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Mitigated Negative Declaration for the Imperial Center (Phase I) Project City of Imperial, California

Prepared for

City of Imperial
Planning and Development Department
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Imperial, CA 92251

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List of Acronyms/Abbreviations

AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ACM	asbestos containing materials
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AQMP	Air Quality Management Plan
BMP	Best Management Practices
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protections Agency
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CO_2	Carbon Dioxide
County	County of Imperial
CUPA	Certified Unified Program Agency
dB	Decibel
dB(A)	A-weighted Decibel
DTSC	Department of Toxic Substances Control
EDA	Economic Development Administration
ESA	Environmental Site Assessment
FHWA	Federal Highway Administration
GHG	Greenhouse Gas
GSL	GS Lyon Consultants, Inc.
HMMP	Hazardous Materials Management Plan
H&S	Health and Safety
HUD	Housing and Urban Development
ICAPCD	Imperial County Air Pollution Control District
IID	Imperial Irrigation District
JD	Jurisdictional Delineation
LBP	Lead-based paint
L_{dn}	Day-Night Average Sound Level
$L_{eq(1)}$	One-Hour Average Sound Level
$L_{eq(12)}$	Twelve-Hour Average Sound Level
LOS	Level of Service
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
MMRP	Mitigation Monitoring and Report Program
MND	Mitigated Negative Declaration
mph	Miles per hour
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO_x	Nitrogen Oxides
NO_2	Nitrogen Dioxide
O_3	Ozone
OPR	Office of Planning and Research
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter

PM_{10}	Particulate matter less than 10 microns in diameter
ppm	Parts per million
PSA	project survey area
RCRA	Resource Conservation and Recovery Act of 1976
REC	Recognized Environmental Conditions
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
SCIC	South Coast Information Center
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SR-89	State Route 89
SSAB	Salton Sea Air Basin
SWRCB	State Water Resources Control Board
TIS	Traffic Impact Statement
TNM	Traffic Noise Model
USACE	United States Army Corps of Engineers
U.S. EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	Volatile Organic Compounds

1.0 Introduction

1.1 Project Needs and Objectives

The primary objective of the Imperial Center (Phase I) project (project) proposed by Oasis Growth Partner, LLC is to construct commercial development with restaurants, retail, and hotel uses to accommodate continued growth, generate revenue, and to attract tourism to the City of Imperial (City).

1.2 Project Location and Setting

The project is located on 25 acres in the northwest corner of the State Route 86 (SR-86) and Neckel Road intersection in the city of Imperial. Figure 1 shows the regional location of the project site. As shown in Figure 2, the site is fairly flat and is located in the El Centro Quadrangle, Township 15 South and Range 13 East.

The site currently contains graded land, a foundation and partial structure, roads, channels, and desert saltbrush scrub (see Figure 2). A vacant single-family home is located in the southern area of the site along Neckel Road. Dirt channels run along the eastern project boundary and the northern project boundary. The channel along the eastern boundary is operated by the Imperial Irrigation District (IID). A dirt access maintenance road exists along the channel.

The site is located in a mixed agricultural and residential area (Figure 3). Large-lot single-family homes exist to the southwest and south. Single-family tract homes and multi-family homes are located to the east. The Morning Star Subdivision is situated directly north and west of the project site where agricultural uses currently exist. This residential development has been approved but has not been constructed.

1.3 Project Description

1.3.1 Imperial Center (Phase I) Project

The project consists of an 8-acre portion of the 25-acre property at the northwest corner of SR-86 and Neckel Road which would be used for commercial development. The commercial uses include a hotel, restaurant, retail, and a drive-through building with use to be determined (see Figure 3). A four-story hotel would be located in the northern area of the site and would include 108 rooms, a hotel restaurant, and an indoor pool. A 5,000-square-foot restaurant (likely a Denny's) is proposed to the southwest of the hotel. The southeastern corner of the site, adjacent to SR-86 and Neckel Road, would include three retail buildings totaling approximately 10,000 square feet; while the southwestern corner would include a 2,500-square-foot drive-through building (tenant unknown). A lot line adjustment would be required to complete the project.

1.3.2 Off-site Improvements

Economic Development Administration (EDA) funding is requested in order to construct the water and sewer infrastructure connections in support of the Imperial Center project. There is currently water and sewer service east of SR-86 and the proposed water and sewer pipelines would enable a connection to the project site where no service currently exists. While EDA funding would not be used for the Imperial Center commercial development itself, the Imperial Center project would be the primary beneficiary of the off-site water and sewer improvements. The NEPA compliance document associated with the EDA funding of the off-site improvements is addressed separately in an EDA Environmental Narrative.

In order to provide water and sewer connections to the project site, "jack-and-bore" directional drilling beneath SR-86 would be required. The pipeline extensions would occur in two locations approximately ¼ mile apart and described as follows:

- The first location would be parallel and adjacent to Neckel Road at the southern boundary of the Imperial Center project site. Two tunnels would be drilled at this location. The boring pits at the western end of the drillings would be situated approximately 60 feet west of the intersection of Neckel Road and SR-86. The eastern boring pits would be located approximately 33 feet east of the intersection. The boring pits are 10 feet by 15 feet and are approximately 8 feet deep. The length of the drillings is approximately 240 feet. The pit locations at this site are within the existing Neckel Road right-of-way.
- The second location would be approximately 1,340 feet north of the intersection of Neckel Road and SR-86, along the northerly boundary of the Imperial Center project. The boring pit at the western end of the drilling is approximately 70 feet west of the edge of SR-86, and approximately 15 feet west of the western edge of the Dahlia Drain service road. The eastern boring pit is approximately 45 feet east of the eastern edge of SR-86. The length of the drilling is approximately 245 feet.

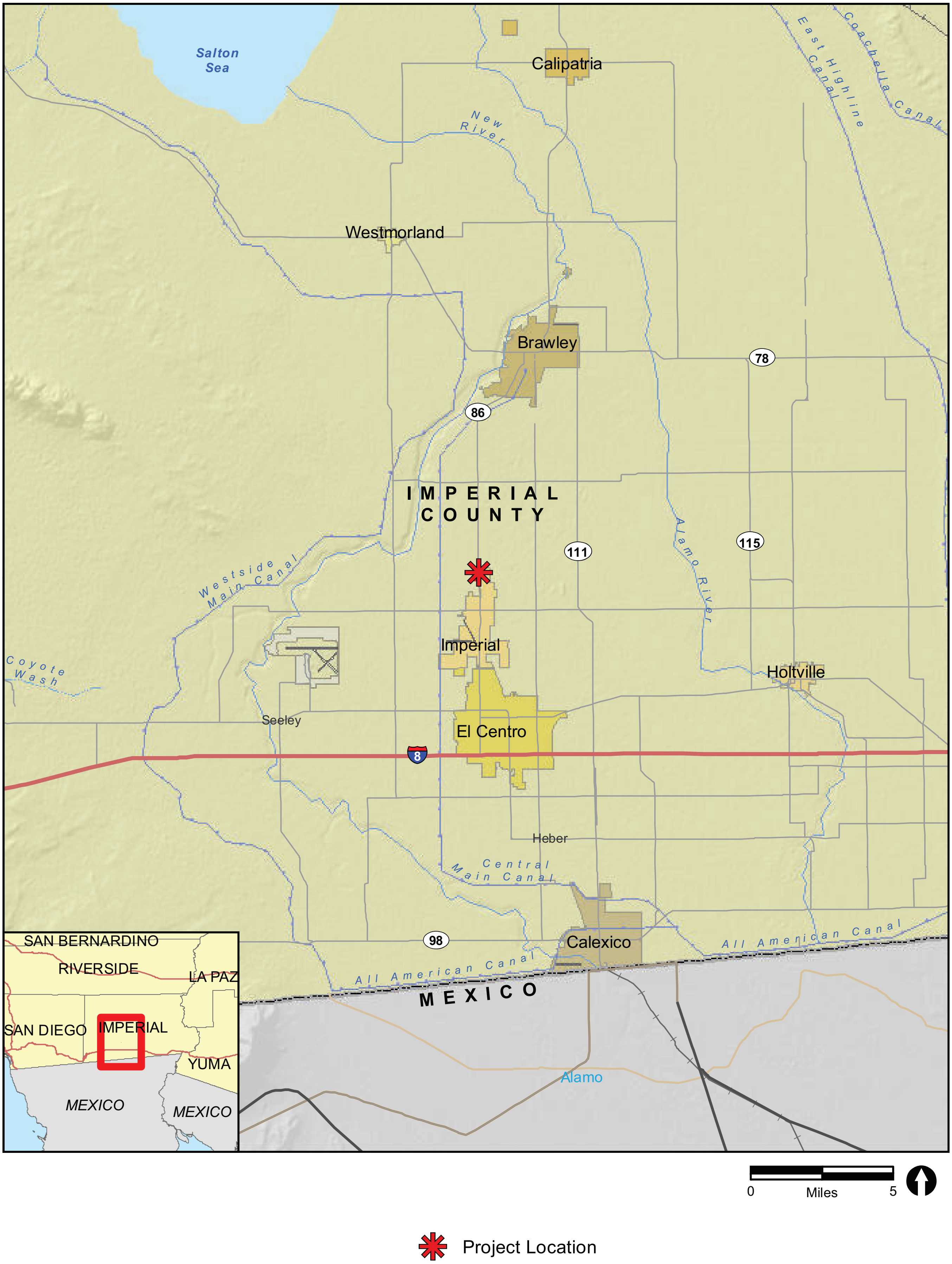

FIGURE 1

Regional Location

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Image Source: USDA FSA NAIP (flown April 2010)

FIGURE 2

Project Location on Aerial Photograph

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Map Source: Creative Design Associates

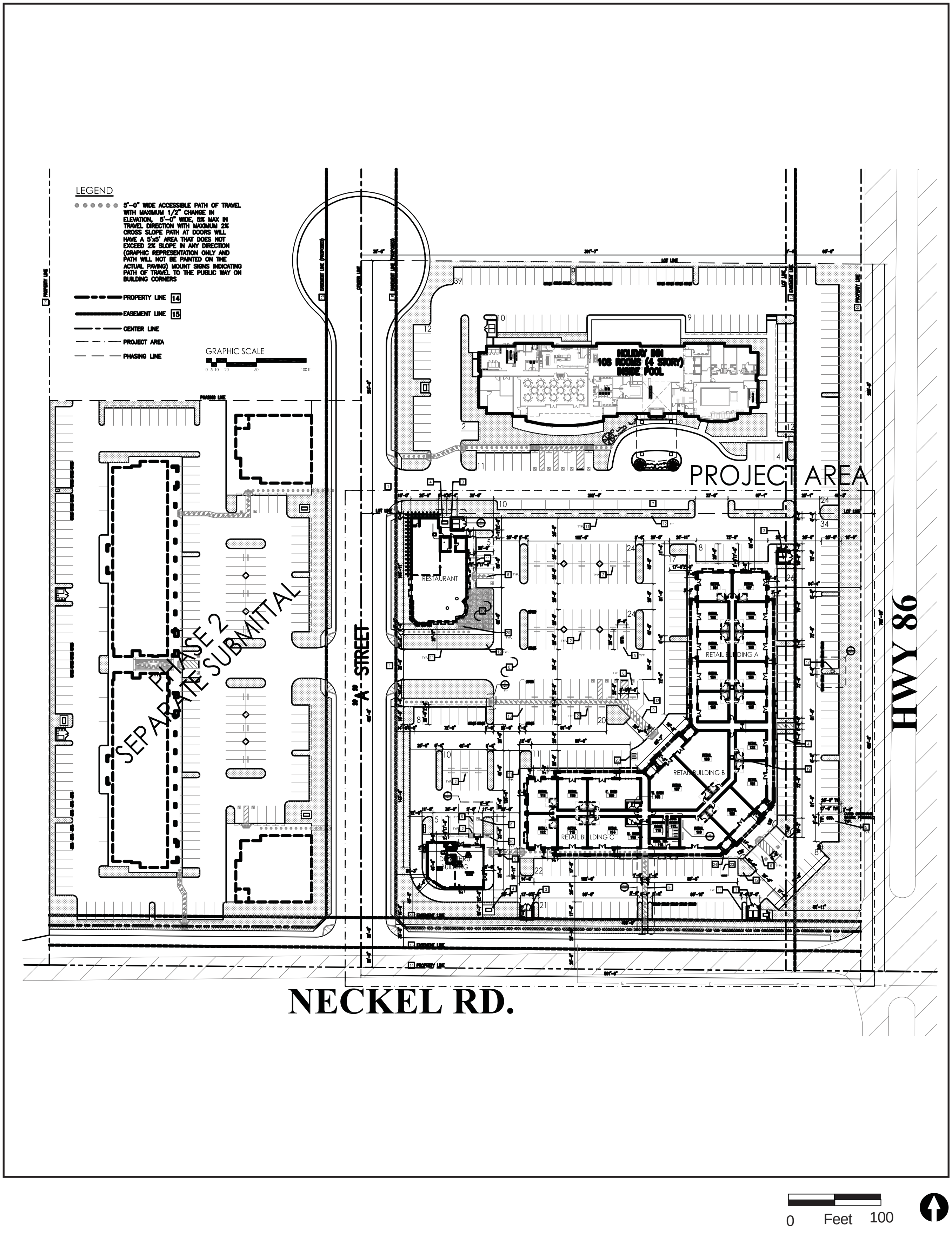

FIGURE 3

Site Plan

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1.3.3 Access

Access would be taken from Neckel Road via proposed Street "A." Street "A" would be two lanes in both directions and would extend north-south through the project site and would terminate in a cul-de-sac. At the connection to Neckel Street, Street "A" would have a 90-foot easement in order to provide Americans with Disabilities Act (ADA) compliant ramps. The portion of Street "A" extending through the site would include a 70-foot access easement for 50 feet of roadway bed and a 10-foot sidewalk and landscaping area on each side. The sidewalk would be 4.5 feet wide, the landscape area would be 5 feet wide, and the gutter would be 6 inches. The landscaping plant palette and design would be completed in accordance with the City standards.

Frontage roadway improvements would be completed on Neckel Road. The project would dedicate an additional 20 feet of easement for Neckel Road improvements. Proposed improvements would include additional roadbed, a curb, a 5.5-foot sidewalk and 4.5-foot-wide buffer.

1.3.4 Parking

The project includes enough surface parking to comply with City of Imperial and ADA requirements. The City of Imperial requirements for the project include 108 spaces for the hotel, 59 spaces for the restaurant, and 59 spaces for the drive-through for a total of 226 spaces. The project proposes to include a total of 226 parking spaces.

1.3.5 Utilities

The project includes storm water, sewer, water, power, television, and phone utility improvements, as described below.

Storm Water. The project site would drain toward the west. On-site storm water improvements would include 24-inch storm water drains along the northern portion of the project site and within "Street A." On-site drainage as well as drainage from adjacent development to the west and northwest would be directed into these mains via 12-inch laterals.

Sewer. The project's utility lines will be connected with existing utility lines across SR-86 by jack-and-bore tunneling beneath the roadway. A new lift station would also be built, at an as yet undetermined location on the site.

Water. As with sewer, the project's water lines would connect with existing water lines east of SR-86 by jack-and-bore tunneling beneath the roadway.

Power, Television and Phone Lines. A 10-foot public utilities easement would be provided along proposed Street "A" for underground power, television, and phone lines.

1.4 Land Use and Zoning

The project site is designated as Neighborhood Commercial in the City of Imperial General Plan. The Neighborhood Commercial designation is intended to provide shopping centers (e.g., grocery, drug store, retail) approximately 10 acres in size at major intersections within residential areas.

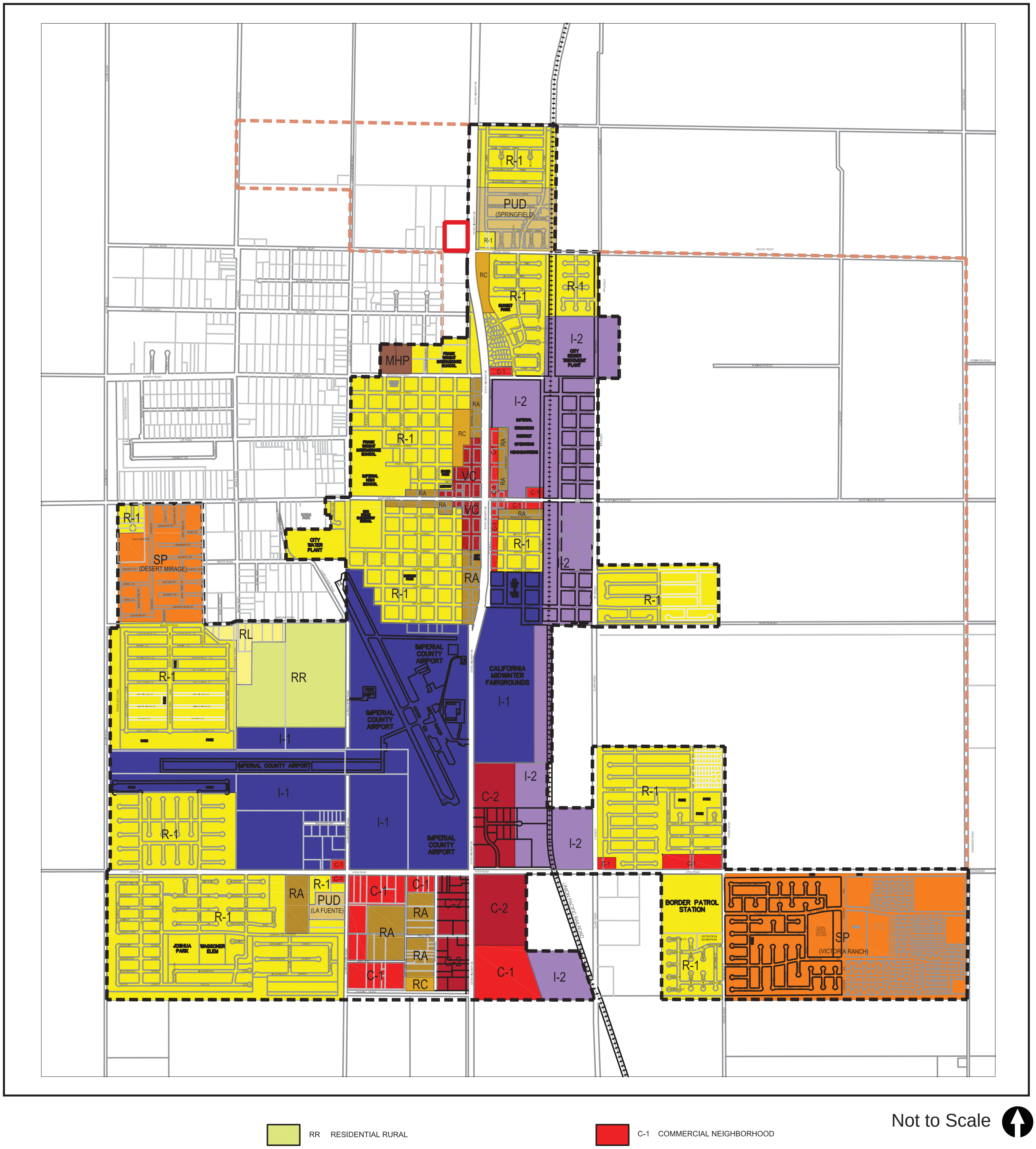
The zoning (Figure 4) of the project site is A2U, which is intended to allow agricultural use until the site is permitted/developed for another use. Once the site is permitted/developed with another use, the zoning classification regulations for that use would apply. This zoning streamlines the approval process, as there is no need for a General Plan Amendment to change land use from agricultural to residential, commercial, or another urban use.

1.5 Authority to Prepare a Mitigated Negative Declaration

As provided in the California Environmental Quality Act (CEQA) Section 21064.5, a Mitigated Negative Declaration (MND) may be prepared for a project subject to CEQA “when the Initial Study has identified potentially significant effects on the environment, but revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment.”

The City of Imperial is the lead agency under CEQA and is responsible for planning and implementation of the project. Based on the findings of the Initial Study/Environmental Checklist for this project, the City has determined that preparation of a MND is the appropriate method by which to obtain compliance with CEQA. The Initial Study/Environmental Checklist is included as Section 4.0 of this report. Based on this Initial Study/Environmental Checklist, it was determined that the project could have a significant effect on the environment related to air quality, archaeological resources, biological resources, greenhouse gas (GHG), hazards and hazardous materials, noise, and transportation/traffic. However, incorporation of project design and mitigation measures into the project would reduce impacts to below a level of significance.

Map Source: The Holt Group



🟩 RR RESIDENTIAL RURAL

🟨 RL RESIDENTIAL LOW DENSITY

🟨 R-1 RESIDENTIAL SINGLE FAMILY

🟧 RC RESIDENTIAL CONDOMINIUM

🟫 RA RESIDENTIAL APARTMENT

🟫 PUD PLANNED UNIT DEVELOPMENT

🟫 MHP MOBILE HOME PARK

- - - IMPERIAL CITY LIMITS

- - - SPHERE OF INFLUENCE BOUNDARY

🟥 C-1 COMMERCIAL NEIGHBORHOOD

🟥 C-2 COMMERCIAL GENERAL

🟥 VC COMMERCIAL VILLAGE

🟦 I-1 GENERAL INDUSTRIAL

🟪 I-2 RAIL SERVED INDUSTRIAL

🟧 SP SPECIFIC PLAN OVERLAY

□ PROJECT BOUNDARY

FIGURE 4

City of Imperial Zoning Map

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1.6 Results of Public Review

( ) No comments were received during the public input period.

( ) Comments were received during the public input period, but they do not address the Draft Mitigated Negative Declaration findings or the accuracy or completeness of the Initial Study. No response is necessary. The letters are attached.

( ) Comments addressing the findings of the Draft Mitigated Negative Declaration and/or accuracy or completeness of the Initial Study were received during the public input period. The letters and responses are presented at the beginning of this Final MND.

Copies of the Mitigated Negative Declaration and any Initial Study support material are available for review at the City of Imperial, 420 South Imperial Avenue, Imperial, California 92251.

