00 AM – 5:00 PM	26	13	13
Haul Trucks (b)	16 per day	9:00 AM – 4:00 PM	32	0	0
Deliveries (c)	2 per day	9:00 AM – 4:00 PM	4	0	0
Total			**62**	**13**	**13**
Total					

(a) Employees: Trip generation assume 15% carpooling based on SBCAG carpool data. ADT assumes 1 inbound + 1 outbound trip per employee vehicle. Peak hour trips based on arrival/departures during the 7-9 AM and 4-6 PM peak periods.
(b) Trip generation assumes 1 inbound + 1 outbound trip per haul truck with no trips occurring during the AM and PM peak periods based on the proposed restrictions.
(c) Trip generation assumes 1 inbound + 1 outbound trip per delivery vehicle with no trips occurring during the AM and PM peak periods based on the proposed restrictions.

As shown in Table 2, the Project would generate 62 ADT, 13 AM peak hour trips, and 13 PM peak hour trips.

TRAFFIC THRESHOLDS AND POLICIES

The City of Carpinteria's traffic thresholds and policies were used to assess the consistency of the Project with the City's transportation policies. These thresholds are outlined below.

Project Threshold

If the addition of project traffic to an intersection increases the volume to capacity (V/C) ratio, the seconds of delay, or the number of trips by more than the values provided in the table below, the Project is considered potentially inconsistent.

Significant Changes in Levels of Service	
Intersection Level of Service (Including Project)	**Increase Greater Than**
LOS A	0.20 V/C Ratio or 10.0 Seconds of Delay
LOS B	0.15 V/C Ratio or 7.5 Seconds of Delay
LOS C	0.10 V/C Ratio or 5.0 Seconds of Delay
LOS D	15 Trips
LOS E	10 Trips
LOS F	5 Trips

Cumulative Threshold

A cumulative policy inconsistency would occur if a development's 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 or lower. Substantial is defined as a minimum change of 3 seconds of delay for an intersection forecast to operate at LOS D, a minimum change of 2 seconds of delay for an intersection forecast to operate at LOS E, and a minimum change of 1.5 seconds of delay for an intersection forecast to operate at LOS F.

TRANSPORTATION CONSISTENCY ANALYSIS

Figures 4 and 5 show the employee travel routes to and from the Project site. As shown, employees travelling from the south would exit US 101 at the Bailard Avenue interchange and then proceed westerly on Carpinteria Avenue to arrive at the Project site (and the same route in reverse when departing the site). Employees travelling from the north would exit US 101 at the Casitas Pass Road interchange and then proceed easterly on Carpinteria Avenue to arrive at the Project site (and the same route in reverse when departing the site). Local Carpinteria traffic would travel to and from the Project site via Carpinteria Avenue.

Tables 3 and 4 list the Project's traffic additions at the US 101/Bailard Avenue interchange and the Carpinteria Avenue/Casitas Pass Road intersection; and identify potential inconsistencies with the City's transportation policies and thresholds.

Table 3
Project Traffic Additions – AM Peak Hour

Intersection	**AM LOS**	**Project-Added Trips(a)**	**Consistent?**
US 101 NB Ramps/Bailard Ave	LOS C	6 PHT	YES
US 101 SB Ramps/Bailard Ave	LOS B	6 PHT	YES
Carpinteria Ave Ramps/Bailard Ave	LOS B	6 PHT	YES
Carpinteria Ave/Casitas Pass Rd	LOS C	7 PHT	YES

(a) Includes Project employee trips. Truck trips restricted during peak hour periods.

Table 4
Project Traffic Additions – PM Peak Hour

Intersection	**PM LOS**	**Project-Added Trips(a)**	**Consistent?**
US 101 NB Ramps/Bailard Ave	LOS B	6 PHT	YES
US 101 SB Ramps/Bailard Ave	LOS C	6 PHT	YES
Carpinteria Ave Ramps/Bailard Ave	LOS B	6 PHT	YES
Carpinteria Ave/Casitas Pass Rd	LOS C	7 PHT	YES

(a) Includes Project employee trips. Truck trips restricted during peak hour periods.

As shown in Tables 3 and 4, the Project would add 6 AM and 6 PM PHT to the Bailard Avenue interchange and 7 PHT to the Carpinteria Avenue/Casitas Pass Road intersection. These relatively minor traffic additions would not exceed the City's traffic policies.

SITE ACCESS

Intersection Design

Access to the Project site would be provided via the Carpinteria Avenue/Dump Road intersection. The intersection is controlled by stop signs on the northbound Dump Road approach and the driveway to the Alamo Self Storage facility forms the north leg of the intersection. Carpinteria Avenue contains one through lane and a left-turn lane in each direction at the intersection. The Dump Road approach flares to approximately 48 feet in width at Carpinteria Avenue. The design of the intersection is adequate to accommodate the haul truck maneuvers to and from Carpinteria Avenue.

Intersection Operations

As noted in the Trip Generation section, the Project is forecast to generate 62 ADT and 13 AM and PM peak hour trips. This relatively minor level of traffic would be accommodated at the Carpinteria Avenue/Dump Road intersection without significant delays or congestion.

Intersection Sight Distance

Sight distances were analyzed at the Carpinteria Avenue/Dump Road intersection to determine if the sight lines along Carpinteria Avenue are sufficient in length to permit drivers to anticipate and avoid potential collisions when using the intersection. The Caltrans Highway Design Manual stopping sight distance standards were used to determine the requirements at the intersection.[2] The speed limit on Carpinteria Avenue adjacent to Dump Road is 35 MPH. Assuming a conservative 40 MPH design speed, the Caltrans corner sight distance standard is 440 feet.

Dump Road is located on a section of Carpinteria Avenue that is relatively flat with horizontal curves located to the east and the west. As shown on Figure 6, the sight distance looking to the west extends approximately 970 feet to a curve in Carpinteria Avenue. The sight distance looking to the east extends approximately 660 feet to a curve in Carpinteria Avenue. These sight distances exceed the Caltrans 440-foot minimum requirement – indicating adequate sight distances for vehicles entering and exiting the intersection.

PARKING AND VEHICLE STAGING

The Project would utilize 10 to 15 employees during peak demolition and remediation periods. There will also be demolition and soil excavation equipment that will need to be staged onsite. Employee parking and equipment staging would be easily accommodated at various locations on the 55-acre site during each phase of the Project. The construction management plan will develop employee parking and equipment staging areas as the Project proceeds in sequence.

VMT ANALYSIS

CEQA Guidelines. The VMT thresholds and analysis procedures outlined in the California Governor's Office of Planning and Research (OPR) Technical Advisory on Transportation Impacts in CEQA[3] provide the following guidance on the types of vehicles that are subject to the VMT significance criteria:

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2 Highway Design Manual, California Department of Transportation, 7th Edition, July 2020.

3 Technical Advisory on Evaluating Transportation Impacts in CEQA, Governor's Office of Planning and Research, December 2018.

> **"Vehicle Types**. Proposed Section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project." Here, the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks."

The Technical Advisory also provides screening tools to determine when a project may have a significant VMT impacts, as follows:

> "Many agencies use "screening thresholds" to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. (See e.g., CEQA Guidelines, §§ 15063(c)(3)(C), 15128, and Appendix G.) As explained below, this technical advisory suggests that lead agencies may screen out VMT impacts using project size, maps, transit availability, and provision of affordable housing.
>
> *Screening Threshold for Small Projects*
>
> Many local agencies have developed screening thresholds to indicate when detailed analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than significant transportation impact."

The data presented in Table 2 indicate that the employee component of the Project would generate 26 average daily vehicle trips (excluding truck trips). The Project would therefore have a "less-than-significant" VMT impact based on the CEQA guidelines screening criteria for small projects (110 ADT or less).

This concludes ATE's traffic, parking and VMT analysis for the Decommissioning and Remediation of the Carpinteria Oil and Gas Processing Facilities

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SAS

Attachments

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PROJECT SITE LOCATION

FIGURE 1

JH - ATE#21043

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INBOUND TRUCK ROUTES

FIGURE 2

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ASSOCIATED
TRANSPORTATION
ENGINEERS

OUTBOUND TRUCK ROUTES

FIGURE 3

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ASSOCIATED TRANSPORTATION ENGINEERS