______________________________ ________________________
Signature Date

______________________________ ______________________________
City of Imperial Date of Final MND

2.0 Mitigated Negative Declaration

This MND addresses issues determined to be potentially significant in the Initial Study for the project. Measures included in the project to mitigate these impacts are located in the Mitigation Monitoring and Reporting Program (Section 3.0). The complete Initial Study Checklist is included in Section 4.0.

2.1 Air Quality

An air quality analysis was prepared by UltraSystems Environmental to assess the potential air quality impacts of the project. The air quality analysis is based on the traffic impact study (TIS) prepared for the project. As discussed in detail in Section 2.7, the TIS can be considered a worst-case analysis. Therefore, this is a worst-case air quality analysis. The entire air quality analysis can be found as Appendix A to this document.

2.1.1 Existing Conditions

Air pollution affects all southern Californians regardless of where they live or their environmental lifestyles. Effects can include the following:

- Increased respiratory infection
- Increased discomfort
- Missed days from work and school
- Increased mortality.

In addition to the human impact, polluted air also damages the agricultural industry and natural environment. The notorious southern California smog can often be aesthetically unpleasant as well. Air pollution can also lead to acid rain, which can be harmful to plant life and building materials.

The analysis of impacts is based on state and federal ambient air quality standards and assessed in accordance with the guidelines, policies, and standards established by the City of Imperial and the Imperial County Air Pollution Control District (ICAPCD).

2.1.1.1 Regulatory Framework

The state of California is divided geographically into 15 air basins for the purpose of managing the air resources of the state on a regional basis. Areas within each air basin are considered to share the same air masses and, therefore, are expected to have similar ambient air quality. If an air basin is not in either federal or state attainment for a particular pollutant, the basin is classified as moderate, serious, severe, or extreme non-attainment area (there is also a marginal classification for federal non-attainment areas).

The project is located in the city of Imperial, which is in the Salton Sea Air Basin (SSAB). The SSAB includes the Imperial Valley and the central part of Riverside County, including Coachella Valley. The Imperial Valley is bordered by the Salton Sea to the north, the Anza-Borrego Desert State Park to the west, the Chocolate Mountains to the northeast, and the U.S./Mexico border to the south.

Cars, trucks, buses, and agriculture activities are major sources of air pollution in the SSAB, in which the project site is located. Other sources of air pollution include construction equipment, trains, and airplanes. Emission standards for mobile sources are established by state and federal agencies such as the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (U.S. EPA). Reducing mobile source emissions requires the technological improvement of existing mobile sources and the examination of future mobile sources, such as those associated with new or modification projects.

Stationary sources of air pollution are generally regulated through the permitting process, as implemented by the local air district. The regulatory framework described below details the federal and state agencies that are in charge of monitoring and controlling mobile and stationary source air pollutants and what measures are currently being taken to achieve and maintain healthful air quality in the SSAB.

Ambient Air Quality Standards (AAQS) represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. Seven pollutants of primary concern were designated: ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), and suspended particulates that are 10 microns or less in diameter (PM_{10}) and 2.5 microns or less in diameter ($PM_{2.5}$). In 1997, the U.S. EPA promulgated a new 8-hour ozone standard of 8 parts per hundred million (pphm) to replace the existing 1-hour standard of 12 pphm, and a new standard for “fine” particulate matter that is 2.5 microns or less in diameter ($PM_{2.5}$). The existing federal standard for PM_{10} has been retained. A full description of each of these pollution types is included in Appendix A of this document.

The U.S. EPA allows states the option to develop different (stricter) standards. The state of California generally has set more stringent limits on the seven criteria pollutants. The SSAB is a state and federal non-attainment area for ozone and PM_{10}.

The ICAPCD is the agency that regulates air quality in the SSAB. The ICAPCD provides guidance to mitigate adverse impacts to air quality from development projects within Imperial County (County). The ICAPCD has prepared guidelines for the implementation of CEQA in their *CEQA Air Quality Handbook*, dated November 2007. The document is intended to develop protocol to address air quality impacts in the SSAB.

2.1.1.2 Air Quality Plans

Air pollution control in the region is currently guided by two air quality plans. The first is designed to ensure that the County attains the National Ambient Air Quality Standards (NAAQS) for ozone. When the ozone NAAQS of 0.080 parts per million (ppm) was promulgated in 1997, Imperial County was classified as a “marginal” nonattainment area. The County failed to meet the June 15, 2007 deadline for attainment and was redesignated as a “moderate” nonattainment area. Moderate attainment areas were to meet the standard as expeditiously as practicable, but no later than June 15, 2010. To this end, the ICAPCD began developing the 2008 8-hour Ozone Air Quality Management Plan (AQMP). This plan sought to reduce emission of the ozone precursors reactive organic gas (ROG) and nitrogen oxide (NO_x) through a set of control measures.

Meanwhile, after reviewing ambient air monitoring data for 2006–2008, the U.S. EPA determined that the County had attained the 1997 8-hour standard for ozone. As a result, several elements of the 2008 AQMP were no longer required, and will not be required unless the 8-hour standard is violated again. Work on the 2008 AQMP was abandoned. However, the U.S. EPA did not reclassify Imperial County as being in attainment because the County has not met other requirements for redesignation and has not submitted a maintenance plan.

The ICAPCD has prepared the 2009 8-Hour Ozone Modified Air Quality Management Plan. The Modified AQMP serves as a comprehensive planning document intended to provide guidance to the ICAPCD, the County, and other local agencies on how to continue maintaining the 1997 8-hour ozone NAAQS.

The other plan is the State Implementation Plan (SIP) for PM_{10} in the Imperial Valley, which addresses attainment of the Clean Air Act standards. The plan focuses on the 24-hour standard for the Brawley/El Centro and Calexico areas. Although, at the time of the plan’s adoption, insufficient data were available for demonstrating attainment, the plan includes several fugitive dust control measures, which have been adopted by the ICAPCD. Because the 1993 SIP is the only one that has been approved by the U.S. EPA, it continues in force. However, it should be noted that on August 11, 2009, the ICAPCD adopted the 2009 State Implementation Plan for Particulate Matter Less than 10 Microns in Aerodynamic Diameter. The plan demonstrates attainment of the federal 24-hour standard of 150 $\mu g/m^3$ provided that five exceedances between 2006 and 2008 are removed from consideration of the region’s attainment status. Three exceedances were due to entrainment of dust by unusually high winds; these may be excepted by the U.S. EPA’s “Exceptional Events Rule,” which recognizes that certain naturally occurring, uncontrollable events such as high winds and wildfires, can result in exceedances of federal standards. The other exceedances during 2006–2008 were, according to the ICAPCD’s documentation, due to transport over the border from Mexicali, Mexico.

Regional IX of the U.S. EPA has expressed its reservations about the cases for the five exceedances, and recommended to the ICAPCD that it delay adoption of the 2009 SIP revisions until it determines whether the claimed exception are valid. At a May 29, 2010 hearing before the CARB, CARB staff reported that the U.S. EPA has advised the CARB on May 24, 2010 that it would not approve the SIP revision without further considerations. The CARB voted unanimously to “take no action” on the SIP revision. The SIP revisions, which are currently based upon 2006–2008 data, will have to be reformulated on the basis of 2011–2013 data. The delay by the CARB in adoption of the SIP revision may result in penalties to ICAPCD, including substitution of a Federal Implementation Plan for the SIP and loss of funding for transportation projects. The CARB and the ICAPCD are attempting to work with the U.S. EPA to avoid this outcome.

2.1.1.3 Existing Air Quality

Air quality at a particular location is a function of the kinds and amounts of pollutants being emitted into the air locally and throughout the basin and the dispersal rates of pollutants within the region. The major factors affecting pollutant dispersion are wind speed and direction, the vertical dispersion of pollutants (which is affected by inversions), and the local topography.

Air quality is commonly expressed as the number of days in which air pollution levels exceed state standards set by the CARB or federal standards set by the U.S. EPA. The ICAPCD maintains air quality monitoring stations throughout Imperial County. Air pollutant concentrations and meteorological information are continuously recorded at these stations. Measurements are then used by scientists to help forecast daily air pollution levels. The nearest ambient monitoring station to the project site (approximately 4.9 miles away) is the 9th Street Station in El Centro, which measures O_3, NO_2, CO, PM_{10}, and $PM_{2.5}$, as well as other pollutants not the subject of this analysis. Ambient pollutant concentrations measured at this monitoring station in 2009–2011 are presented in Table 1. During the three-year period, the following ambient air quality standards were exceeded at least once: 1-hour and 8-hour California AAQS for O_3, and 24-hour NAAQS for $PM_{2.5}$.As discussed above, the SSAB is in attainment of all pollutants except for ozone and PM_{10}. The SSAB is a state and federal non-attainment area for ozone and PM_{10}.

TABLE 1
AMBIENT CRITERIA POLLUTANT CONCENTRATION DATA FOR EL CENTRO

		150 S. 9th Street El Centro		
Air Pollutant	Standard/Exceedance	2009	2010	2011
Carbon Monoxide (CO)	Year Coverage*	92%	93%	98%
	National Maximum 1-hour Concentration (ppm)	2.5	2.5	NM
	National Maximum 8-hour Concentration (ppm)	3.20	5.61	9.01
	State Maximum 8-hour Concentration (ppm)	3.20	5.61	9.01
	# Days>National 8-hour Standard of >9 ppm	0	0	0
	# Days>California 8-hour Standard of >9 ppm	0	0	0
Ozone (O$_3$)	Year Coverage*	98%	95%	98%
	State Maximum 1-hour Concentration (ppm)	0.111	0.122	0.141
	National Maximum 8-hour Concentration (ppm)	0.085	0.082	0.084
	State Maximum 8-hour Concentration (ppm)	0.086	0.082	0.084
	# Days>National 1-hour Standard of >0.12 ppm	0.0	0.0	7
	# Days>California 1-hour Standard of >0.09 ppm	9	3	18
	# Days>National 8-hour Standard of >0.075 ppm	11	10	12
	# Days>California 8-hour Standard of >0.07 ppm	30	29	21
Nitrogen Dioxide (NO$_2$)	Year Coverage	99%	74%	76%
	# Days>California 1-hour Standard of >0.18 ppm	0.0	0.0	0.0
	State Annual Average (ppm)	0.008	0.004	0.009
Sulfur Dioxide (SO$_2$)	Year Coverage	NM	NM	NM
	State Maximum 24-hour Concentration (ppm)	NM	NM	NM
	State Annual Average (ppm)	NM	NM	NM
	# Days>California 24-hour Standard of >0.04 ppm	NM	NM	NM
Respirable Particulate Matter (PM$_{10}$)	Year Coverage	98%	88%	97%
	National Maximum 24-hour Concentration (µg/m^3)	243.1	69.4	81.9
	State Maximum 24-hour Concentration (µg/m^3)	233.7	70.2	80.3
	# Days>National 24-hour Standard of >150 µg/m^3	13.1	0.0	0.0
	# Days>California 24-hour Standard of >50 µg/m^3	104.6	ND	ND
	National Annual Average (µg/m^3)	49.9	32.9	32.6
	State Annual Average (µg/m^3)	47.9	ND	ND
Fine Particulate Matter (PM$_{2.5}$)	Year Coverage	98%	94%	99%
	National Maximum 24-hour Concentration (µg/m^3)	37.7	19.9	54.4
	State Maximum 24-hour Concentration (µg/m^3)	37.7	19.9	54.4
	# Days>National 24-hour Standard of >35 µg/m^3	3.1	0.0	6.2
	National Annual Average (µg/m^3)	8.0	6.6	7.5
	State Annual Average (µg/m^3)	8.0	6.6	7.5
Lead	Not monitored at El Centro			
Sulfates	Not monitored at El Centro			

NOTES:
[*]Coverage is for the California 8-hour standard.
ppm = parts per million by volume
µg/m^3 = micrograms per cubic meter
NM = Not monitored at the station
ND = There were insufficient (or no) data available to determine the value.

2.1.1.4 Existing Sources of Emissions

Natural wind events and agricultural operations are major sources of air pollution in the SSAB. Other sources of emissions are categorized as stationary and mobile. Stationary sources are generally categorized as either point sources or area sources. Point sources are large emitters at an identified location such as power plants and manufacturing facilities. Area sources consist of small emissions in a general area such as water heaters and architectural coating. Mobile sources are categorized as either on-road or off-road. On-road mobile sources are vehicles on freeways and roadways. Off-road sources include trains, ships, construction equipment, and other emitters that operate off freeways and roadways.

2.1.2 Significance Thresholds

2.1.2.1 California Air Resources Board

For purposes of assessing the significance of air quality impacts, the CARB has established guidelines, as described below.

For long-term emissions, the direct impacts of a project can be measured by the degree to which the project is consistent with regional plans to improve and maintain air quality. The regional plan for El Centro is the Air Quality Attainment Plan for Imperial County. The CARB provides criteria for determining whether a project conforms to the Air Quality Attainment Plan, which include the following:

- Is a regional air quality plan being implemented in the project area?
- Is the project consistent with the growth assumptions in the regional air quality plan?
- Does the project incorporate all feasible and available air quality control measures?

2.1.2.2 Imperial County

The ICAPCD *CEQA Air Quality Handbook* establishes the following four separate evaluation categories (2007):

- Comparison of calculated project emissions to ICAPCD emission thresholds.
- Consistency with the most recent Clean Air Plan for Imperial County.
- Comparison of predicted ambient pollutant concentrations resulting from the project to state and federal health standards, when applicable.
- The evaluation of special conditions which apply to certain projects.

The ICAPCD *CEQA Air Quality Handbook* states that the approach to analysis of "construction should be qualitative as opposed to quantitative and the ICAPCD "recommends the implementation of effective and comprehensive mitigation measures" (2007). The standard mitigation measures for construction equipment and fugitive PM_{10} control for construction activities should be implemented at all construction sites. Additional measures may apply to construction sites greater than 4 acres. Control measures for fugitive PM_{10} construction emissions in Imperial County are found in the ICAPCD Regulation VIII and in the Imperial County *CEQA Air Quality Handbook* and are discussed below.

2.1.2.3 Emissions Criteria

To determine whether a project would result in a violation of an air quality standard or contribute substantially to an existing or proposed violation, it is necessary to look at thresholds established by the ICAPCD. Thresholds for project construction and operation are presented in Tables 2 and 3, respectively.

TABLE 2
THRESHOLDS OF SIGNIFICANCE FOR PROJECT CONSTRUCTION

Pollutant	Threshold (pounds/day)
PM_{10}	150
ROG	75
NO_x	100
CO	550

PM_{10} = 10-micron particulate matter; ROG = reactive organic gas; NOx = nitrogen dioxide; and CO = carbon monoxide.

TABLE 3
THRESHOLDS OF SIGNIFICANCE FOR PROJECT OPERATIONS

Pollutant	Tier 1 (pounds/day)	Tier 2 (pounds/day)
PM_{10}	Less than 150	150 and greater
NO_x	Less than 55	55 and greater
SO_x	Less than 150	150 and greater
CO	Less than 550	550 and greater
ROG	Less than 55	55 and greater
Level of Significance	Potentially Significant	Significant Impact

PM_{10} = 10-micron particulate matter; NOx = nitrogen dioxide; CO = carbon monoxide; and ROG = reactive organic gas.

The ICAPCD does not have a threshold for $PM_{2.5}$. A threshold of 55 pounds per day for $PM_{2.5}$ was obtained from the South Coast Air Quality Management District's *Final Methodology to Calculate $PM_{2.5}$ and $PM_{2.5}$ Significance Thresholds* (SCAQMD 2006).

For project operations, a project that results in emissions less than the thresholds shown in Table 3 would be classified as a Tier 1 project and would have potential adverse impacts on local air quality. Projects that fall under the Tier 1 category must implement all standard measures listed in the Imperial County *CEQA Air Quality Handbook* and discussed below. A project that results in emissions greater than the thresholds shown in Table 3 would be classified as a Tier 2 project and would have significant impacts on local air quality. Projects that fall under the Tier 2 category must implement all feasible and practicable discretionary mitigation measures, in addition to all standard measures specified in the Imperial County *CEQA Air Quality Handbook*.

2.1.2.4 Public Nuisance Law (Odors)

The State of California Health and Safety Code (H&S) Sections 41700 and 41705, commonly referred to as public nuisance law, as well as the Imperial County Air Pollution Control Rule 407, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The provisions of these regulations do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

Every use and operation shall be conducted so that no unreasonable heat, odor, vapor, glare, vibration (displacement), dust, smoke, or other forms of air pollution subject to air pollution control district standards of particulate matter shall be discernible at the property line of the parcel upon which the use or operation is located. Therefore, any unreasonable odor discernible at the property line of the project site will be considered a significant odor impact.

2.1.3 Analysis of Impacts

Air quality impacts would result from the construction and operation of the project. Operational impacts can occur on two levels: regional impacts resulting from development or local hot-spot effects stemming from sensitive receivers being placed close to highly congested roadways. In the case of this project, operational impacts are primarily due to emissions to the basin from mobile sources associated with the vehicular travel along the roadways within the project area. Construction impacts are short-term and result from fugitive dust, equipment exhaust, and indirect effects associated with construction workers and deliveries.

Emissions due to implementation of the project were calculated using the URBEMIS 2007 Version 9.2 computer program. The URBEMIS 2007 program is a tool used to estimate air emissions resulting from land development projects in the state of California. The model generates emissions from three basic sources: construction sources, area sources (e.g., fireplaces, natural gas heating, etc.), and operational sources (e.g., traffic). Inputs to

URBEMIS 2007 include such items as the air basin containing the project, land uses, trip generation rates, trip lengths, vehicle fleet mix (percentage autos, medium truck, etc.), trip distribution (i.e., percent home to work), duration of construction phases, construction equipment usage, grading areas, season, and ambient temperature, as well as other parameters.

2.1.3.1 Construction-Related Emissions

Short-term construction-related emissions are due to the operation of construction equipment and fugitive dust. Heavy-duty construction equipment is usually diesel powered. In general, emissions from diesel-powered equipment contain more nitrogen oxides, sulfur oxides, and particulate matter than gasoline-powered engines. However, diesel-powered engines generally produce less carbon monoxide and less reactive organic gases than do gasoline-powered engines.

Fugitive dust is any solid particulate matter that becomes airborne directly or indirectly as a result of the activities of man or natural events (such as windborne dust), other than that emitted from an exhaust stack. Fugitive dust is recognized by the Imperial County as a contributor to PM_{10} pollution and a health hazard. Construction activities must adhere to the ICAPCD Regulation VIII and the mitigation measures discussed below to reduce significant impacts.

The project would be developed in several phases. Construction of the project would include clearing and grubbing, initial grading and preparation of the entire project site, and building of basic infrastructure to support subsequent development. The hotel and other structures would be built in phases, and would be followed by commercial and school facilities. Since detailed design information was not available at the time this document was prepared, construction-related emission estimates were based on the construction scenario information provided by the project applicant. Estimates of the types and numbers of pieces of equipment anticipated in each phase of construction and development were based on equipment requirements of similar construction projects. Pollutant emissions would vary from day to day depending on the intensity and type of construction activity.

Project construction emissions were estimated using the construction module CalEEMod. For the purpose of this analysis, it was estimated that the construction of the project would take 24 months. A maximum of four and eight pieces of construction equipment were assumed to be operating simultaneously in a given day in the site grading and building construction phases, respectively. In addition, eight additional pieces of paving equipment were assumed when paving and building construction would occur on the same schedule. The types and numbers of pieces of equipment anticipated in each phase of construction and development were estimated based on equipment requirements of similar construction projects. Construction-related emission estimates were based on the default construction scenario information in CalEEMod. The volatile organic compound (VOC) content limits for coatings, as specified in ICAPCD Rule 424, were used to calculate VOC emissions from architectural coating operations. The estimated emissions are presented in Table 4. Modeling assumptions and output files are provided in the air quality analysis in Appendix A.

TABLE 4
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Construction Activity	Maximum Emissions (lbs/day)			
	ROG	NO_x	CO	PM_{10}
Maximum Cumulative Emissions	15.99	88.68	64.71	46.77
Construction Activities	Paving, Building, Coating	Building, Fine Grading	Building, Fine Grading	Building, Fine Grading
ICAPCD Significance Thresholds	*75*	*100*	*550*	*150*
Significant (Yes or No)	No	No	No	No

SOURCE: Calculated by UltraSystems with CalEEMod (Version 2011.1).
ROG = reactive organic gas; NOx = nitrogen dioxide; CO = carbon monoxide; and PM_{10} = 10-micron particulate matter.

Commercial projects whose emissions are below the ICAPCD's significance thresholds must comply with the latest rules adopted for the control of fugitive dust. In addition, the ICAPCD requires the use of "standard" mitigation measures for construction equipment and fugitive dust, as listed in the *CEQA Air Quality Handbook*. The exposure of surrounding sensitive receivers (i.e., residents) to diesel particulate matter is expected to be very low and of short duration. Consequently, potential health effects associated with exposure to diesel particulate matter resulting from construction of the project (which involves the highest use of diesel equipment) would be less than significant.

Implementation of required mitigation measures does not exempt the project from compliance with ICAPCD rules and regulations. The project proponent will have to comply with all the requirements of the ICAPCD's rules and regulations, specifically those of Regulation VIII. Regulation VIII applies to any activity or man-made condition capable of generating fugitive dust, and requires the use of reasonably available control measures to suppress fugitive dust emissions.

2.1.3.2 Operation-Related Emissions

a. Mobile and Area Source Emissions

The project would generate long-term air quality impacts associated with its operation at project occupancy. The primary source of operational emissions would be vehicle exhaust emissions generated from project-induced vehicle trips, known as "mobile source emissions." Other emissions, identified as "area source emissions," would be generated from energy consumption for water and space heating for the hotel, two restaurants, and office building; structural maintenance and landscaping activities; and use of consumer products.

In accordance with the project traffic study, it is assumed that only Phase I of the project would be constructed under the near-term condition. The model-predicted area source and mobile source emissions for Phase I are shown in Table 5. The estimated emissions do not include emission reductions per incorporation of ICAPCD required operational mitigation measures. Detailed output sheets are provided in Appendix A.

TABLE 5
DAILY PROJECT OPERATIONAL EMISSIONS IN PHASE I

Emissions Source	Pollutant (lbs/day)			
	ROG	NO_X	CO	PM_{10}
Area Source Emissions	1.19	1.31	7.21	0.02
Mobile Source Emissions	8.68	29.39	60.88	7.99
Total Operational Emissions	**9.87**	**30.70**	**68.09**	**8.01**
Thresholds for Tier II	*55*	*55*	*550*	*150*
Tier	I	I	I	I

SOURCE: UltraSystems 2012

As indicated in Table 5, the long-term project operational emissions of ROG, NO_x, CO and PM_{10} would be less than significant. The ICAPCD therefore requires that “standard” mitigation measures for commercial facilities be implemented.

b. Toxic Air Emissions

Sensitive receptors are persons who are more susceptible to air pollution than the general population, such as children, athletes, the elderly, and the chronically ill. Examples of land uses where substantial numbers of sensitive receptors are often found are schools, daycare centers, parks, recreational areas, medical facilities, nursing homes, and convalescent care facilities. Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to pollutants. The sensitive land uses in the project vicinity are residences on the east side of SR-86. The nearest sensitive receptor is a home about 295 feet away. The only other sensitive receptor in the area is the Frank M. Wright Middle School (885 North Imperial Avenue), which is about 2,200 feet south of the project’s southern boundary.

Construction of the project would generate short-term and intermittent emissions. Although sensitive receptors would be exposed to diesel exhaust, which has been associated with lung cancer, the duration of exposure would not be sufficient to result in a significant cancer risk. Carcinogenic health risk assessments are based upon an assumption of 70 years continuous exposure, while the exposure in the present case would be intermittent over a maximum of about 10 years. Therefore, no cancer health risk assessment was necessary. Acute noncancer risk assessments are based upon one-hour maximum exposures, but acute reference exposure levels for diesel exhaust and diesel particulate matter have not been established by the Office of Environmental Health Hazard Assessment.

Operation of the project would not introduce significant sources of stationary source emissions. Area source emissions generated on-site by operation and maintenance of the proposed land uses would be minimal, and would not expose adjacent sensitive receptors to substantial pollutant concentrations.

Operation of the project would increase local vehicle traffic, which may contribute to off-site air quality impacts. The traffic increases in nearby intersections may contribute to traffic congestion, which may create "pockets" of CO called hotspots. These pockets have the potential to exceed the state 1-hour standard of 20 ppm and/or the 8-hour standard of 9.0 ppm, thus affecting sensitive receptors that are close to these roadways or intersections. CO hotspots typically are found at busy intersections, but can also occur along congested major arterials and freeways. Typically, hotspots analyses are not performed for unsignalized intersections, which have lower traffic volumes than those with signals. This is particularly the case when a hotspots analysis shows no impacts for the most congested, signalized intersections.

Given the acceptable level of service at the current and proposed signalized intersections, a quantitative CO hotspots analysis is not necessary. Localized CO concentrations will be less than significant.

c. Odors

Construction activities for the project would generate airborne odors associated with the operation of construction vehicles (i.e., diesel exhaust), asphalt paving operations, and the application of paints and coatings. These emissions would occur during daytime hours only, and would be isolated to the immediate vicinity of the construction site and activity. Therefore, they would not affect a substantial number of people. When project construction is completed, odors from the proposed uses of the project would not significantly differ from odors emanating from typical hotels, restaurants, or office buildings.

Although the general area of the project is developing rapidly, residents would be exposed for at least some time to odors from neighboring agricultural operations. Finally, no wastewater treatment plants or other industrial facilities known to cause odors are within 1,000 feet of the project site.

2.1.3.4 Cumulative Emissions

The project will begin operations in 2012. No other developments are planned to come on line near the project. Given this, the traffic study assumed a background growth factor for traffic in the area. Because regional air pollutant emissions from project operations will be less than significant, cumulative impacts will also be ***less than significant***.

2.1.4 Significance of Impacts

2.1.4.1 Construction-Related Emissions

Commercial projects whose emissions are below the ICAPCD's significance thresholds must comply with the latest rules adopted for the control of fugitive dust. In addition, the ICAPCD requires the use of "standard" mitigation measures for construction equipment and fugitive dust, as listed in the *CEQA Air Quality Handbook*. Without implementation of these measures, impacts would be ***significant***. **(AQ-1)**

2.1.4.2 Operation-Related Emissions

As indicated in Table 5 above, the long-term project operational emissions of ROG, NO_x, CO, and PM_{10} would be less than ICAPCD thresholds. The ICAPCD therefore requires that "standard" mitigation measures for commercial facilities be implemented. Without implementation of these measures, impacts would be ***significant***. **(AQ-2)**

2.1.4.3 Cumulative Emissions

As discussed above, regional air pollutant emissions from project operations will require all "standard" mitigation be implemented. Given implementation of these measures, cumulative impacts would also be ***less than significant***.

2.1.5 Mitigation Measures

AQ-M-1 Construction-Related Emissions

Standard Measures for Fugitive PM_{10} Control

The project shall comply with ICAPCD Regulation VIII. Incorporation of Regulation VIII standard measures for construction are listed below:

a. All disturbed areas, including bulk material storage which is not being actively used, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material such as vegetative ground cover.

b. All on-site and off-site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.

c. All unpaved traffic areas 1 acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emission shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.

d. The transport of bulk materials shall be completely covered unless 6 inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at delivery site after removal of bulk material.

e. All track-out or carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.

f. Movement of bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers, or by sheltering or enclosing the operation and transfer line.

Standard Measures for Construction Equipment

a. Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel-powered equipment.

b. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to five minutes as a maximum.

c. Limit, to the extent feasible, the hours of operation of heavy duty equipment and/or the amount of equipment in use.

d. Replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).

AQ-M-2 Operation-related Emissions

The project shall include the following standard and discretionary measures consistent with the ICAPCD handbook.

Standard Site Design Measures

a. Provide on-site bicycle lockers and/or racks.

b. Provide on-site eating, refrigeration, and food vending facilities to reduce lunchtime trips.

c. Provide shower and locker facilities to encourage employees to bike and/or walk to work.

Standard Energy Efficiency Measures

a. Comply with Title 24 requirements for reducing facility energy use.

2.1.6 Significance after Mitigation

Mitigation measures **M-AQ-1** and **M-AQ-2** contain standard measures for construction-related and operation-related emissions. These measures are required in order to reduce emissions to the greatest extent feasible with available technology. Impacts would be ***less than significant*** with the implementation of these measures listed above.

2.2 Archaeological Resources

A cultural resources study was prepared by RECON and is summarized below. The entire cultural resources report can be found as Appendix B to this document.

2.2.1 Research and Survey Methods

A record search was conducted at the South Coastal Information Center (SCIC) to determine the extent of previous archaeological work in the project area and is included as Confidential Attachment 1 of Appendix B. The boundary of the record search was a 1-mile radius around the project property. No previously recorded prehistoric or historic sites are recorded on the project property. The closest recorded site is CA-IMP-8166, the Southern Pacific Railway (Imperial and Gulf Branch), located approximately 1,900 feet east of the project. The other site within the record search boundary is CA-IMP-5979, the Old Imperial Cemetery. It is located approximately 3,500 feet northeast of the project. The site form, filled out in 1984, states that the cemetery site had been brushed, which had removed all the wooden grave markers.

2.2.2 NAHC Consultation

A letter was sent to the Native American Heritage Commission (NAHC) in Sacramento on October 29, 2010, requesting a record search of their Sacred Lands Files. A reply was received on November 2, 2010. The NAHC files did not indicate the presence of Native American cultural resources in the immediate project area. Letters have been sent to the eight groups listed on the contact sheet informing them of the project.

2.2.3 Significance Thresholds

The project would result in significant impacts to cultural resources if it:

- Causes a substantial adverse change in the significance of a historic resource as defined in section 150654.5 of the CEQA Guidelines;
- Causes a substantial adverse change in the significance of an archeological resource pursuant to 15064.5 of the CEQA Guidelines;
- Destroys directly or indirectly a unique paleontological resource or site, or unique geologic feature; or
- Disturbs any human remains, including those interred outside of formal cemeteries.

2.2.4 Analysis of Impacts

2.2.4.1 Prehistoric Resources

No previously unrecorded prehistoric cultural resources were found during the survey. A historic cultural resource consisting of a segment of the Dahlia Drain was identified during the survey.

2.2.4.2 Historic Resources

One historic cultural resource, a section of the Dahlia Drain, was found during the survey. The drain is part of the IID canal system. Current development plans show the portion of the Dahlia Drain within the 8-acre Phase I development area as being impacted. The drain will likely be covered with a concrete roof or the existing ditch will be replaced with a culvert. In either case, the existing drain segment will be impacted by development.

The Dahlia drain segment, 5919-HJP-1, does not qualify itself under any of the four CEQA criteria for inclusion on the California Register of Historical Resources. However, the individual elements of the IID canal system do contribute to the importance of the system as a whole, and information on these elements contribute to knowledge of the system as a whole. RECON has filled out a California Department of Parks and Recreation Primary Site Form for the drain and service road on the property and submitted it to the SCIC, so the information on these pieces of the system will be available in the future.

While the canals have not been routinely recorded or registered as historic elements of the IID canal system, and may not exhibit physical features that qualify as a historical resource under CEQA, they are the most important contributing part of the infrastructure needed for the successful development of the valley. Only the portions of the overall canal system within the project site will be affected, and minor impacts are not likely to be detrimental to the historic integrity of the entire canal system. Also, as it is unlikely that the IID system will be looked at as a whole in any future project, recordation of the individual segments on a project-by-project basis will be the main means of recording the IID system.

2.2.5 Significance of Impacts

As described above (and pursuant to Appendix B), impacts to cultural resources would be ***less than significant***.

2.2.6 Mitigation Measures

Impacts are less than significant; no mitigation is required.

2.3 Biological Resources

The following provides a summary of potential biological impacts as identified in the General Biological Assessment Report prepared by UltraSystems Environmental, Incorporated in August 2010. The entire biological report can be found as Appendix C-1 to this document. Ultrasystems also prepared a Jurisdictional Delineation (JD) Report to identify potential government-regulated waters within the project boundaries. The JD Report is attached to this document as Appendix C-2.

2.3.1 Existing Conditions

Prior to conducting their field survey in August 2010, UltraSystems reviewed available literature to identify any special status plants, wildlife, or sensitive habitats known in the vicinity of the project. The “project vicinity” was defined as within 5 miles of the project site and the “project area” was defined as the area within a 200-foot buffer zone directly adjacent to the project’s construction limits. The field assessment included a 100 percent pedestrian survey of the project site, plus a 200-foot buffer zone where possible. Thirteen plant species were observed within the project site and buffer zones during the 2010 survey. Since 2010 the project site has mostly been graded; less than 10 percent of the vegetation observed in 2010 remained during the 2012 survey. Therefore, the plant species identified in the 2010 survey are used to characterize the site. Nineteen wildlife species or their signs (including tracks, scat, burrows, nests, excavations, and vocalizations) for both surveys were recorded within the vicinity.

2.3.1.1 Vegetation Communities

Two main vegetation communities were observed in the project area during the field assessment. They include: Desert Saltbush Scrub and Disturbed/Developed. Identification of the native Desert Saltbush Scrub vegetation community was based on the description in

Holland (Element Code); and identification of the non-native Disturbed/Developed vegetation community was based on the Orange County Habitat Classifications Systems.

Desert Saltbush Scrub is present particularly in the northern portion of the project area, with quailbush (*Atriplex lentiformis*) the dominant saltbush species observed on-site. Sub-dominant plant species observed onsite that are also typical of this vegetation community include allscale (*Atriplex polycarpa*) and four-wing saltbush (*Atriplex canescens*).

Developed/Disturbed areas observed within the project area include non-native weedy (ruderal) plant species, a graded drainage ditch, paved roads, dirt roads, and a residential property. Observed site disturbances include trash, erosion, and off-road vehicle use.

2.3.1.2 Sensitive Species

a. Sensitive Wildlife

Fifteen wildlife species or their signs (including tracks, scat, burrows, nests, excavations, and vocalizations) were observed within the project vicinity during the August 2010 field survey. Three sensitive wildlife species, burrowing owl (*Athene cunicularia*), flat-tailed horned lizard (*Phrynosoma mcallii*), and western yellow bat (*Lasiurus xanthinus*) had a moderate to high potential to occur within the project site during the 2010 visits. However, due to the recent grading activities, the two species, burrowing owl and flat-tailed horned lizard, that were considered to have a moderate to high potential now have a low potential to be present.

b. Sensitive Plants

Through literature review, no sensitive plant species were determined likely to occur in the project area. During the field survey, 13 plant species were observed within the project area, none of which are sensitive.

c. Critical Habitat

The project area is not within federally designated Critical Habitat for any sensitive species.

2.3.1.3 Waterways

On May 30, 2012, the project site was visited and assessed for potential wetland areas by UltraSystems biologists. Habitat areas with the potential to be wetlands were evaluated using U.S. Army Corps of Engineers (USACE) manuals. The project site is located in the Brawley Watershed, which primarily receives water from the storm water drains and associated irrigation delivered to the Imperial Valley basin for agricultural uses. At the time of the jurisdictional delineation, the entire project site had been graded and most of the vegetation had been removed as documented in Appendix C-2.

Within the boundary of the project site there is one man-made ditch/drainage that exhibits hydrological characteristics. The drain is named Dahlia Drain No. 8 and is managed by the IID. Water conveyed through Dahlia Drain No. 8 is mostly storm water. Via a series of IID channels, receiving waters of Dahlia Drain No. 8 are ultimately the New River and/or Alamo River. Dahlia Drain No. 8 meets all of the USACE criteria for a wetland (i.e., vegetation, soils, hydrology). Based on the requirements of applicable laws, the jurisdictional limits of this drainage area comprise approximately 0.40 acre, as shown in Figure 5. The limits for all jurisdictional areas are the same, as the area immediately adjacent to the drainage is graded, and therefore does not support riparian-wetland vegetation.

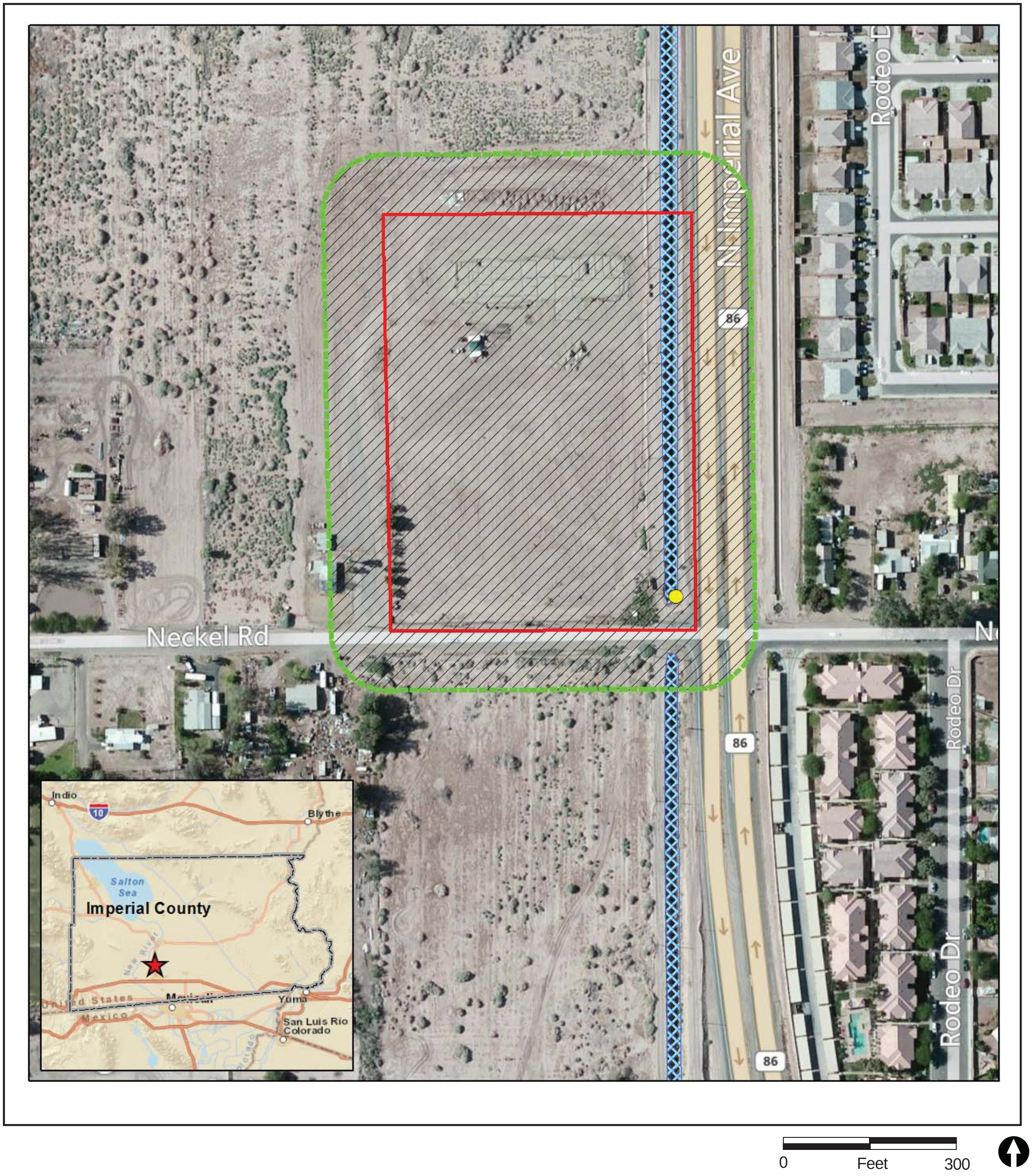
Nearby water features that were outside of the project boundary were excluded from analysis in this report, as they are not within the anticipated impact are of the project. These include another irrigation channel managed by the IID (called Dahlia Lateral 8) and two irrigation ponds located immediately north of the project boundary. According to the U.S. Department of Agriculture's National Resource Conservation Service Soil Survey, two soil types are expected to occur within the project area: Holtville Silty Clay, Wet and Imperial-Glenbar silty Clay Loams, Wet, 0 to 2 percent slopes, neither of which are classified as hydric by the Natural Resources Conservation Service.

2.3.2 Significance Thresholds

The project would result in significant impacts to biological resources if it would:

- Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or U.S. Fish and Wildlife Service (USFWS);
- Have a substantial adverse effect on any riparian habitat or other community identified in local or regional plans, policies, and regulations or by the CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Map Source: UltraSystems Environmental Management Planning



🟩 100-ft buffer
🟥 Project Boundary
▨ USACE/CDFG Wetlands
//// Non-Jurisdictional
● Sampling Point
★ Project Location

FIGURE 5

Jurisdictional Delineation

RECON

2.3.3 Analysis of Impacts

2.3.1.1 Sensitive Species

a. Western Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a CDFG listed Species of Special Concern. Habitat was present during the 2010 survey; however, no burrowing owls were observed during the 2010 habitat surveys. During the 2012 survey, project biologists found that vegetation had decreased dramatically from sparse to almost none. Although there are existing empty pipes and piled construction materials present within the project survey area (PSA) that may provide nesting sites for this species, each empty pipe hole and pile of construction materials was examined during the 2012 survey and no evidence of this species, including tracks, bird droppings, or gathering materials that are usually present for their nesting activities, was present within the PSA. Therefore, this species will likely not occur within the PSA and no further surveys are warranted at this time. Impacts would be ***less than significant***.

b. Flat-Tailed Horned Lizard

The flat-tailed horned lizard is a CDFG listed Species of Special Concern. It is a yearlong resident of sandy desert hardpan or gravel flats with sparse vegetation. Imperial County is within the native range for this species and recent occurrences have been documented within 3.5 miles of the project vicinity. This species may occur in areas where suitable habitat and prey are present; however, the species was not observed during the 2010 or 2012 surveys. Due to the lack of vegetation after recent grading activities, this species is not likely to occur within the PSA. Impacts would be ***less than significant***.

c. Western Yellow Bat

The western yellow bat (*Lasiurus xanthinus*) is a CDFG listed Species of Special Concern. It is a yearlong resident of valley foothill, desert riparian, desert wash, and palm oasis habitats and can often be found roosting in non-native palm trees. Imperial County is within the documented range for this species. This species occurs in areas with suitable roosting and foraging habitat especially from landscaping palms that are present within the site. Recent occurrences were documented in the area in 1992 within the project vicinity and the range of this species is believed to be expanding. During the time between the 2010 and 2012 surveys, previously existing landscaping palms were removed from the project site in preparation for grading activities, but have since been replaced by new (mature) palms. Impacts to the western yellow bat would be ***less than significant***.

2.3.1.2 Sensitive Habitats

The project area is not within federally designated Critical Habitat for any sensitive species. It also does not contain any riparian habitats or other sensitive natural vegetation community. Project impacts would be ***less than significant***.

2.3.1.3 Jurisdictional Waterways

A formal jurisdictional delineation and report was conducted in concurrence with this biological assessment during the 2012 survey to determine the jurisdictional status of aquatic features observed within the project site. An active drainage flows through the project site along the eastern edge of the parcel. The USACE and the CDFG have jurisdiction over certain streams, watercourses, and wetlands. Alteration, such as filling, of these jurisdictional areas requires a permit from USACE and a Streambed Alteration Agreement from CDFG. Additionally, activities that require a fill to USACE jurisdiction are also subject to certification by the Regional Water Quality Control Board (RWQCB) under Section 401 of the Clean Water Act.

CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake which supports fish or wildlife resources under Sections 1600–1603 of the California Fish and Game Code. The CDFG develops Streambed Alteration Agreements for the alteration of any of these areas. CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and other wildlife. CDFG Legal Advisor has prepared the following opinion:

> Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects and riparian vegetation will be treated like natural waterways . . . .
>
> Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses should be treated by [CDFG] as natural waterways . . . .
>
> Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Game Code provisions . . . .

The project will result in permanent impacts to jurisdictional waters (see Figure 5). Permanent impacts are anticipated based on the current project plans, which show that landscaping may be installed within the drainage (Dahllia Drain 8). Temporary impacts can include temporary removal of native vegetation (i.e., if followed by restoration) or ground disturbances due to adjacent activities; however, no temporary impacts are anticipated at this time. Table 6 is a description of the expected acreages of temporary and permanent impacts to drainages per applicable jurisdiction.