INBOUND EMPLOYEE ROUTES

FIGURE 4

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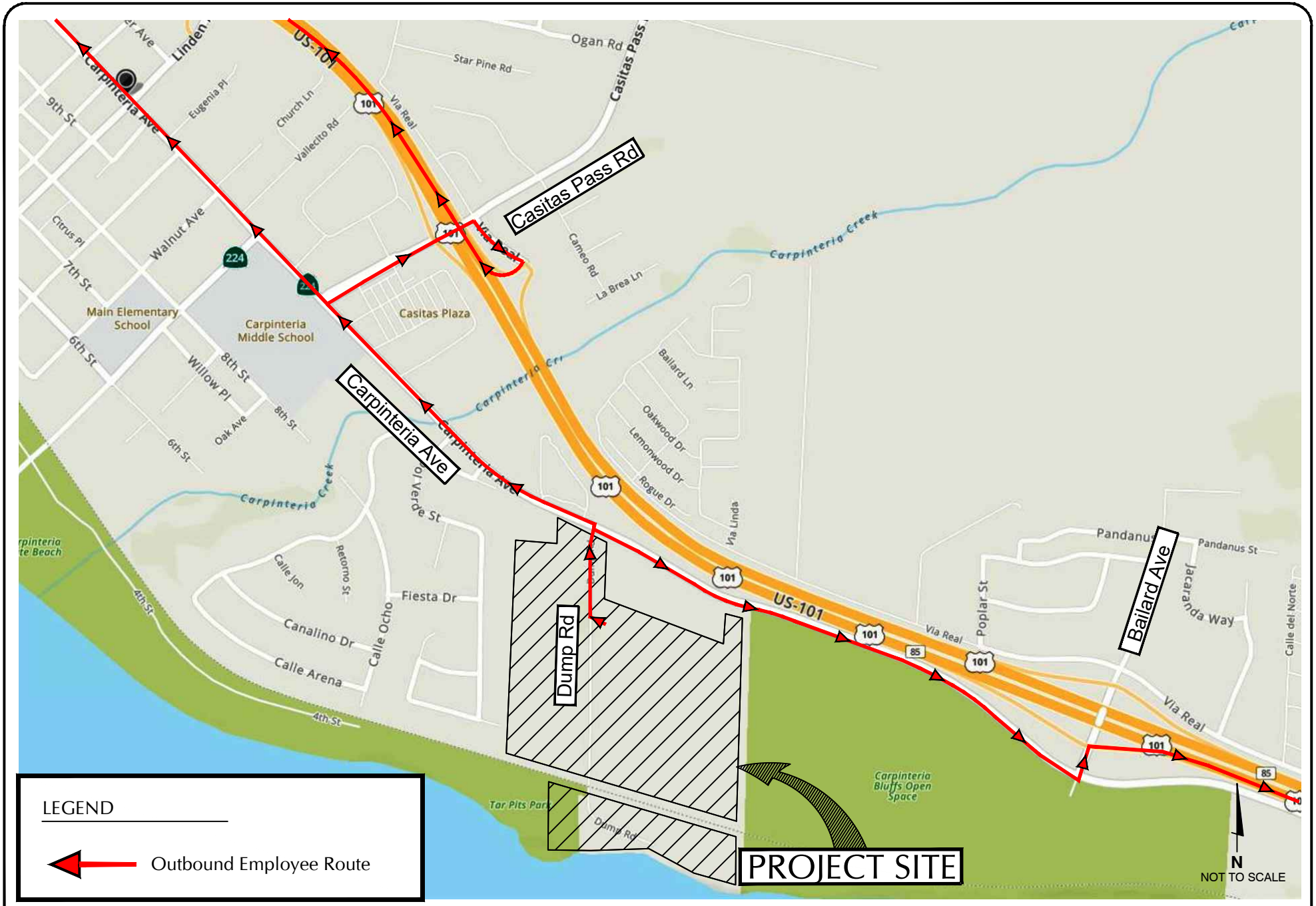