TABLE 6
SUMMARY OF JURISDICTIONAL AREAS

Drainage	USACE Jurisdictional Areas (acres)	CDFG Jurisdictional Areas (acres)	Colorado River RWQCB Jurisdictional Areas (acres)
Dahlia Drain 8 (Permanent Impacts)	0.40	0.40	0.40
Dahlia Drain 8 (Temporary Impacts)	0	0	0
TOTAL	**0.40**	**0.40**	**0.40**

a. USACE

There are an estimated 0 acre of temporary impacts and 0.40 acre of permanent impacts to waters of the United States subject to USACE jurisdiction. Impacts to these areas will require the submittal of an application to the USACE to receive a Section 404 Permit under the Clean Water Act.

b. Colorado River Regional Water Quality Control Board

There are an estimated 0 acre of temporary impacts and 0.40 acre of permanent impacts to waters of the United States subject to Colorado River Regional Quality Board jurisdiction. Impacts to these areas will require the submittal of an application to the Colorado River Regional Water Quality Control Board to receive a 401 Water Quality Certification under the Clean Water Act.

Waste Discharge Requirement Permit

The project plans show a combined impact of 0 acre of temporary impacts and 0.40 acre of permanent impacts to waters of the state of California. These impacts will require submittal of an application for Waste Discharge Requirement Permit under the Porter-Cologne Act from the Colorado River Regional Water Quality Control Board.

c. California Department of Fish and Game

1602 Streambed Alteration Agreement

There are an estimated 0 acre of temporary impacts and 0.40 acre of permanent impacts to waters of the state of California, subject to state jurisdiction. Impacts to these areas will require submittal of a Notification for a 1602 Streambed Alteration Agreement from CDFG.

Project impacts to jurisdictional waters could be ***potentially significant***.

2.3.1.4 Wildlife Movement

The project area is not within an identified wildlife movement corridor. However, migratory birds may nest within the project area. The Migratory Bird Treaty Act (MBTA) protects the majority of migratory birds breeding in the U.S., regardless of their official federal listing status (Threatened or Endangered). The provisions of this international act govern the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. The law applies to the disturbance or removal of active nests occupied by migratory birds during their breeding season. It is specifically a violation of the MBTA to directly kill or destroy an occupied nest of any bird species covered by the act.

California Fish and Game Code (Section 3503) protects the nest and eggs of native non-game birds. Under this law, it is unlawful to take, possess, or destroy any such birds or to take, possess, or destroy the nests or eggs of any such bird. The Code (Section 86) defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

The existing stands of Desert Saltbush Scrub vegetation on the project site have a high potential for nesting birds to occupy them during the breeding season (February 15 to August 31). Ground-nesting birds may nest on-site within the large non-vegetated areas in and adjacent to the project.

Project implementation and construction-related activities, including, but not limited to, tree/vegetation removal, materials lay-down, and machine/equipment noise, may result in the disturbance of nesting MBTA/CDFG protected species that could occur within project site. Trimming or removal of vegetation could destroy or disturb active nests. Equipment noise, vibration, lighting, and other human-related disturbance, could disrupt normal activities of birds found on or immediately adjacent to the project site. Project impacts to migratory and other nesting birds would be ***potentially significant***.

2.3.4 Significance of Impacts

An active drainage flows along the eastern edge of the project site that may be considered a jurisdictional water. The USACE and CDFG have jurisdiction over certain streams, watercourses, and wetlands. Alteration, such as filling, of these jurisdictional areas requires a permit from USACE and a Streambed Alteration Agreement from CDFG. The project site plans have been revised between 2010 and 2012 such that proposed parking would not directly impact the Dahlia Drain No. 8. However, indirect project impacts to 0.40 acre of jurisdictional waters would be ***significant*** and would require mitigation (**B-1**). To address potential temporary and indirect impacts on jurisdictional waterways, Mitigation Measure **M-B-1** shall be implemented.

Trimming or removal of vegetation could destroy or disturb active nests. Equipment noise, vibration, lighting, and other human-related disturbance could disrupt normal activities of birds found on or immediately adjacent to the project site. Project impacts to migratory and other nesting birds would be ***potentially significant*** and would require mitigation (**B-2**). To prevent direct and/or indirect impacts to MBTA/CDFG protected species, Mitigation Measure **M-B-2** shall be implemented.

2.3.5 Mitigation Measures

M-B-1: Jurisdictional Delineation and Report

Silt netting and a chain link fence shall be used along the drainage feature (Potential Jurisdictional Area) that borders the eastern part of the project site. This fence would guard against any inadvertent effects to a Potential Jurisdictional Area including, but not limited to, the introduction of fill, machine fuel, and construction debris.

M-B-2: Pre-Construction Survey for Nesting Birds

To avoid impacts on nesting birds, construction activities should take place between September 1 and February 14, to avoid the nesting season of federally and state protected migratory birds. However, if construction occurs between February 15 and August 31, the following shall be implemented:

- A pre-construction survey (within three days prior to work in the areas) shall be conducted by a qualified biologist to determine the presence or absence of active nests within, or adjacent to, the project site to avoid the nesting of breeding migratory birds.
- If no nesting birds are found within or adjacent to the project work area during the pre-construction survey period, construction activities may proceed as scheduled. If an active nest is found within or adjacent to the project work area during construction, a “No Construction” Buffer Zone would be established around the active nest (usually a minimum radius of 200 feet for passerine birds and 500 feet for raptors) to minimize project impacts on the nesting activity. The on-site Project Biologist/Biological Monitor will determine and flag the appropriate buffer size required, based on the specific situation, tolerances of the species, and the nest locations. Project activities may resume in the buffer area when the Project Biologist/Biological Monitor has determined that the nest(s) is no longer active. Also, a Biological Monitor shall be present during vegetation removal in the nesting season to minimize impacts on nesting birds.

If listed endangered or threatened species are found within 500 feet of the project work area, the USFWS and CDFG, as appropriate, shall be consulted at the time they are first observed.

2.3.6 Significance after Mitigation

Mitigation measures **M-B-1** and **M-B-2** would ensure that impacts to biological resources and jurisdictional waters are ***less than significant.***

2.4 Greenhouse Gas Emissions

A GHG memorandum was prepared by UltraSystems Environmental to assess the potential impacts of the project. The GHG analysis is based on the TIS prepared for the project. As discussed in detail in Section 2.7, the TIS can be considered a worst-case analysis. Therefore, this is a worst-case GHG analysis. The entire memorandum can be found as Appendix D to this document.

2.4.1 Existing Conditions

2.4.1.1 California Climate Change Regulation

Executive Order S-3-05 (GHG Emissions Reductions). Executive Order #S-3-05, signed by Governor Arnold Schwarzenegger on June 1, 2005, calls for a reduction in GHG emissions to 1990 levels by 2020 and for an 80 percent reduction in GHG emissions to below 1990 levels by 2050.

The California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32). In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Global Warming Solutions Act of 2006 (Health and Safety Code § 38500 et seq.), into law. AB 32 was intended to effectively end the scientific debate in California over the existence and consequences of global warming. In general, AB 32 directs the CARB to do the following:

- On or before June 30, 2007, publicly make available a list of discrete early action GHG emission reduction measures that can be implemented prior to the adoption of the statewide GHG limit and the measures required to achieve compliance with the statewide limit;

- By January 1, 2008, determine the statewide levels of GHG emissions in 1990, and adopt a statewide GHG emissions limit that is equivalent to the 1990 level (an approximately 25 percent reduction in existing statewide GHG emissions);

- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures;

- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020, to become operative on January 1, 2012, at the latest. The emission reduction measures may include direct emission reduction measures, alternative compliance mechanisms, and potential monetary and non-monetary incentives that reduce GHG emissions from any sources or categories of sources as CARB finds necessary to achieve the statewide GHG emissions limit; and

- Monitor compliance with and enforce any emission reduction measure adopted pursuant to AB 32.

On December 11, 2008, the CARB approved the *Climate Change Scoping Plan* pursuant to AB 32. The Scoping Plan recommends a wide range of measures for reducing GHG emissions, including (but not limited to):

- Expanding and strengthening of existing energy efficiency programs;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a GHG emissions cap-and-trade program;
- Establishing targets for transportation-related GHG emissions for regions throughout the state, and pursuing policies and incentives to meet those targets;
- Implementing existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Targeted fees to fund the state's long-term commitment to administering AB 32.

Executive Order S-01-07 (Low Carbon Fuel Standard). Executive Order #S-01-07 (January 18, 2007) establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. Carbon intensity is the amount of CO_2 equivalent per unit of fuel energy emitted from each stage of producing, transporting, and using the fuel in a motor vehicle. On April 23, 2009 the Air Resources Board adopted a regulation to implement the standard.

Senate Bill 97. Senate Bill 97 was signed by the governor on August 24, 2007. The bill required the Office of Planning and Research (OPR), by July 1, 2009, to prepare, develop, and transmit to the resources agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, including, but not limited to, effects associated with transportation or energy consumption. On April 13, 2009 OPR submitted to the Secretary for Natural Resources its proposed amendments to the State CEQA Guidelines for GHG emissions. The Resources Agency adopted those guidelines on December 30, 2009, and they became effective on March 18, 2010. The amendments treat GHG emissions as a separate category of impacts; i.e., they are not to be addressed as part of an analysis of air quality impacts.

Section 15064.4, which was added to the CEQA Guidelines, specifies how the significance of impacts from GHGs is to be determined. First, the lead agency should "make a good faith effort" to describe, calculate, or estimate the amount of GHG emissions resulting from a project. After that, the lead agency should consider the following factors when assessing the impacts of the GHG emissions on the environment:

- The extent to which the project may increase or reduce GHG emissions, relative to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The Governor's OPR asked the CARB to make recommendations for GHG-related thresholds of significance. On October 24, 2008, the CARB issued a preliminary draft staff proposal for *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act*. After holding two public workshops and receiving comments on the proposal, CARB staff decided not to proceed with threshold development. Quantitative significance thresholds, if any, are to be set by local agencies.

Senate Bill 375. Senate Bill 375 requires coordination of land use and transportation planning to reduce GHG emissions from transportation sources. Regional transportation plans, which are developed by metropolitan transportation organizations such as the Southern California Association of Governments, are to include "sustainable community strategies" to reduce GHG emissions.

Title 24. The Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6, of the California Code of Regulations) were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Compliance with Title 24 will result in decreases in GHG emissions. The California Energy Commission adopted the 2008 changes to the Building Energy Efficiency Standards on April 23, 2008 with an aim to promote the objectives listed below.

- Provide California with an adequate, reasonably priced and environmentally sound supply of energy.

- Respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its greenhouse gas emissions to 1990 levels by 2020.

- Pursue California energy policy that energy efficiency is the resource of first choice for meeting California's energy needs.

- Act on the findings of California's Integrated Energy Policy Report that Standards are the most cost-effective means to achieve energy efficiency, expects the Building Energy Efficiency Standards to continue to be upgraded over time to reduce electricity and peak demand, and recognizes the role of the Standards in reducing energy related to meeting California's water needs and in reducing greenhouse gas emissions.

- Meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of state building codes.

- Meet the Executive Order in the Green Building Initiative to improve the energy efficiency of nonresidential buildings through aggressive standards.

The provisions of Title 24, Part 6 apply to all buildings for which an application for a building permit or renewal of an existing permit is required by law. They regulate design and construction of the building envelope, space-conditioning and water-heating systems, indoor and outdoor lighting systems of buildings, and signs located either indoors or outdoors. Title 24, Part 6 specifies mandatory, prescriptive and performance measures, all designed to optimize energy use in buildings and decrease overall consumption of energy to construct and operate residential and nonresidential buildings. Mandatory measures establish requirements for manufacturing, construction and installation of certain systems; equipment and building components that are installed in buildings.

2.4.2 Significance Thresholds

Imperial County, the City of Imperial, and the ICAPCD do not have formal plans or guidelines for reducing GHG emissions. In addition, there are no local quantitative thresholds of significance for GHG emissions. In preparing the GHG memorandum (see Appendix D), UltraSystems used the factors from Section 15064.4(b) of the recently amended CEQA Guidelines to assess the significance of impacts from GHG emissions on the environment. Therefore for purposes of this document, the project would have a significant impact if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

2.4.3 Analysis of Impacts

Because GHG emissions are a global concern, a GHG emission inventory in principle would include all emissions related in any way, directly or indirectly, to the project. Because of the great uncertainty over the meaning of different levels of GHG emissions, compiling a comprehensive inventory is an inefficient use of resources. Instead, the approach taken by Ultrasystems in preparing the GHG memorandum (see Appendix D) has been to limit the analysis to those GHG emission sources over which the project has at least some control, and therefore the power to reduce them. The main two categories of GHG emissions analyzed were construction emissions and operational emissions which are discussed below.

2.4.3.1 Construction Emissions

Emissions of CO_2 during construction were estimated using the California Emissions Estimator Model^{TM} (CalEEMod^{TM}), Version 2011.1.1. These emissions include GHG emissions from internal combustion engines from off-road construction equipment, as well as on-road vehicles (worker, vendor, and delivery trips). Construction equipment emissions were based on CalEEMod's default values for horsepower and load factors, which are from the CARB's OFFROAD2007 model. Table 7 summarizes the results. The year of highest construction-related GHG emissions would be 2012.

TABLE 7
ANNUAL GREENHOUSE GAS EMISSIONS DURING CONSTRUCTION

Year	GHG Emissions Tonnes/Year
2012 (Total)	325.02
2012 (Amortized)	10.83

NOTE: Construction GHG emissions are amortized over 30 years.

2.4.3.2 Operational Emissions

Operation of the project at Phase I buildout (in 2012) will result in both direct and indirect emissions of GHG. Direct emissions result from on-site combustion processes, such as the use of gas stoves in the proposed restaurants, and from use of motor vehicles by office building commuters and hotel guests. The principal indirect source of GHG is use of electricity by the hotel, the restaurants, and the office buildings; these emissions are indirect because they occur where the electricity is generated, rather than where it is used. The generation sites may be far from the Imperial area. Because climate change is a global problem, the off-site sources need to be taken into account.

Emissions of CO_2 during operations were estimated using CalEEMod, and include motor vehicle trips, solid waste, water, wastewater, space heating, and electricity consumption. Table 8 summarizes the amortized construction GHG emissions in addition to the operational emissions.

TABLE 8
ANNUAL GHG EMISSIONS, 2012

Annual Emissions in 2015 (tonnes)					
Emission Source		CO_2	CH_4	N_2O	CO_2e
Construction[a]		10.81	0.00	0.00	10.83
Operations	Area	0.00	0.00	0.00	0.00
	Energy	1,880.50	0.04	0.20	1,887.35
	Mobile	870.87	0.06	0.00	872.10
	Waste	12.00	0.71	0.00	2.90
	Water	22.54	0.08	0.00	25.01
TOTAL		**2,796.72**	**0.89**	**0.20**	**2,798.19**

SOURCE: UltraSystems Environmental Inc. with CalEEMod (Version 2011.1.1)
NOTE: Project is operational in 2012.
[a] Amortized over 30 years per SCAQMD Interim CEQA GHG Significance Threshold.

As seen in Table 8, the project will generate about 2,800 tons per year of GHG emissions. How much of an **increase** in GHG emissions this represents is uncertain. Some of the emissions from commercial energy use (e.g., restaurant patronage) would occur elsewhere if the project is not built. Because climate change is a global issue, it does not matter where the emissions occur. Whether there would be a net increase in mobile source GHG emissions is also uncertain. A conservative assumption is used that the entire 2,800 tons per year are a net increase.

2.4.4 Significance of Impacts

As of this writing, the lead agency (City of Imperial) has not adopted quantitative thresholds of significance for GHG emissions from residential and commercial projects. It is therefore not possible to compare the project's emissions to a lead agency threshold. There are currently no regional or local climate action plans or general or specific plan provisions to reduce GHG emissions in the study area. The only applicable plan is the set of regulations to be developed under AB 32, which has a target of reducing GHG emissions to 1990 levels by 2020. Therefore, the potential significance of emissions from the project depends upon the extent to which the project furthers or hinders implementation of AB 32.

Essentially all the 2,800 tons per year of GHG emissions forecast for project buildout will also occur by and in 2020, including the amortized construction GHG emissions. Because increases in GHG must be offset for net emissions to decrease to 1990 levels by 2020, the project's GHG emissions are ***potentially significant*** and would require mandatory implementation of project design features to reduce GHG emissions (**GHG-1**).

2.4.5 Mitigation Measures

The emissions estimates presented above assume no special architectural design features or operating characteristics, beyond those required by Title 24, which would reduce GHG emissions. The following is a list of project design features that will reduce GHG emissions beyond "business as usual" levels.

M-GHG-1

- **On-site bicycle lockers and/or racks.** Bicycle use produces no GHG emissions. Providing infrastructure that promotes bicycle use will encourage bike travel and help in reducing the use of automobiles.

- **Street tree planting.** Trees help in counteracting CO_2 emissions by absorbing CO_2 from the air. Trees also help in lowering air temperature by providing shade and transpiring water, thereby reducing building cooling loads during summers.

- **Shade tree planting in parking lots** to decrease cooling loads on cars, thereby reducing fuel consumption.

- **Public transit accessibility with transit turnouts and direct pedestrian access and bus stop improvements such as shelters, route information, benches and lighting.** Transit-oriented development along with a pedestrian friendly environment will encourage the use of transit and help in reducing the use of automobiles. On the basis of passenger miles travelled, public transportation is more fuel efficient than use of private vehicles.

- **Pedestrian signalization and signage to improve pedestrian safety.** Providing infrastructure that facilitates a pedestrian friendly environment will encourage pedestrian travel and help in reducing the use of automobiles.

- **Roof material with a solar reflectance value meeting the U.S. EPA/Department of Energy Energy Star® rating to reduce summer cooling needs.** The roof of a building acts as a large open space that directly absorbs solar heat and transfers this heat to the interior of the building. Hence, a roofing material with good solar reflectance decreases the amount of heat absorbed by the roof and helps in maintaining low interior temperatures, thereby reducing energy required to operate the heating ventilation air conditioning (HVAC) system for cooling the building.

- **Built-in energy-efficient appliances, where applicable.** Energy-efficient appliances using advanced technology use 10 to 50 percent less energy than standard appliances. Decreased energy use in buildings greatly helps in reducing GHG emissions produced during energy generation, distribution, and consumption.

- **Double-paned windows and low E-glass.** See discussion above.
- **Low energy parking lot and street lights (i.e., low-pressure sodium vapor).** Using energy-efficient lighting will reduce consumption of electricity for lighting.
- **Energy-efficient interior lighting.** A building's interior lighting system is both a dominant consumer of electrical energy and a major source of internal heat. In commercial buildings it normally accounts for more than 30 percent of the total electrical energy consumed. Using energy-efficient lighting not only reduces consumption of electricity for lighting but also reduces cooling loads since less waste heat needs to be removed by the air conditioning system.
- **High-efficiency gas/electric space heating.** Using energy-efficient equipment will reduce consumption of electricity for heating.
- **Pedestrian and bicycle access from nearby residential neighborhoods.** The project is a mixed-use development with a variety of basic amenities such as schools, parks, and retail spaces, within close proximity to residential land. Additionally, every effort has been made to provide a well-planned infrastructure to promote a pedestrian and bicycle-friendly environment. All these measures will greatly help to promote pedestrian and bicycle travel for short everyday commuting trips in and around the project area, thereby reducing the use of automobiles.

2.4.6 Significance after Mitigation

Mitigation measure **M-GHG-1** contains project design measures for operation-related GHG emissions. These measures are required in order to reduce emissions to the greatest extent feasible with available technology. Impacts would be ***less than significant*** with the implementation of the measures listed above.

2.5 Hazards and Hazardous Materials

The following discussion is based on the Phase I Environmental Site Assessment (ESA) prepared by GS Lyon Consultants, Inc. (GSL) in January 2004. The full report can be found as Appendix E of this document.

2.5.1 Existing Conditions

GSL performed a review of the regulatory agencies databases in order to evaluate the potential for recognized environmental conditions (REC) (as defined in American Society for

Testing and Materials Standard E1527) within the project site and the vicinity. Additionally, historic topographical maps, historic aerial photographs, historic Sanborn Fire Insurance maps, and historic telephone directories were researched to evaluate potentially adverse environmental conditions resulting from previous ownership and uses of the site.

A majority of the site has been dominantly an agricultural use or vacant since the late 1940s. There is a rural residence and other development in the southwest corner of the site.

2.5.1.1 Regulatory Framework

a. Federal

The Resource Conservation and Recovery Act (RCRA), the federal hazardous waste law, provides for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. The U.S. EPA has the primary responsibility for implementing the RCRA; however, individual states are encouraged to seek authorization to implement some or all of RCRA provisions.

b. State

The California EPA (CalEPA) and the State Water Resources Control Board (SWRCB) establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable state and local laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law
- Underground Storage of Hazardous Substances Act
- Porter-Cologne Water Quality Control Act

California received authority to implement the RCRA program in August 1992. The California agency responsible for implementing the RCRA program, as well as California's own hazardous waste laws (which are collectively known as the Hazardous Waste Control Law), is the Department of Toxic Substance Control (DTSC). Under the Certified Unified Program Agency (CUPA) program, DTSC in turn delegates enforcement authority to the local environmental health departments.

The Hazardous Materials Release Response Plans and Inventory Act requires facilities that use, produce, store, generate, or have a change in business inventory of hazardous substances in quantities above certain limits to establish and implement a Hazardous Materials Management Plan (HMMP) or Business Plan. The plan must disclose the type, quantity, and storage location of materials. The law also requires a site-specific emergency response plan, employee training, and designation of emergency contact personnel.

2.5.1.2 Results of the ESA

The ESA performed for the site made the following findings concerning known contamination sources.

- Pesticide residues (low concentrations) typical to agricultural crop applications may be present in the near surface soils.
- There may be a septic tank and leach field in the vicinity of the rural residence in the southwest corner of the site.
- The potential risk of asbestos containing materials (ACM) or lead-based paint (LBP) is low due to the lack of site development. There is an existing residence located near the southwestern corner of the project site, but is outside the project limits.

2.5.2 Significance Thresholds

The project would result in potentially significant hazardous materials impacts if any of the following conditions occur:

1. The project site lies on or near known contamination sources listed in a federal and state database records review or other data source such as Sanborn maps, Fire Department records, topographical surveys, or the State Office of Planning and Research Identified Hazardous Waste and Substances List.
2. Involves the removal of underground storage tanks or is located within the vicinity of a listed Leaking Underground Storage Tank (LUST) site.
3. Involves the demolition of structures that may contain ACM or LBP.

2.5.3 Analysis of Impacts

2.5.3.1 Known Contamination Sources

Historical agricultural practices in the Imperial Valley consist of aerial and ground application of pesticides and application of chemical fertilizers to both ground and irrigation water. However, the U.S. Geological Survey, at the request of the IID, performed a “one-time” water quality study of 27 irrigation drains throughout the Imperial Valley during the summer of 1994. Review of the study results indicate that samples taken contained less than the regulatory limits of arsenic, selenium, and nitrites. Based on review of environmental documents and site conditions, the property has been dominantly in agricultural use and/or vacant since the late 1940s. Residue of currently available pesticides and currently banned pesticides such as DDT/DDE may be present in near surface soils in limited concentrations (usually less than ¼ of U.S. EPA action levels). Agricultural commissioner office files of pesticide applications to local fields are maintained only for three years. Samples of near-surface soils were not collected by GSL personnel. The near-surface soils most likely contain trace residue of pesticides used on the fields from roughly 50 years of agricultural use. The concentrations of these pesticides found on other Imperial Valley agricultural sites are typically ¼ to ½ of the current regulatory threshold limits and at those levels are not considered a significant environmental hazard.

2.5.3.2 Leaking Underground Storage Tank

The ESA found that several LUST sites are located with ½ to 1 mile of the project site. Because of their distance from the site, it is considered unlikely that prior or future hydrocarbon or agricultural chemical spills or releases would affect the site unless groundwater contamination and transport occurred.

2.5.3.3 Asbestos and Lead Based Paint

As discussed above, there is a residence located near, but outside the project boundary and there are no other structures on-site which could potentially contain either ACM or LBP.

2.5.4. Significance of Impacts

2.7.4.1 Known Contamination Sources

Due to the lack of any identified contamination sources or pesticide residue on or adjacent to the project site, impacts would be ***less than significant.***

2.5.4.2 Leaking Underground Storage Tanks

According to the Phase I ESA (see Appendix E), no LUSTs or other sites where hazardous materials are known to be used or stored are located within ½ mile of the project site; thus, impacts would be ***less than significant***.

2.5.4.3 Asbestos and Lead Based Paint

There is a lack of any type of structure on-site which could potentially contain ACM or LBP. There would be ***no impacts***.

2.5.5 Mitigation Measures

Since no significant impacts were found, no mitigation would be required.

2.6 Noise

The following discussion of noise impacts is based upon the Noise Technical Report that was prepared for the project by UltraSystems in September 2012. The nosie analysis is based on the TIS prepared the project. As discussed in detail in Section 2.7, the TIS can be considered a worst-case analysis. Therefore, this is a worst-case noise analysis. The report can be found in its entirety in Appendix F.

2.6.1 Existing Conditions

The 1-hour average-equivalent noise levels ($L_{eq(1)}$) is the level of a steady sound which, in the stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound. In other words, the hourly equivalent sound level is the A-weighted sound level over a 1-hour period. A-weighting is a frequency correction that often correlates well with the subjective response of humans to noise.

The community noise equivalent level (CNEL) is a 24-hour A-weighted average sound level [dB(A) L_{eq}] from midnight to midnight obtained after the addition of 5 decibels (dB) to sound levels occurring between 7:00 P.M. and 10:00 P.M., and 10 dB to sound levels occurring between 10:00 P.M. and 7:00 A.M. Adding 5 dB and 10 dB to the evening and nighttime hours, respectively, accounts for the added sensitivity of humans to noise during these time periods.

The L_{dn} is a 24-hour A-weighted average sound level from midnight to midnight obtained after the addition of 10 dB to sound levels occurring between 10:00 P.M. and 7:00 A.M. The L_{dn} metric yields similar values (within 1 dB) as the CNEL metric.

2.6.1.1 Federal Regulations

The U.S. Department of Housing and Urban Development (HUD) has set a goal of 45 L_{dn} as a desirable maximum interior standard for residential units developed under HUD funding. While HUD does not specify acceptable exterior noise levels, standard construction of residential dwellings constructed under Title 24 of the California Code of Regulations typically provide 20 dB(A) of acoustical attenuation with the windows closed and 10 dB(A) with the windows open. Based on this assumption, the exterior L_{dn} or CNEL should not exceed 65 dB(A) under normal conditions.

2.6.1.2 State Regulations

The California Department of Health Services (DHS) Office of Noise Control has studied the correlation of noise levels with effects on various land uses.

California Code of Regulations. Title 24 of the California Code of Regulations requires for multi-family structures:

> **1208A.8.2 Allowable interior noise levels.** Interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric shall be either the day-night average sound level (L_{dn}) or the CNEL, consistent with the noise element of the local general plan. . . .
>
> Worst-case noise levels, either existing or future, shall be used as the basis for determining compliance with this section. Future noise levels shall be predicted for a period of at least 10 years from the time of building permit application.
>
> **1208A.8.4 Other noise sources.** Residential structures to be located where the L_{dn} or CNEL exceeds 60 dB shall require an acoustical analysis showing that the proposed design will limit exterior noise to the prescribed allowable interior level.
>
> **1208A.8.5 Compliance.** . . . If interior allowable noise levels are met by requiring that windows be unopenable or closed, the design for the structure must also specify a ventilation or air-conditioning system to provide a habitable interior environment. The ventilation system must not compromise the dwelling unit or guest room noise reduction.

2.6.1.3 Local Regulations

Table 9 lists the acceptable outdoor and indoor noise exposure levels prescribed by the City of Imperial's General Plan Noise Element and Zoning Ordinance.

TABLE 9
CITY OF IMPERIAL NOISE STANDARDS

	Acceptable Exposure Level (CNEL)	
Type of Receptor	Outdoor	Indoor
Rural Residential	60	45
Single Family Residential	60	45
Multi-Family Residential	65	45
Schools	70	40
Libraries	70	40
Churches	70	40
Hospitals	70	40
Nursing Homes	70	40
Parks and Recreation	70	40

Neither the City of Imperial's General Plan Noise Element nor the Zoning Ordinance limits construction noise levels. However, Policy 5 of the Noise Element requires that the City adopt an ordinance to prohibit construction activities between 8:00 P.M. and 7:00 A.M.

2.6.1.2 Existing Noise

The nearest sensitive land use is the residential neighborhood on the east side of Neckel Road. The residence closest to the project boundary is approximately 295 feet away. The nearest non-residential sensitive receptor in the area is the Frank M. Wright Middle School located approximately 2,200 feet south of the project's southern boundary.

The main source of noise near the project site is vehicle traffic on SR-86 (Imperial Avenue), Neckel Road, and La Brucherie Road. Table 10 summarizes the estimated noise exposures from SR-86 calculated in the General Plan Noise Element.

TABLE 10
ESTIMATED NOISE EXPOSURE FROM SR-86 TRAFFIC

CNEL	Distance from Centerline to CNEL Contour (feet)
60	500
65	230
70	115
75	70

A BNSF Railway branch line runs north-south, at about 1,900 feet east of the project site. The City of Imperial General Plan Noise Element estimates that the noise level at 2,000 feet is about 51 CNEL.

The project site is located approximately 1.5 miles northeast of the Imperial County Airport. The project site lies outside the airport's 55 CNEL contour.

Noise measurements were taken by UltraSystems on August 20, 2010 at three locations to determine the existing ambient noise. Two measurements were taken at each location—one during the day and one during the night. Measurement locations are shown in Figure 6. Table 11 summarizes the results.

TABLE 11
CHARACTERISTICS OF AMBIENT NOISE MEASUREMENT LOCATIONS

					Measurement Results		
Site	Location	Date	Time Interval	Purpose of Selection	15-Minute L_{eq}	L_{max}	L_{90}
1A	Northeast corner of Neckel Road and SR-86, 10 feet from corner	8/30/10	4:56 PM to 5:11 PM	Residences near project site	74.9	85.9	56.7
1B		8/30/10	6:59 PM to 7:14 PM		72.6	86.5	51.4
2A	Southeast corner of Ralph Road and SR-86, 25 feet from corner	8/30/10	5:30 PM to 5:45 PM	Residences near project site	73.5	82.1	58.4
2B		8/30/10	7:34 PM to 7:49 PM		69.3	81.6	51.9
3A	Northwest corner of Neckel Road and SR-86, 15 feet from corner	8/30/10	6:06 PM to 6:21 PM	Project site	69.0	78.2	57.7
3B		8/30/10	7:58 PM to 8:27 PM		67.4	81.3	51.4

2.6.2 Significance Thresholds

In accordance with significance criteria established by Appendix G of the CEQA Guidelines, the project could result in a significant impact if it would result in:

1. Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

2. Exposure of persons to, or generation of, excessive ground borne vibration or ground borne noise levels.

3. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing without the project.

For a project located within an airport land use plan, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport would the project expose people residing or working in the area to excessive noise levels?

5. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Map Source: UltraSystems Environmental Management Planning

● Noise Measurement Site

▬ ▬ Holiday Inn Project Site (Approximate)

FIGURE 6

Noise Measurement Locations

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2.6.3 Analysis of Impacts

2.6.3.1 Traffic Noise

a. Off-Site Receptors

The principal noise source in the project area is traffic on local roadways. The project may contribute to a permanent increase in ambient noise levels in the project vicinity due to project-generated vehicle traffic on neighborhood roadways and at intersections. A noise impact would occur if the project contributes to a permanent increase in ambient noise levels affecting sensitive receptors along roadways that would carry project-generated traffic.

Noise levels were modeled using the Federal Highway Administration (FHWA) Traffic Noise Model (TNM) computer program, Version 2.5. Average peak-hour volumes were calculated using the baseline and projected average daily traffic (ADT) from the project traffic study. The projected worst-case peak hour noise levels are summarized in Table 12.

TABLE 12
PROJECTED PEAK HOUR NOISE LEVELS

		Sound Level at Receptor Nearest the Roadway dB(A) (Peak Hour L_{eq})			
Roadway Segment	Existing	Future No Project	Future with Project in 2012	Future with Project in 2035	Project Impact in 2035
SR-86					
Ralph Road to Neckel Road	63.8	63.9	60.4	62.6	-1.2
Neckel Road to E. 15th Street	62.9	63.1	59.9	61.3	-1.6
Neckel Road					
SR-86 to Canon Drive	70.5	70.3	67.1	68.1	-2.4
La Brucherie Road to SR-86	65.9	66.2	67.5	68.8	2.9

As shown in Table 12, the project would not result in peak hour noise level increases greater than 5 dB(A) at the nearest sensitive receptors off Neckel Road and SR-86, between the year 2035 and existing noise levels. However, future noise levels for 2035 will be greater than existing noise levels off Neckel Road between La Brucherie Road and SR-86.

b. On-Site Receptors

To estimate the impacts of future traffic noise on guests at the proposed hotel, peak-hour L_{eq} levels at the hotel's exterior wall closest to SR-86 and Neckel Road were modeled using TNM. The results are summarized in Tables 13 and 14.

TABLE 13
NOISE EXPOSURE FOR HOTEL GUESTS ALONG STATE ROUTE 86

	Projected Noise Level (dBA CNEL)			
Floor	2010 (Existing)	2012 (No Project)	2012 (With Project)	2035 (With Project)
Ground	74.3	74.4	65.9	68.2
Second	73.6	73.7	65.2	67.5
Third	74.0	74.0	65.6	67.9
Fourth	73.8	73.9	65.5	67.7

TABLE 14
NOISE EXPOSURE FOR HOTEL GUESTS ALONG NECKEL ROAD

	Projected Noise Level (dBA CNEL)			
Floor	2010 (Existing)	2012 (No Project)	2012 (With Project)	2035 (With Project)
Ground	62.7	62.9	64.2	65.6
Second	62.1	62.3	63.6	65.1
Third	61.6	61.8	63.1	64.6
Fourth	61.5	61.7	63.0	64.5

As shown in Table 13, traffic noise exposure at the hotel exterior facing SR-86 would be about 65 dB(A) in 2012 and 67 dB(A) in 2035. As shown in Table 14, traffic noise exposure at the hotel exterior facing Neckel Road would be roughly 63 dB(A) for 2012 and 64 dB(A) for 2035. According to the state of California guidelines, these levels are considered “conditionally acceptable,” for hotels.

2.6.3.2 Construction Noise

Construction of a development project could generate noise levels in excess of standards adopted in local ordinances. Noise impacts from construction activities would be a function of the noise generated by the operation of construction equipment, the location of the equipment, and the timing and duration of the noise-generating activities.

Noise associated with the earthwork, construction, and surface preparation of the project will result in short-term impacts. A variety of noise-generating equipment would be used during the construction phase of the project. Table 15 lists the equipment expected to be used.

TABLE 15
CONSTRUCTION EQUIPMENT NOISE CHARACTERISTCS

Equipment Type	Maximum Sound Level [dB(A) @ 50 feet]	Usage Factor (%)
Air Compressors	78	40
Excavator	81	40
Flatbed Boom Truck	75	20
Forklift	65	50
Paver	85	50
Paving Equipment	85	50
Pickup Trucks	75	40
Portable Generators	81	50
Road Grader	85	40
Roller	85	20
Rubber Tired Dozer	82	50
Tractor	84	40
Water Truck	74	40

Using these noise levels and methods suggested by the Federal Transit Administration, UltraSystems calculated that the maximum composite noise level at the nearest residence located approximately 295 feet away would be 73.4 dB(A) L_{eq}, and the maximum composite noise level at Frank M. Wright Middle School located approximately 1,925 feet away would be 57.1 dB(A) L_{eq}. These estimated construction noise levels represent a worst-case scenario in which the loudest type of construction equipment would be operating on the same schedule and in the same area on the construction site. These worst-case noise levels would not be continuous, nor would they be typical of noise levels throughout the construction period.

As discussed above, neither the City of Imperial General Plan Noise Element nor the Zoning Ordinance limits construction noise levels. Construction activities would not occur between 8:00 P.M. and 7:00 A.M. in accordance with Policy 5 of the Noise Element. The existing noise level at the nearest residential receptor is 74.9 dB(A) L_{eq} during the daytime (see Table 11). Noise from construction would increase this level by a maximum of 0.6 dB(A), which is not noticeable to the human ear. Impacts from construction would be ***less than significant***.

2.6.3.3 On-Site Generated Noise

The commercial land uses on the project site (hotel, restaurants, and office buildings) would generate noise associated mainly with traffic entry and egress. These noise-generating activities are frequently sited adjacent to residential neighborhoods, and would not be considered significant noise sources. Impacts would be ***less than significant***.

2.6.3.4 Groundborne Vibration

The Federal Transit Administration has published standard vibration levels for construction equipment operations. It is anticipated that the vibration levels due to construction activities would be less than the threshold for fragile historic buildings. In addition, since it is not expected that heavy equipment such as large bulldozers would operate close enough to any sensitive land uses, construction activities would not generate groundborne vibrations that cause human annoyance. Therefore, groundborne vibration or groundborne noise impacts from the project's construction activities are not expected to be significant.

Operation of the project would not involve significant sources of groundborne vibration or groundborne noise. Thus, operation of the project would result in no impact.

2.6.4 Significance of Impacts

2.6.4.1 Traffic Noise: Off-site Impacts

The project would not result in peak hour noise level increases greater than 5 dB(A) at the nearest sensitive receptors off Neckel Road and SR-86, between the year 2035 and existing noise levels. However, future noise levels for 2035 will be greater than existing noise levels off Neckel Road between La Brucherie Road and SR-86. This impact would be **significant** (**N-1**).

2.6.4.2 Traffic Noise: Hotel Guests

According to the State of California guidelines, the noise levels shown in Tables 13 and 14 are considered "conditionally acceptable," for hotels. The noise technical report finds that impacts could be ***potentially significant*** (**N-2**) and recommends mitigation measures to ensure that the hotel (as constructed) would meet state of California Guidelines.

2.6.4.3 Construction Noise Impacts

Construction noise impacts will be ***less than significant*** and no mitigation measures are necessary.

2.6.5 Mitigation Measures

2.6.4.1 Traffic Noise: Off-site Impacts

The following mitigation measure will reduce noise exposures along the south side of Neckel Road between La Brucherie Road and SR-86 to less than significant levels.

M-N-1 Construct a 6-foot-high sound wall on the south side of Neckel Road wherever residential properties would otherwise be exposed to project-induced traffic.

2.6.4.2 Traffic Noise: Hotel Guests

M-N-2 The final site design and design of the hotel must ensure that interior exposures in guest rooms are below 45 dB(A) CNEL. The following mitigation measures shall be included in the final project design.

- Use acoustical (soundproof) glass for guest room windows and sliding doors (if applicable); the windows and doors would each consist of two panes of glass, separated by at least 2 inches of air space.
- Use dense building materials and/or increase exterior wall thickness on the highway side of the hotel.
- Design an air gap between the exterior and interior panels so that sound is not transmitted directly from the exterior wall to the interior wall of the guest room.
- Use sound-absorbing carpeting, furniture, and other room furnishings.
- Design a central heating and cooling system instead of using wall-penetrating individual room units.
- Use compressible neoprene weather-stripping rather than felt or other fibrous types for sound insulation.

2.6.5.3 Construction Noise

Construction noise impacts will be less than significant and no mitigation measures are necessary. However, the following ***optional*** design measures would reduce noise impacts from construction of the project.

- The construction contractor shall ensure that all construction equipment, fixed or mobile, is properly operating (tuned-up) and that mufflers are working adequately.
- The construction contractor shall ensure that all construction equipment is located so that emitted noise is directed away from sensitive noise receivers.
- The construction contractor shall ensure that stockpiling and vehicle-staging areas are located as far as practical from noise-sensitive receptors during construction activities.

- The developer shall route heavily loaded trucks away from neighboring residential dwelling units.
- Two weeks prior to the construction, the construction contractor shall provide notification in writing to adjacent residences if they would be located within 150 feet of the active construction activity.

2.7 Transportation/Traffic

A TIS (September 2, 2010) was prepared by ADVANTEC Consulting Engineers. The study was conducted in compliance with the latest edition of *Caltrans Guide for the Preparation of Traffic Impact Studies* (December 2002). The TIS addresses the traffic impacts that would occur from construction of the Imperial Center (Phase I) project as well as a Phase II project. Additionally, the Imperial Center (Phase I) project addressed in this MND has been revised since the TIS was prepared. The Imperial Center (Phase I) project addressed in this MND includes the construction of a 108-room, 4-story hotel, 5,000-square-foot restaurant, 2,500-square-foot drive-through building, and 10,000 square feet of retail space. The development (Phase I and Phase II) analyzed in the TIS includes a 108-room, 4-story hotel, 5,000-square-foot restaurant, 5,000-square-foot fast food restaurant with no drive through, a 40,000-square-foot office building, a convenience market with 8 gas pumps, and a 3,000-square-foot Starbucks Coffee with a drive-through.

Using the 8th Edition Institution of Transportation Engineers trip generation rates as used in the TIA, it was calculated that the Imperial Center (Phase I) project addressed in this MND would generate 264 trips and the total project analyzed in the TIS would generate 546 trips. Because the TIS analyzes more traffic than what would be generated by the proposed project, it can be considered a worst-case analysis and was used for the purposes of this analysis. The following provides a summary of the potential impacts. The entire traffic study can be found as Appendix G to this document.

2.7.1 Existing Conditions

2.7.1.1 Existing Roadway System

The folowing provides a description of the roadways in the project study area. Figure 7 depicts the lane geometries and traffic control at the study intersections. The following are the roadway charactristics that form the study intersections.

SR-86 (Imperial Avenue) - is classified as a Principal Arterial. It is currently constructed as a four-lane divided highway, providing two travel lanes per direction. This facility runs north-south within the project area and curbside parking is prohibited along both sides of the roadway. Bike lanes are provided along the roadway; however, there are no bus stops available. The speed limit varies between 50 miles per hour (mph) and 65 mph in the vicinity of project.

Larsen Road – Larsen Road is an east-west street providing one travel lane in each direction and quick access (stop-controlled) to SR-86.

Ralph Road – is an unclassified road. Ralph Road is currently constructed as an undivided two-lane road east of SR-86. There are no bike lanes or bus stops provided and parking is not permitted along the roadway. The speed limit is not posted. The west leg of the intersection is currently a dirt road.

Neckel Road – is an unclassified road. Neckel Road is currently constructed as an undivided two-lane road between SR-86 and La Brucherie Road. There are no bike lanes or bus stops provided and parking is not permitted along the roadway. The speed limit is not posted.

15th Street - 15th Street is an east-west residential street providing one travel lane in each direction and providing signalized access to SR-86.

La Brucherie Road – In the project vicinity, La Brucherie Road is a north-south street providing one travel lane in each direction.

Canon Drive – Canon Drive is a north-south residential street providing one travel lane in each direction.

Dogwood Road – Dogwood Road is a north-south road parallel to SR-86 and provides one travel lane in each direction.