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OUTBOUND EMPLOYEE ROUTES

FIGURE 5

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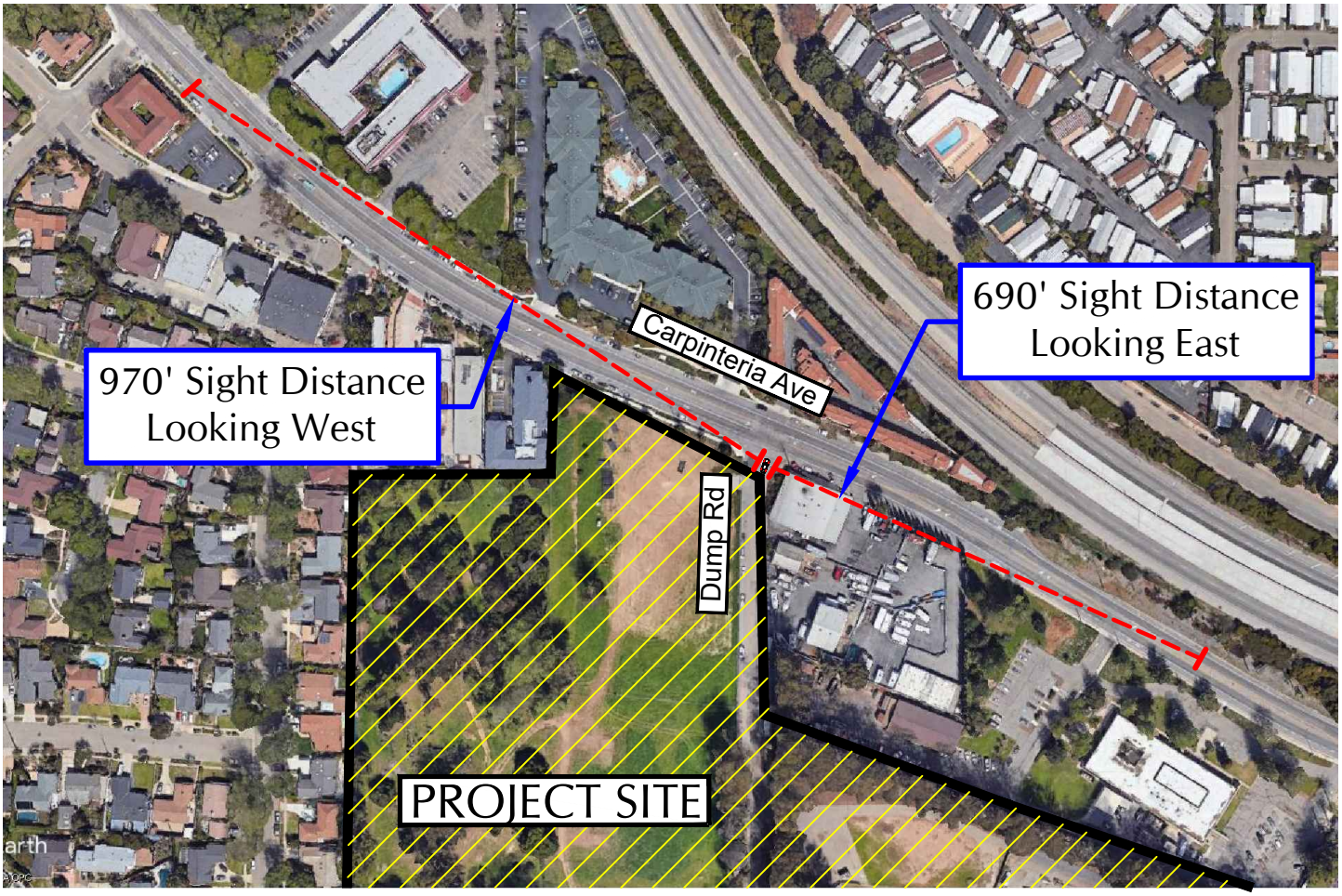
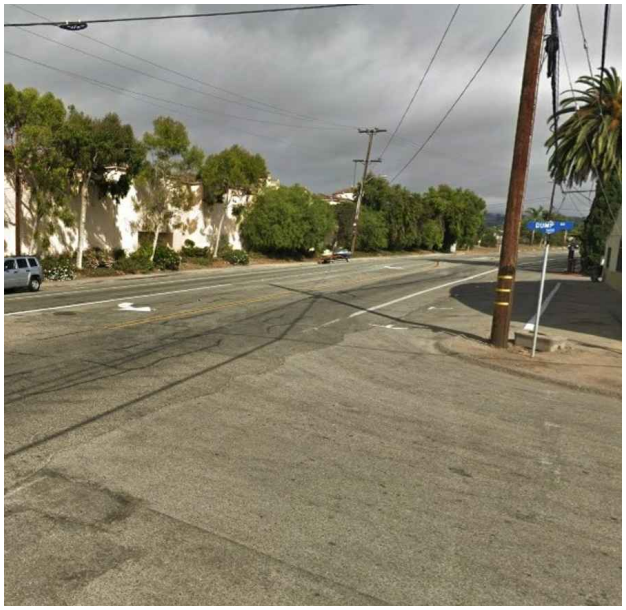


Looking West

Looking East



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CARPINTERIA AVENUE / DUMP ROAD INTERSECTION
SIGHT DISTANCE

FIGURE 6

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