Map Source: Advantec Consulting Engineers

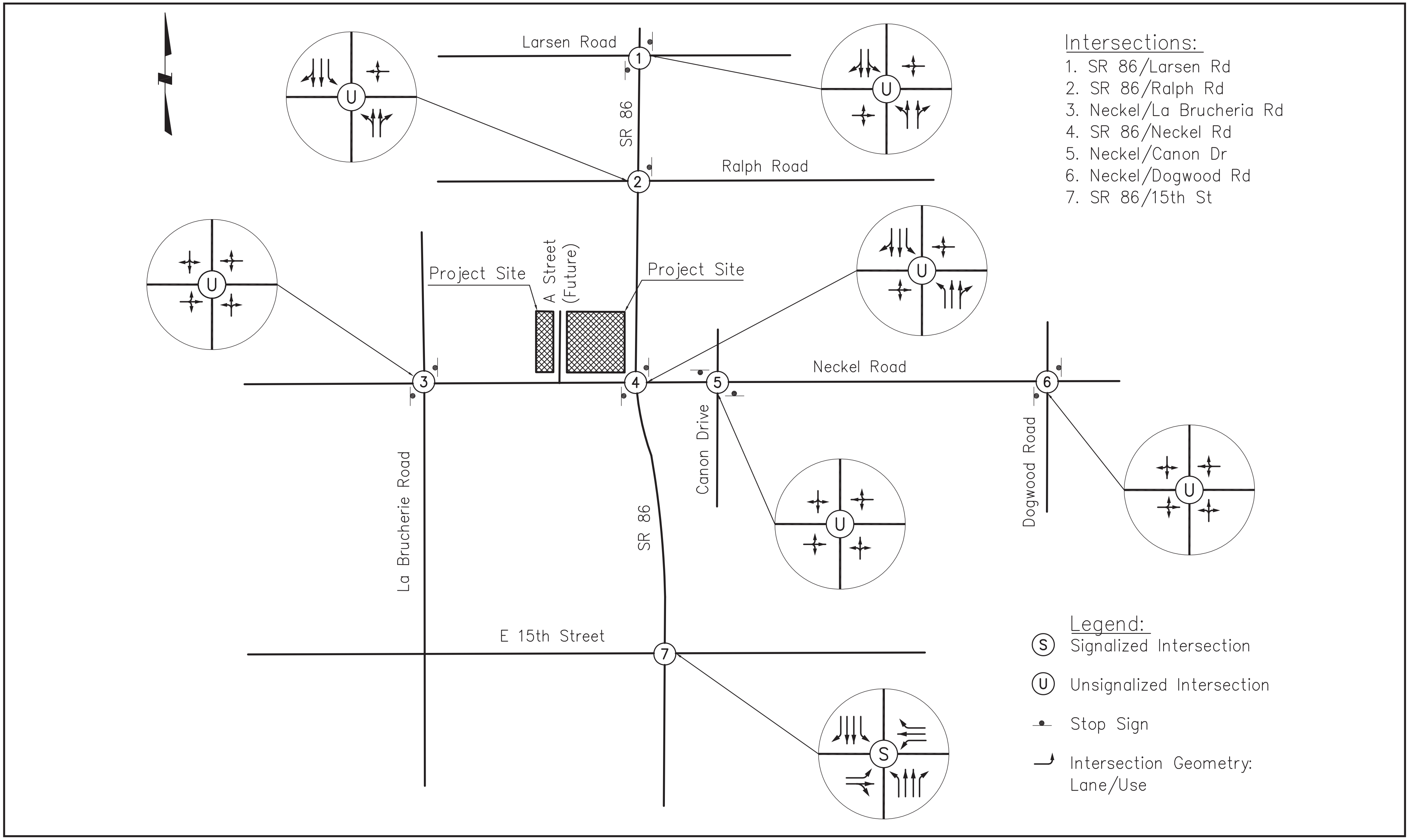

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FIGURE 7

Existing Lane Configurations

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2.7.1.2 Intersections

Seven studied locations were identified in the Traffic Impact Study in consultation with the City of Imperial and Caltrans District 11 staff. One of the seven studied intersections is controlled by a traffic signal. The remaining six locations are operating as two-way stop-controlled intersections. The intersections are listed as follows:

- SR-86 and Larson Road (Two-Way Stop Controlled)
- SR-86 and Ralph Road (Two-Way Stop Controlled)
- Neckel Road and La Brucherie Road (Two-Way Stop Controlled)
- SR-86 and Neckel Road (Two-Way Stop Controlled)
- Neckel Road and Canon Drive (Two-Way Stop Controlled)
- Neckel Road and Dogwood Road (Two-Way Stop Controlled)
- SR-86 and 15th Street (Signalized)

In addition, the following driveway was evaluated in this traffic impact study:

- Neckel Road and "A" Street (for future conditions only)

Peak hour turning movement counts were taken at the study intersections on Tuesday, July 13, 2010 during the hours of 7:00 A.M. to 9:00 A.M. and 4:00 P.M. to 6:00 P.M. Figure 8 shows the existing AM and PM peak hour traffic volumes. Table 16 summarizes the existing AM and PM peak hour traffic counts.

TABLE 16
EXISTING YEAR 2010 LEVEL OF SERVICE CONDITIONS
AM/PM PEAK HOURS

Intersection	Delay (Seconds)	LOS
AM Peak Hour		
SR-86 and Larsen Road*	16.0	C
SR-86 and Ralph Road*	19.1	C
Neckel Road and La Brucherie Road*	9.4	A
SR-86 and Neckel Road*	21.4	C
Neckel Road and Canon Drive*	9.6	A
Neckel Road and Dogwood Road*	10.0	A
SR-86 and 15th Street*	6.7	A
PM Peak Hour		
SR-86 and Larsen Road*	17.4	C
SR-86 and Ralph Road*	22.6	C
Neckel Road and La Brucherie Road*	9.3	A
SR-86 and Neckel Road*	29.6	D
Neckel Road and Canon Drive*	10.4	B
Neckel Road and Dogwood Road*	10.0	A
SR-86 and 15th Street*	8.8	A

*Unsignalized Intersections.

Map Source: Advantec Consulting Engineers

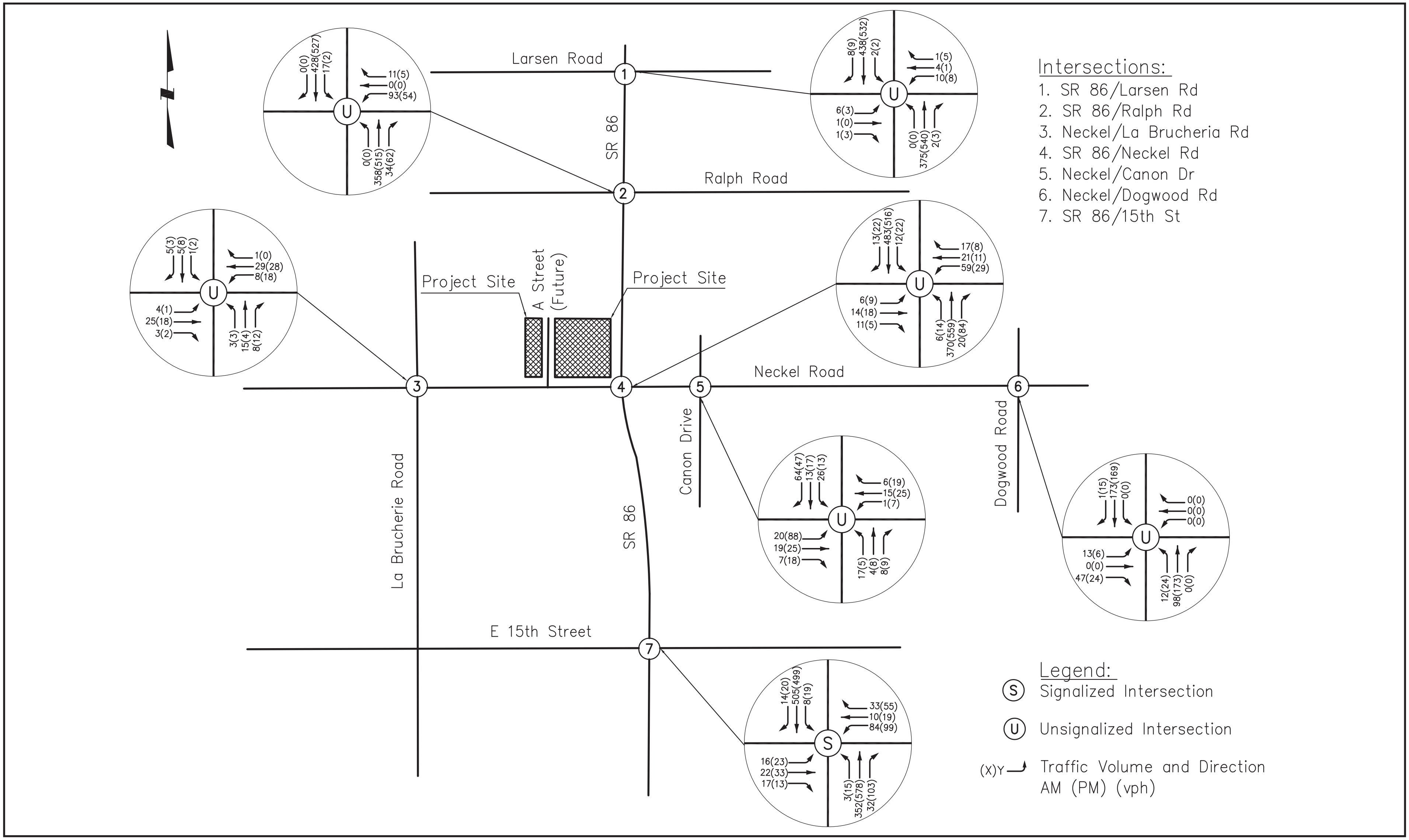

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FIGURE 8

Existing AM & PM Traffic Volumes

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As shown, all of the intersections currently operate at level of service (LOS) C or better with the exception of the following:

- SR-86 and Neckel Road (LOS D - PM Peak Hour)

2.7.1.2 Street Segments

One-day 24-hour ADT counts were also collected on Tuesday, July 13, 2010 on the following roadway segments:

- Neckel Road between SR-86 and La Brucherie Road
- Neckel Road between SR-86 and Canal Road
- SR-86 between Neckel Road and 15th Street
- SR-86 between Neckel Road and Ralph Road

2.7.2 Significance Thresholds

The Highway Capacity Manual 2000 methodology was used to determine the LOS for signalized and unsignalized intersections. LOS quantitatively measures traffic conditions and drivers and passengers perception of these conditions. LOS values range from LOS A to LOS F. LOS A indicates excellent operating conditions with little delay to motorists, whereas LOS F represents congested conditions with excessive vehicle delay. LOS D is typically recognized as the minimum satisfactory service level in urban areas. However, the minimum acceptable LOS for a signalized intersection is LOS C or State Highway signalized intersection as per the Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002).

Weekday AM and PM peak hour traffic impacts at the seven study locations were quantitatively assessed based on the LOS methodology discussed above. As defined by the Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002), significant impacts of the project with commercial land uses at study intersections must be mitigated to a level of insignificance if feasible.

2.7.3 Analysis of Impacts

2.7.3.1 Project Trip Calculation

The *ITE Trip Generation Manual, Seventh Edition* was used to determine the individual project trips by each proposed land use type and overall traffic generated for the project (2003). The project is thus calculated to generate a maximum of 927 AM trips (531 inbound, 396 outbound) and 650 PM trips (290 inbound, 360 outbound). Figure 9 shows the project trip distribution. Figure 10 shows the project trip assignment. While the traffic impact analysis has not been updated since 2010, the project no longer includes the

Map Source: Advantec Consulting Engineers

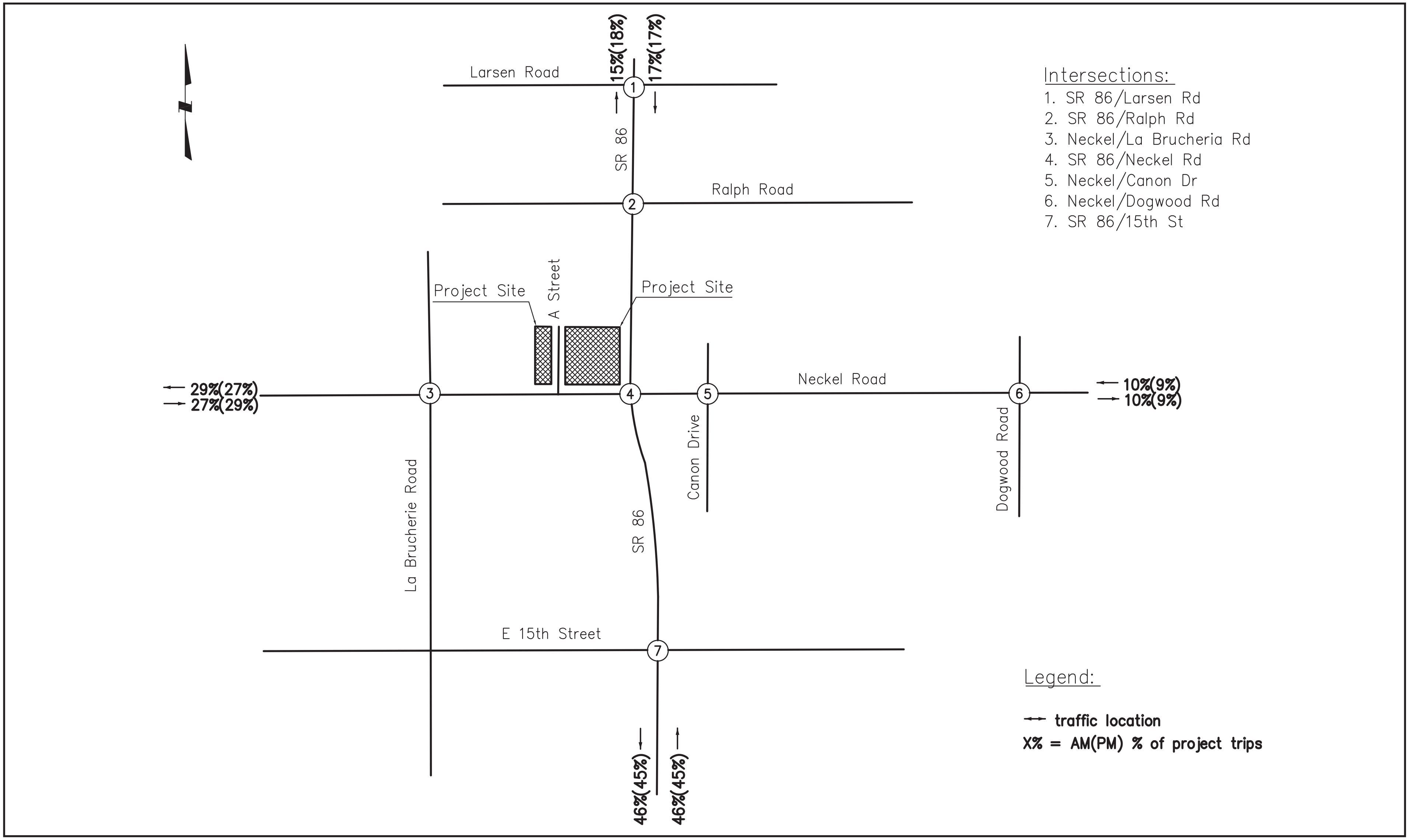

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FIGURE 9

Project Trip Distributions

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Map Source: Advantec Consulting Engineers

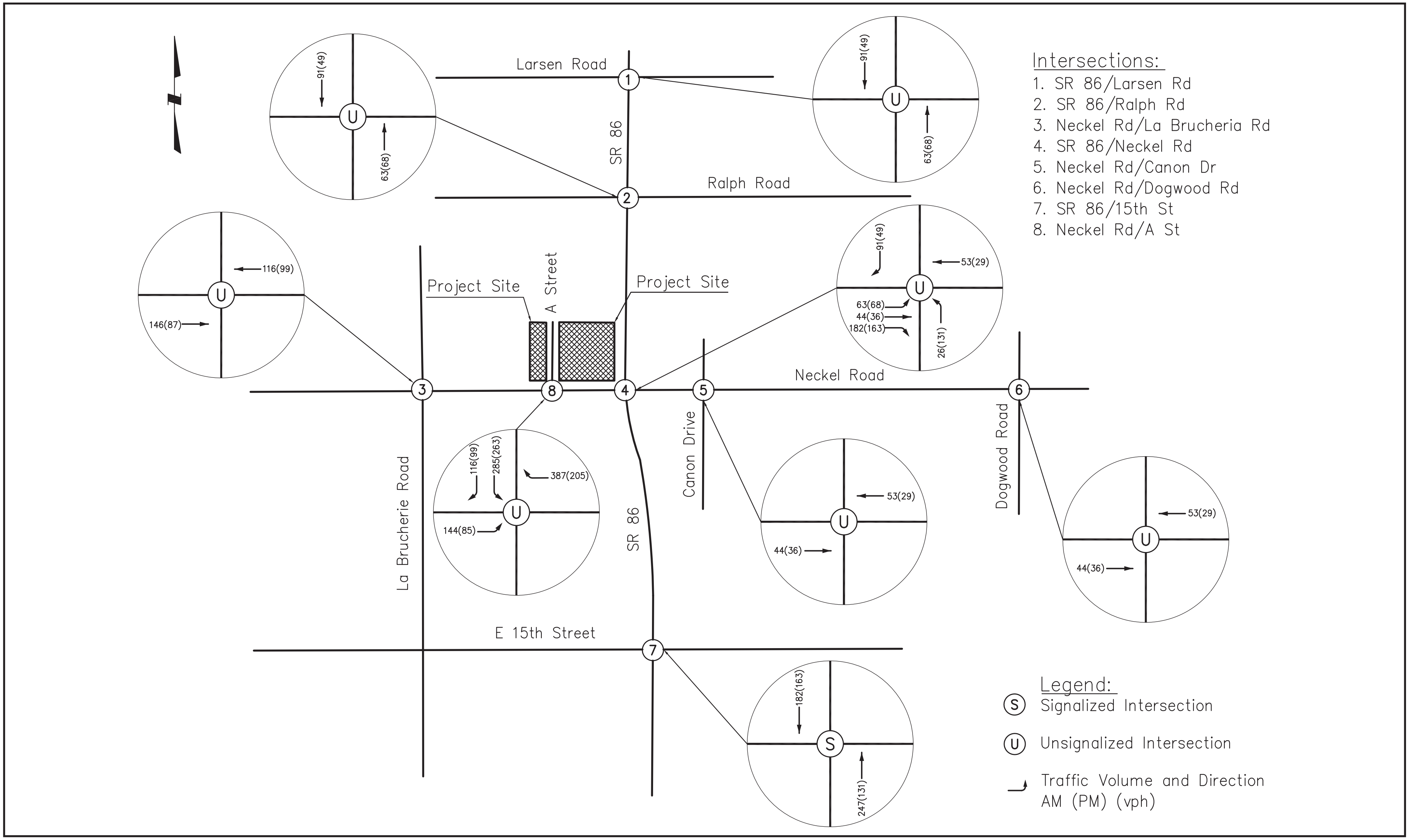

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FIGURE 10

Project Trip Assignments

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40,000square feet of office space (although these were constructed under a ministerial permit); nor does it include the convenience store with gas pumps or 5,000 square feet of fast food restaurant space. Thus, the traffic impact analysis represents a worst case scenario.

2.7.3.2 Project Impact Summary

ADVANTEC prepared the TIS based on the discussions with City of Imperial staff in determining the approach and methodology to be applied in this study. SYNCHRO 7.0 software was used to evaluate LOS at all study intersections and project access intersection (A Street) for both AM and PM peak periods for each of the following scenarios:

- Existing Year (2010)
- Opening Year (2012) Without Project
- Opening Year (2012) With Project Phase I
- Opening Year (2017) Without Project
- Opening Year (2017) With Project Phases I + II
- Horizon Year (2035) Without Project
- Horizon Year (2035) With Project Phases I + II

Table 17 below shows results of all level of service analyses performed as part of the TIS. Figures 11 and 12 show the near-term with project traffic volumes and Year 2035 with project traffic volumes respectively. According to the analysis, three intersections would operate at LOS E or F:

- SR-86 and Larsen Road - The resulting LOS F in 2017 opening year with Phase I, II and cumulative project was due to side street delays on Larsen Road. The combined volumes for westbound and eastbound on Larsen Road was 47 mph; thus, due to the minimal traffic volumes, signalization is not warranted at this intersection. Impacts would be ***less than significant***.

- SR-86 and Ralph Road - The resulting LOS F was due to higher westbound lane volumes that caused side street delays in both 2017 and 2035 scenario. Impacts would be ***significant.***

- SR-86 and Neckel Road - The resulting LOS F was due to an overall increase of traffic volumes from generated project trips that caused side street delays in years 2012, 2017, and 2035 scenarios. Impacts would be ***significant.***

TABLE 17
LEVEL OF SERVICE SUMMARY

	Existing 2010				Yearr 2012 - No Project				Year 2012 - Phase I				Year 2017 - No Project				Year 2017 - Phase I & II				Year 2017 - Phase I & II & Cumulative				Year 2035 - No Project				Year 2035 -Phase I & II				Year 2035 - Phase I & II & Cumulative			
	AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM	
Intersection	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR-86 and Larsen Road*	16.0	C	17.4	C	16.4	C	17.9	C	17.7	C	19.5	C	17.8	C	19.3	C	21.1	C	22.0	C	21.1	C	-	F	25.0	D	31.4	D	31.0	D	37.6	E	30.8	D	-	F
SR-86 and Ralph Road*	19.1	C	22.6	C	20.1	C	23.9	C	22.4	C	26.9	D	23.1	C	27.8	D	30.2	D	34.3	D	-	F	-	F	-	F	-	F	-	F	-	F	-	F	-	F
Neckel Road and La Brucherie Rd.*	9.4	A	9.3	A	9.4	A	9.3	A	9.9	A	9.8	A	9.4	A	9.4	A	10.6	B	10.3	B	10.6	B	13.9	B	9.7	A	9.7	A	11.0	B	10.7	B	11.0	B	10.6	B
SR-86 and Neckel Road*	21.4	C	29.6	D	22.6	C	31.9	D	-	F	-	F	27.4	D	40.7	E	-	F	-	F	-	F	-	F	-	F	-	F	-	F	-	F	-	F	-	F
Neckel Road and Canon Dr.*	9.6	A	10.4	B	9.7	A	10.5	B	10.1	B	10.7	B	9.9	A	10.8	B	10.7	B	11.3	B	10.7	B	11.3	B	10.7	B	12.2	B	11.7	B	13.0	B	11.7	B	13.0	B
Neckel Road and Dogwood Rd.*	10.0	A	10.0	A	10.1	B	10.0	B	11.5	B	12.6	B	10.3	B	10.3	B	12.2	B	13.4	B	12.3	B	13.4	B	11.7	B	11.7	B	14.2	B	16.6	C	14.2	B	16.6	C
SR-86 and 15th Street	6.8	A	8.8	A	6.8	A	9.0	A	6.6	A	9.1	A	7.5	A	9.8	A	7.4	A	9.9	A	7.4	A	9.9	A	8.5	A	13.5	B	8.7	A	13.7	B	8.7	A	13.7	B
Neckel Road and "A" Street	-	-	-	-	-	-	-	-	9.5	A	9.8	A	-	-	-	-	17.1	C	13.4	B	17.6	C	13.4	B	-	-	-	-	18.9	C	13.9	B	18.9	C	13.9	B

*Unsignalized

Red text represents a significant impact.

Map Source: Advantec Consulting Engineers

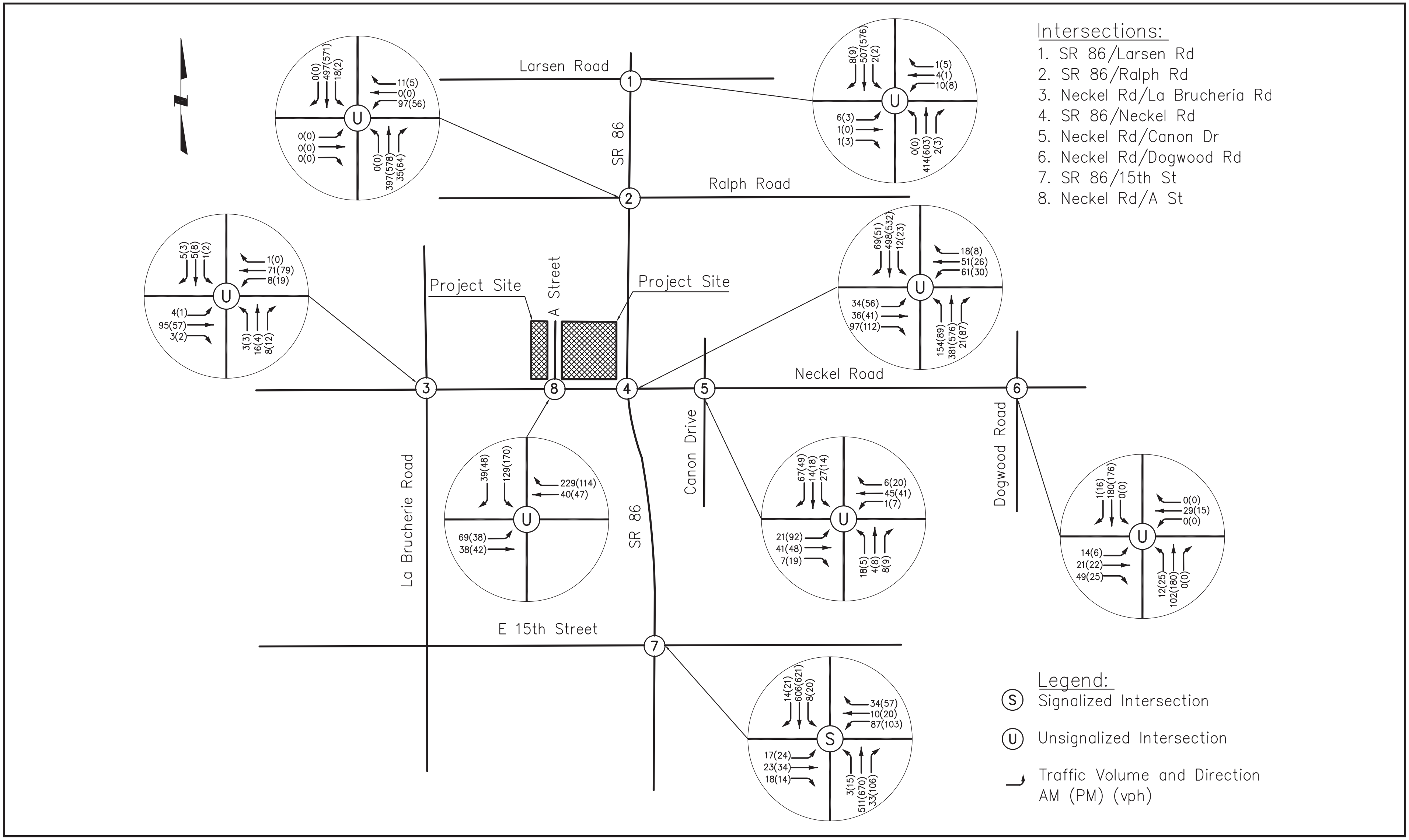

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FIGURE 11

Near-term with Project Traffic Volumes

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Map Source: Advantec Consulting Engineers

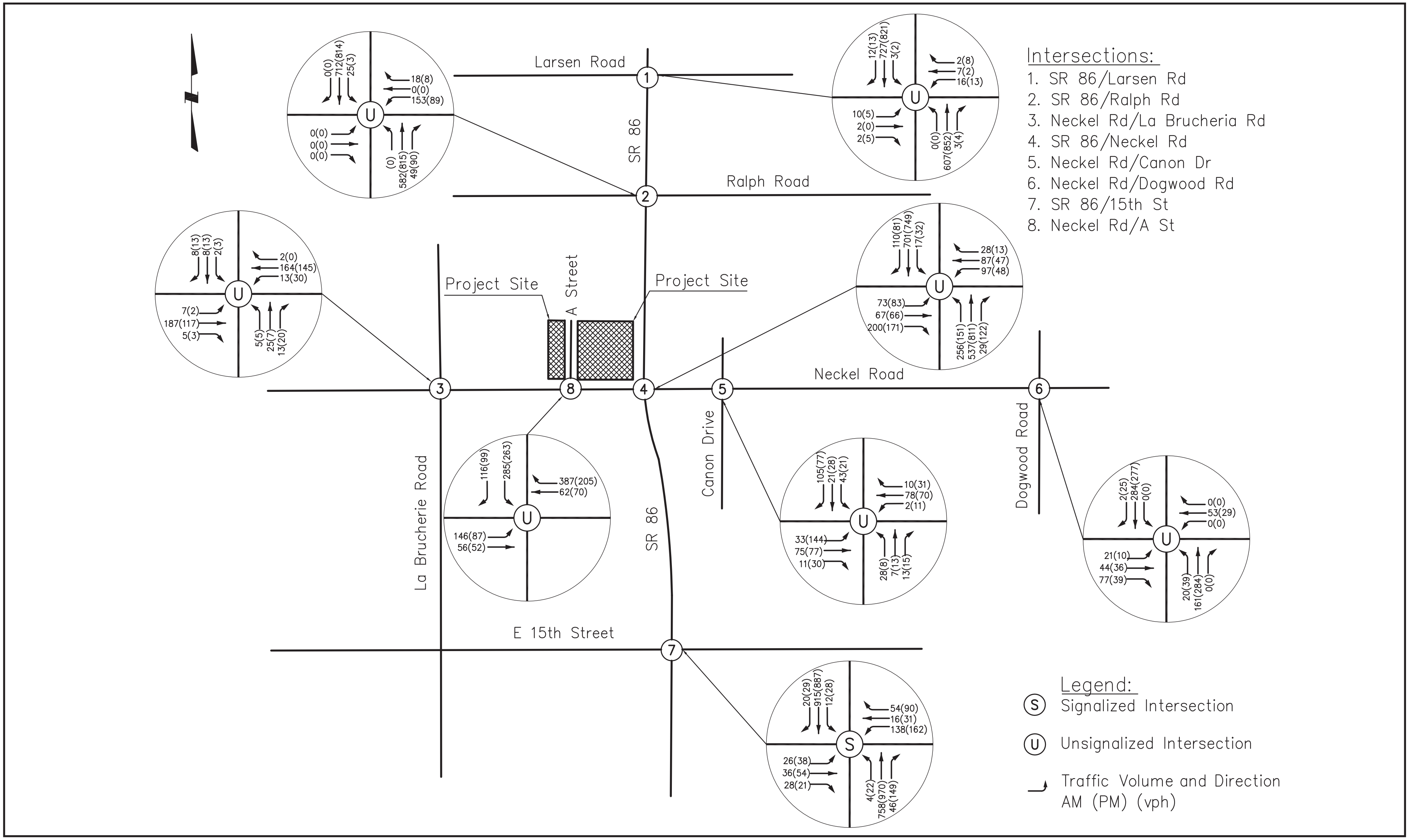

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FIGURE 12

Year 2035 with Project Traffic Volumes

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2.7.4 Significance of Impacts

As described above and as shown in Table 17, three intersections of the eight studies intersections would operate at LOS E or F:

- SR-86 and Larsen Road - The resulting LOS F in 2017 opening year with Phase I, II and cumulative project was due to side street delays on Larsen Road. The combined volumes for westbound and eastbound on Larsen Road was 47 mph; thus due to the minimal traffic volumes, signalization is not warranted at this intersection. Impacts would be ***less than significant***.

- SR-86 and Ralph Road - The resulting LOS F was due to higher westbound lane volumes that caused side street delays in both 2017 and 2035 scenario. Therefore, impacts would be ***significant*** (**T-1**).

- SR-86 and Neckel Road - The resulting LOS F was due to an overall increase of traffic volumes from generated project trips that caused side street delays in years 2012, 2017, and 2035 scenarios. Impacts would be ***significant*** (**T-2**).

2.7.5 Mitigation Measures

Table 18 below shows the LOS improvements with mitigation measures by implementing signals at the following intersections, while maintaining existing lane configurations at the intersections. With implementing signalization at the two intersections, LOS will improve significantly from LOS F to LOS B or better.

M-T-1 SR-86 and Ralph Road – Signalization shall be required at this location to minimize side street delays.

M-T-2 SR-86 and Neckel Road – Signalization shall be required at this location to minimize side street delays.

2.7.6 Significance after Mitigation

Mitigation measures **M-T-1** and **M-T-2** would reduce project-related traffic impacts to a level that is ***less than significant***.

TABLE 18
LEVEL OF SERVICE SUMMARY - MITIGATION MEASURES

	Year 2012 - Phase I				Year 2017 - No Project				Year 2017 - Phase I & II				Year 2017 - Phase I & II & Cumulative				Year 2035 - No Project				Year 2035 - Phase I & II				Year 2035 - Phase I & II & Cumulative			
	AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM	
Intersection	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR-86 and Ralph Road*	-	-	-	-	-	-	-	-	-	-	-	-	6.3	A	5.0	A	7.0	A	4.8	A	5.7	A	3.9	A	7.4	A	6.6	A
SR-86 and Neckel Rd*	5.5	A	5.3	A	-	-	3.2	A	8.4	A	6.8	A	33.4	D	6.8	A	5.8	A	3.7	A	10.7	B	7.7	A	53.5	D	7.7	A

3.0 Mitigation Monitoring and Reporting Program

The following is a summary of the requirements to be imposed on the project and be made project conditions by the City in order to reduce potential impacts to a level that is less than significant:

Impacts	Mitigation
Section 2.1 Air Quality	
AQ-1 Construction-Related Emissions Commercial projects whose emissions are below the ICAPCD's significance thresholds must comply with the latest rules adopted for the control of fugitive dust. In addition, the ICAPCD requires the use of "standard" mitigation measures for construction equipment and fugitive dust, as listed in the *CEQA Air Quality Handbook*. Without implementation of these measures, impacts would be ***significant***.	**M-AQ-1** **Standard Measures for Fugitive PM_{10} Control** The project shall comply with ICAPCD Regulation VIII. Incorporation of Regulation VIII standard measures for construction are listed below: a. All disturbed areas, including bulk material storage which is not being actively used, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material such as vegetative ground cover. b. All on-site and off-site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering. c. All unpaved traffic areas one acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emission shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering. d. The transport of bulk materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at delivery site after removal of bulk material. e. All track-out or carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area. f. Movement of bulk material handling or transfer shall be stabilized prior to handling or

Impacts	Mitigation
	at points of transfer with application of sufficient water, chemical stabilizers, or by sheltering or enclosing the operation and transfer line. **Standard Measures for Construction Equipment** a. Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel-powered equipment. b. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to five minutes as a maximum. c. Limit, to the extent feasible, the hours of operation of heavy duty equipment and/or the amount of equipment in use. d. Replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).
AQ-2 Operation-related Emissions As indicated in Table 5 above, the long-term project operational emissions of ROG, NO$_x$, CO and PM$_{10}$ would be less than significant. The ICAPCD therefore requires that “standard” mitigation measures for commercial facilities be implemented. Without implementation of these measures, impacts would be ***significant***.	**M-AQ-2** The project shall include the following standard and discretionary measures consistent with the ICAPCD handbook. **Standard Site Design Measures** a. Provide on-site bicycle lockers and/or racks. b. Provide on-site eating, refrigeration, and food vending facilities to reduce lunchtime trips. c. Provide shower and locker facilities to encourage employees to bike and/or walk to work. **Standard Energy Efficiency Measures** a. Comply with Title 24 requirements for reducing facility energy use.
Section 2.2 Biological Resources	
B-1 An active drainage flows along the eastern edge of the Project site that may be considered a jurisdictional water. The USACE and the CDFG have jurisdiction over certain streams, watercourses, and wetlands. Alteration, such as filling, of these jurisdictional areas requires a permit from USACE and a Streambed Alteration Agreement from CDFG. Project temporary and indirect impacts to 0.40 acres of jurisdictional waters could be ***potentially significant***	**M-B-1** Silt netting and a chain link fence shall be used along the drainage feature (Potential Jurisdictional Area) that borders the eastern part of the Project site. This fence would guard against any inadvertent effects to a Potential Jurisdictional Area including, but not limited to, the introduction of fill, machine fuel, and construction debris.
B-2 Trimming or removal of vegetation could	**M-B-2** To avoid impacts on nesting birds, construction

Impacts	Mitigation
destroy or disturb active nests. Equipment noise, vibration, lighting, and other human-related disturbance, could disrupt normal activities of birds found on or immediately adjacent to the project site. Project impacts to migratory and other nesting birds would be ***potentially significant***	activities should take place between September 1 and February 14, to avoid the nesting season of federally and State protected migratory birds. However, if construction occurs between February 15 and August 31, the following should be implemented: • A pre-construction survey (within three days prior to work in the areas) shall be conducted by a qualified biologist to determine the presence or absence of active nests within, or adjacent to, the Project site to avoid the nesting of breeding migratory birds. • If no nesting birds are found within or adjacent to the project work area during the pre-construction survey period, construction activities may proceed as scheduled. If an active nest is found within or adjacent to the project work area during construction, a "No Construction" Buffer Zone would be established around the active nest (usually a minimum radius of 200 feet for passerine birds and 500 feet for raptors) to minimize project impacts on the nesting activity. The onsite Project Biologist/Biological Monitor will determine and flag the appropriate buffer size required, based on the specific situation, tolerances of the species, and the nest locations. Project activities may resume in the buffer area when the Project Biologist/Biological Monitor has determined that the nest(s) is no longer active. Also, a Biological Monitor should be present during vegetation removal in the nesting season to minimize impacts on nesting birds. If listed Endangered or Threatened species are found within 500 feet of the Project Work Area, the USFWS and CDFG, as appropriate, will be consulted at the time they are first observed.
Section 2.4 Greenhouse Gas	
GHG-1 Because increases in GHG must be offset for net emissions to decrease to 1990 levels by 2020, the project's GHG emissions are ***potentially significant*** and would require mandatory implementation of project design features to reduce GHG emissions	**M-GHG-1** The emissions estimates presented above assume no special architectural design features or operating characteristics, beyond those required by Title 24, which would reduce GHG emissions. The following is a list of project design features that will reduce GHG emissions beyond "business as usual" levels. • **On-site bicycle lockers and/or racks.** Bicycle use produces no GHG emissions. Providing infrastructure that promotes bicycle use will encourage bike travel and help in reducing the use of automobiles. • **Street tree planting.** Trees help in counteracting CO_2 emissions by absorbing

Impacts	Mitigation
	CO_2 from the air. Trees also help in lowering air temperature by providing shade and transpiring water, thereby reducing building cooling loads during summers. • **Shade tree planting in parking lots** to decrease cooling loads on cars, thereby reducing fuel consumption. • **Public transit accessibility with transit turnouts and direct pedestrian access and bus stop improvements such as shelters, route information, benches and lighting.** Transit oriented development along with a pedestrian friendly environment will encourage the use of transit and help in reducing the use of automobiles. On the basis of passenger miles travelled, public transportation is more fuel efficient than use of private vehicles. • **Pedestrian signalization and signage to improve pedestrian safety.** Providing infrastructure that facilitates a pedestrian friendly environment will encourage pedestrian travel and help in reducing the use of automobiles. • **Roof material with a solar reflectance value meeting the EPA/DOE Energy Star® rating to reduce summer cooling needs.** The roof of a building acts as a large open space that directly absorbs solar heat and transfers this heat to the interior of the building. Hence, a roofing material with good solar reflectance decreases the amount of heat absorbed by the roof and helps in maintaining low interior temperatures, thereby reducing energy required to operate the HVAC system for cooling the building. • **Built-in energy efficient appliances, where applicable.** Energy efficient appliances using advanced technology use 10 to 50 percent less energy than standard appliances. Decreased energy use in buildings greatly helps in reducing GHG emissions produced during energy generation, distribution and consumption. • **Double-paned windows and low E-glass.** See discussion above. • **Low energy parking lot and street lights (i.e. low-pressure sodium vapor).** Using energy efficient lighting will reduce consumption of electricity for lighting. • **Energy efficient interior lighting.** A building's interior lighting system is both a dominant consumer of electrical energy and a major source of internal heat. In commercial

Impacts	Mitigation
	buildings it normally accounts for more than 30% of the total electrical energy consumed. Using energy efficient lighting not only reduces consumption of electricity for lighting but also reduces cooling loads since less waste heat needs to be removed by the air conditioning system. • **High efficiency gas/electric space heating.** Using energy efficient equipment will reduce consumption of electricity for heating. • **Pedestrian and bicycle access from nearby residential neighborhoods.** The project is a mixed used development with a variety of basic amenities such as schools, parks and retail spaces, within close proximity to residential land. Additionally, every effort has been made to provide a well-planned infrastructure to promote a pedestrian and bicycle-friendly environment. All these measures will greatly help to promote pedestrian and bicycle travel for short everyday commuting trips in and around the project area, thereby reducing the use of automobiles.
Section 2.6 Noise	
N-1 The project would not result in peak hour noise level increases greater than 5 dBA at the nearest sensitive receptors off of Neckel Road and SR-86, between the year 2035 and existing noise levels. However, future noise levels for 2035 will be greater than existing noise levels off of Neckel Road between La Brucherie Road and SR-86. This impact would be **significant.**	**M-N-1** The following mitigation measure will reduce noise exposures along the south side of Neckel Road between La Brucherie Road and SR-86 to less than significant levels: • Construct a 6-foot-high sound wall on the south side of Neckel Road wherever residential properties would otherwise be exposed to project-induced traffic.
N-2 According to the State of California guidelines, the noise levels shown in Tables 13 and 14 are considered “conditionally acceptable,” for hotels. The noise technical report finds that impacts could be ***potentially significant*.**	**M-N-2** The final site design and design of the hotel must ensure that interior exposures in guest rooms are below 45 dBA CNEL. The following mitigation measures shall be included in the final project design: • Use acoustical (soundproof) glass for guest room windows and sliding doors (if applicable); the windows and door would each consist of two panes of glass, separated by at least 2 inches of air space. • Use dense building materials and/or increase exterior wall thickness on the highway side of the hotel. • Design an air gap between the exterior and interior panels so that sound is not transmitted directly from the exterior wall to

Impacts	Mitigation
	the interior wall of the guest room. • Use sound-absorbing carpeting, furniture, and other room furnishings. • Design a central heating and cooling system instead of using wall-penetrating individual room units. • Use compressible neoprene weather-stripping rather than felt or other fibrous types for sound insulation.
Section 2.7 Transportation/Traffic	
T-1 SR-86 and Ralph Road	**M-T-1** SR-86 and Ralph Road – Signalization shall be required at this location to minimize side street delays.
T-2 SR-86 and Neckel Road	**M-T-2** SR-86 and Neckel Road – Signalization shall be required at this location to minimize side street delays.

4.0 Initial Study/Environmental Checklist Form

1. Project title: Imperial Center (Phase I) Project

2. Lead agency name and address:

   City of Imperial
   420 South Imperial Avenue
   Imperial, CA 92251

3. Contact person and phone number:

   Jorge Galvan
   Planning and Development Director
   City of Imperial
   (760) 355-3326

4. Project location:

   State Route 86 and Neckel Road, Imperial, CA 92251

5. Project sponsor's name and address:

   Oasis Growth Partners, LLC
   2275 Huntington Drive, Suite 534
   San Marino, CA 91108

6. General plan designation:

   Neighborhood Commercial

7. Zoning:

   A2U (Agricultural Holding Zone)

8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or offsite features necessary for its implementation. Attach additional sheets if necessary.)

   The project consists of an 8-acre portion of the 25 acre property at the northwest corner of State Route 86 (SR-86) and Neckel Road which would be used for commercial development. The proposed commercial uses include a hotel, restaurant, retail, and a drive-through building with use to be determined. A four-story hotel would be located in the northern area of the site and would include 108 rooms, a hotel restaurant, and an indoor pool. A 5,000-square-foot restaurant (likely a "Denny's") is proposed to the southwest of the hotel. The southeastern corner of the site, adjacent to SR-86 and Neckel Road, would include three retail buildings totaling approximately 10,000 square feet; while the southwestern corner would include a 2,500-square-foot drive-through building (tenant unknown). A lot line adjustment would be required to complete the project.

9. Surrounding land uses and setting: Briefly describe the project's surroundings:

   The site is located in a mixed agricultural and residential area. Large-lot single-family homes exist to the southwest and south. Single-family track homes and multi-family homes are located to the east. The Morning Star Subdivision, located directly north and west of the project site where agricultural uses currently exist, has been approved but has not been constructed.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

    City of Imperial –Site Plan Review (SPR), lot line adjustment, grading permit, and building permit.

    U.S. Army Corps of Engineers – Section 404 Permit
    Colorado River Regional Water Quality Control Board – 401 Water Quality Certification and Waste Discharge Requirement Permit
    California Department of Fish and Game – 1602 Streambed Alteration Agreement

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics
☒ Biological Resources
☒ Greenhouse Gas Emissions
☐ Land Use/Planning
☐ Population/Housing
☒ Transportation/Traffic

☐ Agriculture Resources
☒ Cultural Resources
☐ Hazards & Hazardous Materials
☐ Mineral Resources
☐ Public Services
☐ Utilities/Service Systems

☒ Air Quality
☐ Geology/Soils
☐ Hydrology/Water Quality
☒ Noise
☐ Recreation
☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date

Name

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance

Issues:

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
There are no designated scenic vistas in the project area.				
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
There are no scenic highways within the vicinity of the project; therefore, there would be no impact.				
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
The surrounding community is comprised of agricultural, residential, and commercial uses. The project type and design is consistent in character with the adjacent land uses and therefore would not degrade the existing visual character or quality of the site.				
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
Lighting for the project would be consistent with City of Imperial standards and would not create a substantial new source of light or glare. Therefore, impacts would be less than significant.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. – Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

The project site contains “Farmland of Local Importance” according to the Farmland Mapping and Monitoring Program. “Farmland of Local Importance” is land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. The parcel has been farmed in the past; however, the property is fallow with faint traces of furrows. The project site is not currently used for agriculture.

The zoning of the project site is A2U, which is intended to allow agricultural use until the site is permitted/developed for another use. Once the site is permitted/developed with another use, the zoning classification regulations for that use would apply. This zoning streamlines the approval process, as there is no need for a General Plan Amendment to change land use from agricultural to residential, commercial, or another urban use.

Because the project site is not “Prime Farmland”, “Unique Farmland”, or “Farmland of Statewide Importance” and is not used for agriculture, and because the project site is zoned A2U which is intended for eventual urban development, there would be no impact to agriculture due to implementation of the project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

As discussed above, the project site is zoned A2U which is intended for eventual urban development. Additionally, there are no Williamson Act contracts on the project site or in the vicinity. Therefore, there would be no impact.

c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

There would not be any indirect or cumulative impacts to the environment which could cause conversion of farmland to non-agricultural uses.

III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐

As discussed in the air quality technical report for this project (see Appendix A) and in Section 2.1 above, the regional plans for the City of Imperial are the *1991 Air Quality Attainment Plan*, the *2009 8-Hour Ozone Modified Air Quality Management Plan* and the *State Implementation Plan (SIP) for PM-10 in the Imperial Valley*. According to the air quality technical report, the project is consistent with several provisions of the plans. By complying with Regulation VIII and the mitigation measures for construction emissions (M-AQ-1), the project would be consistent with the PM-10 emission control strategies prescribed by the *SIP for PM-10 in the Imperial Valley*. The project would not obstruct implementation of any air quality plan.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐

Commercial projects whose emissions are below the ICAPCD's significance thresholds must comply with the latest rules adopted for the control of fugitive dust. In addition, the ICAPCD requires the use of "standard" mitigation measures for construction equipment and fugitive dust, as listed in the *CEQA Air Quality Handbook*. Upon implementation of these measures, impacts would be less than significant.

As discussed in Section 2.1 above, the long-term project operational emissions of ROG, NO_x, CO, and PM_{10} would be less than significant. The ICAPCD therefore requires that "standard" mitigation measures for commercial facilities be implemented. Upon implementation of these measures (see M-AQ-2), impacts would be less than significant.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐

As discussed above, regional air pollutant emissions from project operations will be less than significant (provided all “standard” mitigation is implemented per **M-AQ-1 and M-AQ-2**). Therefore, cumulative impacts will also be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

The nearest sensitive receptor is a home about 295 feet away. The only other sensitive receptor in the area is the Frank M. Wright Middle School (885 North Imperial Avenue), which is about 2,200 feet south of the project’s southern boundary.

Construction of the project would generate short-term and intermittent emissions. Although sensitive receptors would be exposed to diesel exhaust, which has been associated with lung cancer, the duration of exposure would not be sufficient to result in a significant cancer risk. Operation of the project would not introduce significant sources of stationary source emissions. Area source emissions generated on-site by operation and maintenance of the proposed land uses would be minimal, and would not expose adjacent sensitive receptors to substantial pollutant concentrations.

Operation of the project would increase local vehicle traffic, which may contribute to off-site air quality impacts. The traffic increases in nearby intersections may contribute to traffic congestion, which may create “pockets” of CO called hotspots. Typically, hotspots analyses are not performed for unsignalized intersections, which have lower traffic volumes than those with signals. This is particularly the case when a hotspots analysis shows no impacts for the most congested, signalized intersections. Given the acceptable level of service at the current and proposed signalized intersections, a quantitative CO hotspots analysis is not necessary. Localized CO concentrations will be less than significant.

e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

As discussed in Section 2.1.3.2(c), the project would not generate or expose sensitive receptors to objectionable odors. Additionally, the project would not be located within one mile of an odor generator. Therefore, there would be no impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

The project area is located in potential habitat for the western burrowing owl (*Athene cunicularia*), which is designated as a California species of special concern. During the 2012 survey, project biologists found that vegetation had decreased dramatically from sparse to almost none. Although there are existing empty pipes and piled construction materials present within the project survey area (PSA) that may provide nesting sites for this species, each empty pipe hole and pile of construction materials was examined during the 2012 survey and no evidence of this species, including tracks, bird droppings, or gathering materials that are usually present for their nesting activities, was present within the PSA. Therefore, this species will likely not occur within the PSA and no impacts are expected. Nor are any impacts anticipated to the flat-tailed horned lizard or western yellow bat for the same reasons.

Trimming or removal of vegetation could destroy or disturb active nests. Equipment noise, vibration, lighting, and other human-related disturbance, could disrupt normal activities of birds found on or immediately adjacent to the project site. Project impacts to migratory and other nesting birds would be potentially significant and would require mitigation as set forth in Section 3.0 of this document in order to prevent direct and/or indirect impacts to MBTA/CDFG-protected species,

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒

The project site does not contain riparian habitat. What little vegetation occurs on the project site is not considered to be a sensitive natural community within the Imperial Valley. Therefore, there will be no impact.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐

An active drainage flows along the eastern edge of the project site that may be considered a jurisdictional water. The USACE and the CDFG have jurisdiction over certain streams, watercourses, and wetlands. Alteration, such as filling, of these jurisdictional areas requires a permit from USACE and a Streambed Alteration Agreement from CDFG. There is potential for construction of the project to result in a significant impact to approximately 0.4 acre of jurisdictional area. Mitigation identified in the MMRP (Section 3.0) would reduce impacts to below a level of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐

The project area is not within an identified wildlife movement corridor. However, migratory birds may nest within the project area. Project implementation and construction-related activities, including, but not limited to, tree/vegetation removal, materials lay-down, and machine/equipment noise, may result in the disturbance of nesting MBTA/CDFG-protected species that could occur within project site. Trimming or removal of vegetation could destroy or disturb active nests. Equipment noise, vibration, lighting, and other human-related disturbance could disrupt normal activities of birds found on or immediately adjacent to the project site. Project impacts to migratory and other nesting birds would be potentially significant. Mitigation identified in the MMRP (Section 3.0) would reduce impacts to below a level of significance.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

The project would not conflict with any local policy or ordinance protecting biological resources; thus, there would be no impact.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

There are no Habitat Conservation Plans or Natural Community Conservation Plans on or within the vicinity of the project site. Therefore, there would be no impact.

V. CULTURAL RESOURCES -- Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?	☐	☐	☒	☐

One historic cultural resource, a section of the Dahlia Drain, is located on-site. The drain is part of the IID canal system and current development plans show this portion of the drain area as being impacted. It is supposed the drain will be covered with a concrete roof or the existing ditch will be replaced with a culvert. Only the portions of the overall canal system within the project will be affected, and minor impacts are not likely to be detrimental to the historic integrity of the entire canal system. Also, as it is unlikely that the IID system will be looked at as a whole in any future project, recordation of the individual segments on a project-by-project basis will be the main means of recording the IID system. Therefore, impacts are not considered significant.

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?	☐	☐	☐	☒

There are no identified archaeological resources located on the project site.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

There are no identified unique paleontological resources or unique geologic features identified on-site. Therefore, there would be no impact.

d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

There are no known cemeteries located within the vicinity of the project site. Thus, there would be no impact.

VI. GEOLOGY AND SOILS -- Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐

As indicated in the geotechnical report prepared for the project, there are no faults identified by the Alquist-Priolo Fault Zoning Map on or within the vicinity of the project site. The project site is within a seismically active area; however, adherence to the Uniform Building Code would ensure that impacts are less than significant. The geotechnical report is provided as Appendix H to this report.

ii) Strong seismic ground shaking?	☐	☐	☒	☐

The project area is seismically active, and development would require implementation of project design measures and adherence to the Uniform Building Code. Implementation of these design and building techniques would ensure that impacts are less than significant.

iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐

Per the geotechnical report, since the potentially liquefiable sandy soil are overlain by 11 feet of stiff clay which resist groundwater movement, it is unlikely that the light structure loads planned are sufficient to result in liquefaction to induce settlement greater than the surrounding land mass. The project would implement project design measures required by the Uniform Building Code and any other required ground improvement measures needed to ensure that impacts are less than significant.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☐	☐	☒

Due to the completely flat and level nature of the project site, there is no potential for a landslide incident and there would be no impact.

b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

Development of the project would require Best Management Practices (BMPs) that would reduce the potential for erosion to a level that is less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐

The project would implement project design measures required by the Uniform Building Code and any other required ground improvement measures needed to ensure that impacts are less than significant. Additionally, a geotechnical consultant would provide tests and observations during construction.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐

Many of the soils in the region are known to be expansive. Common measures such as over-excavating, compaction, and slab-on-grade foundations would reduce the potential for expansion. The project design measures contained in the geotechnical report, the measures required by the Uniform Building Code, and any other required ground improvement measures needed would ensure that impacts are less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

The project site would be connected to City wastewater disposal systems; thus, there would be no impact.

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
VII. GREENHOUSE GAS EMISSIONS -- Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☒	☐	☐

As of the writing of the climate change report (see Appendix D), the lead agency (City of Imperial) has not adopted quantitative thresholds of significance for GHG emissions from residential and commercial projects. It is therefore not possible to compare the project's emissions to a lead agency threshold. There are currently no regional or local climate action plans or general or specific plan provisions to reduce GHG emissions in the study area. The only applicable plan is the set of regulations to be developed under AB 32, which has a target of reducing GHG emissions to 1990 levels by 2020. The potential significance of emissions from the hotel project therefore depends upon the extent to which the project furthers or hinders implementation of AB 32.

Essentially all the 2,800 tons per year of GHG emissions forecast for buildout will also occur by and in 2020, including the amortized construction GHG emissions. Because increases in GHG must be offset for net emissions to decrease to 1990 levels by 2020, the project's GHG emissions are potentially significant and would require mandatory implementation of project design features (listed in Section 3.0 of this document) to reduce GHG emissions.

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☒	☐	☐

See VII-a.

VIII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒

The project does not propose to transport, use, or dispose of hazardous materials. Therefore, there would be no impact to public safety.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒

The project does not include any land uses which could have a potential for the release of hazardous materials into the environment. There would be no impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

The Frank M. Wright Middle School is located 2,200 feet (0.4 mile) south of the project's southern boundary. The project does not propose any land uses or activities which would emit, use, handle, or dispose of hazardous materials.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

The project is not located on a site that is included in the list of hazardous materials sites, and there are no above- or below-ground storage tanks, soil stains, or other indications of a potential hazard to the public. There is also a lack of any type of structure on-site which could potentially contain ACM or LBP. Therefore, there would be no impacts.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

The project site is located approximately one mile northeast of the Imperial County Airport. The Airport Land Use Compatibility Plan defines five Compatibility Zones for the Imperial County Airport: A (Runway Protection Zone), B1 (Approach/Departure Zone), B2 (Extended Approach/Departure Zone), C (Common Traffic Pattern), and D (Other Airport Environs). The project site is located outside these safety zones. There would be no impact.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

The project site is not within 2 miles of a private airport and there would be no impact.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

The project would adhere to the City's requirements and the site plan review would ensure that the project would not interfere with an emergency response or evacuation plan.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

The project site is not located adjacent to wildlands; therefore, there would be no impact.

IX. HYDROLOGY AND WATER QUALITY -- Would the project:

a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐

The project would adhere to all applicable regulations regarding water discharge and water quality. Additionally, the project would implement BMPs to control runoff when project construction occurs.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒

Groundwater is not used in the City of Imperial because it is of poor quality and would require extensive treatment to make it suitable for domestic use. Therefore, the project would use City water rather than groundwater, and as such would not result in a net deficit of aquifer volume or a lowering of the water table.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐

Project development would alter existing drainage patterns. The project would be required to implement a drainage management plan in compliance with City requirements. BMPs would ensure that there would be no impacts from erosion or siltation. The project site does not drain into a stream or river as there are none nearby. Therefore, there would be a less than significant impact.

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
See IX-c				
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
The project shall be designed such that runoff so properly managed by the drainage system and would not create additional polluted runoff.				
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
The drainage system to be developed on-site shall be designed with treatment and flow BMPs that would ensure that water quality is not degraded and there would be a less than significant impact.				
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
The project is not located within a 100-year flood hazard area as mapped by a Flood Insurance Rate Map. Therefore, there would be no impact.				
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
The project is not located within a 100-year flood hazard area as mapped by a Flood Insurance Rate Map. Therefore, there would be no impact.				
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
The project is not located in an area identified to be at risk of flooding from dam or levee failure and there would be no impact.				
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
The project site is located inland and is far away from any large water bodies. Therefore, the risk of inundation is considered to be very low and there would be no impact.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒

The project site is currently vacant and undeveloped and the project is consistent with surrounding land uses. Therefore, the project would not divide an established community.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

The proposed uses (hotel, retail or filling station with a convenience market, restaurant, and coffee shop) would provide services that are consistent with the General Plan’s Neighborhood Commercial designation. The Neighborhood Commercial designation is intended to provide shopping centers (e.g., grocery, drug store, retail), approximately 10 acres in size at major intersections within residential areas.

The A-2-U (agricultural) zoning designation means that if the agricultural land is permitted/developed for another use, from that time forward, the land will follow urban zoning classification regulations. It also functions to streamline the approval process, as there is no need for a General Plan Amendment to change land use from agricultural to residential, commercial, or another urban use. As such, there would be no conflicts with the General Plan or Zoning Ordinance.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

The site is not subject to a habitat conservation plan or natural community conservation plan, and does not contain any significant vegetation, habitat, or wildlife resources. Therefore, there would be no impact.

XI. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

The project site is not within an area identified as containing mineral resources and there would therefore be no impact.

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

There are no mineral resource recovery sites within the vicinity of the project site identified on the General Plan. Thus, there would be no impact.

XII. NOISE -- Would the project result in:

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐

Pursuant to the noise analysis (see Appendix F) prepared by Ultrasystems, the project would not result in peak hour noise level increases greater than 5 dBA at the nearest sensitive receptors off Neckel Road and SR-86, between the year 2035 and existing noise levels. However, future noise levels for 2035 will be greater than existing noise levels off Neckel Road between La Brucherie Road and SR-86. This impact would be significant and would require mitigation (see Section 3.0).

Section 2.6.3.1 analyzed traffic noise on future hotel users. According to the State of California guidelines, the noise levels shown in Tables 13 and 14 are considered “conditionally acceptable,” for hotels. The noise technical report finds that impacts could be potentially significant and recommends mitigation measures (as listed in Section 3.0) to ensure that the hotel (as constructed) would meet State of California Guidelines.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

When the project site is developed, construction would be temporary and would not require blasting or other activities that would generate vibration or groundborne noise. See Section 2.4. for greater detail.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

See XII(a)

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

Future construction of the hotel, retail, and restaurants would increase ambient noise levels in the project vicinity. However, the construction-related increase would be temporary in nature and would cease when construction is complete. Additionally, the project will be required to adhere to City regulations such as limiting construction to the daylight hours. Pursuant to the Noise Analysis prepared for the project (see Appendix F), impacts would be less than significant. See Section 2.6 for greater detail.

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

<u>The project is not located within an airport land use plan. There would, therefore, be no impact.</u>

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

<u>The project is not located within 2 miles of a private airstrip. There would, therefore, be no impact.</u>

XIII. POPULATION AND HOUSING -- Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒

<u>The proposed future use of the site would be a hotel, retail, and restaurant uses. No residential uses are proposed and the site is adjacent to existing infrastructure. Therefore, the project would not induce substantial population growth that would be inconsistent with the General Plan.</u>

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

<u>There are no habitable structures within the project site. Therefore, no significant impacts would result from the project.</u>

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

<u>See XIII-b.</u>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
The project would be constructed in accordance to the City of Imperial Fire Department standards with respect to emergency access and fire hydrants such that there would be a less than significant impact on the ability of the City to provide fire protection.				
Police protection?	☐	☐	☒	☐
The site is already served by police service and the project is not of a type or scale that could affect the ability of the City to provide police protection. Impacts would be less than significant.				
Schools?	☐	☐	☐	☒
As the project does not include residential development, it would not generate a need for schools.				
Parks?	☐	☐	☐	☒
The project is not a residential development and would not cause a substantial population increase that would result in an impact to parks.				
Other public facilities?	☐	☐	☐	☒
No impacts to other public facilities from the project are anticipated.				
XV. RECREATION --				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
The project would not cause a population increase that could cause an impact on existing parks or recreational facilities. Thus, there would be no impact.				
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

See XV-a.

XVI. TRANSPORTATION/TRAFFIC -- Would the project:

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☒	☐	☐
The traffic impact study (see Appendix G) prepared for this project determined that the project would generate a maximum of 927 total ADT, with 72 inbound/56 outbound trips during the AM peak hour and 94 inbound/71 outbound trips during the PM peak hour. Significant impacts would occur at the intersection of SR-86 and Ralph Road in both the 2017 and 2035 scenario. Additionally, the intersection of SR-86 and Neckel Road would result in significant impacts in the 2012, 2017, and 2035 scenarios. Mitigation identified in the MMRP (Section 3.0) would reduce impacts to below a level of significance.				
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☒	☐	☐
See XVI(a)				
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
The project would not result in a change in air traffic patterns and there would, therefore, be no impact.				
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
The site plan would be reviewed by the City's engineering division for compliance with City standards and requirements. Therefore, Impacts would be less than significant.				
e) Result in inadequate emergency access?	☐	☐	☐	☒
Implementation of the project would not result in inadequate emergency access, as it would be designed to meet the City of Imperial standards. Therefore, impacts would be less than significant.				
f) Result in inadequate parking capacity?	☐	☐	☐	☒
Parking requirements on-site would be consistent with City standards. The project would provide 226 parking spaces, which is exactly what is required. As such, there would be no impact.				

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

The project would not conflict with adopted policies, plans, or programs supporting alternative transportation, as it will be in compliance with all City requirements related to alternative transportation. Thus, there would be no impact.

XVII. UTILITIES AND SERVICE SYSTEMS

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐

The project's wastewater treatment needs can be met by existing City service providers and there would not be an exceedance of treatment requirements.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐

The project would be serviced by the existing capacity of the City of Imperial's water and wastewater facilities and would not necessitate the construction of additional facilities or the expansion of existing facilities.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐

The project would construct storm water drainage facilities that would connect to the City's existing storm water infrastructure. The City's infrastructure is adequate to accommodate runoff from the project site. The proposed storm water facilities would not result in significant environmental effects.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐

The project site is currently within the service area of the water department, and no additional entitlements or resources are required in order to service the project site. There would be a less than significant impact on the City's water supplies.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that exceeds projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
The project would not exceed the wastewater treatment provider's ability to adequately serve the project in addition to its existing commitments. There would be a less than significant impact.				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
The Allied Imperial Landfill has capacity sufficient for the next 15 years. There would be a less than significant impact.				
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐
The project would comply with all applicable federal, state, and local statutes and regulations pertaining to solid waste. There would be a less than significant impact.				
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE --				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
The project has the potential to significantly degrade the quality of the environment, notably with respect to air quality, biological resources, greenhouse gas emissions, and noise, as well as to transportation/traffic infrastructure. Implementation of the measures listed in the MMRP (Section 3.0) would reduce impacts to below a level of significance.				
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

<u>Cumulative traffic impacts would be mitigated to a level that is less than significant upon implementation of the MMRP.</u>

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

<u>The project would not be associated with such impacts.</u>

5.0 References Cited

Imperial County Air Pollution Control District (ICAPCD)
2007 CEQA Air Quality Handbook: Guidelines for the Implementation of the California Environmental Quality Act of 1970, as amended. ICAPCD. November.

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APPENDICES

A:	Air Quality Analysis
B:	Cultural Resources Survey
C-1:	Biological Assessment Report
C-2:	Jurisdictional Delineation Report
D:	Climate Change Analysis
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F:	Noise Analysis
G:	Traffic Impact Analysis
H:	Geotechnical Report

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APPENDIX A

Air Quality Analysis

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AIR QUALITY ANALYSIS
FOR
HOLIDAY INN HOTEL & RESORT
CITY OF IMPERIAL, CALIFORNIA

Prepared For:

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Project No. 5778

September 2012

This analysis was prepared in accordance with Section 15063(d)(3) and Appendix G of the *State CEQA Guidelines* to determine the potential significant air quality effects on the physical environment that could result from the implementation of the proposed project.

Report Preparers:

Name & Title: MICHAEL ROGOZEN, Senior Principal Engineer

Signature: ______________________ Date: September 20, 2012

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Signature: ______________________ Date: __: September 20, 2012

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1.0 INTRODUCTION

Oasis Growth Partners, LLC (San Marino, California) is proposing to develop the "Alliance Regional Center" on a 25-acre site at the northwest corner of the intersection of Neckel Road and State Highway 86 (North Imperial Avenue) in Imperial, California.[1] The project will include a Holiday Inn hotel, two restaurants, and an office building. **Figure 1** (Regional Location) shows the site in relation to the surrounding area. The immediate vicinity of the project is shown in **Figure 2** (Project Vicinity).

This air quality analysis was prepared in accordance with the *CEQA Air Quality Handbook* prepared by the Imperial County Air Pollution Control District (ICAPCD).[2]

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[1] "Alliance Regional Center." ARC Booklet EN 20100525. Oasis Growth Partners, LLC, San Marino, California.

[2] Imperial County Air Pollution Control District. 2007. *CEQA Air Quality Handbook*. November.

UltraSystems

Source: Google Earth, 2010

Figure 1. Regional Vicinity Map
Holiday Inn

UltraSystems

Source: Google Earth, 2010

Figure 2. Project Study Area
Holiday Inn

🟥 Study Area Boundary
🟦 Approximate Limits of Drainage

2.0 PROJECT DESCRIPTION

The proposed Project site is located on a 25-acre, commercially zoned site at the northwest corner of Neckel Road and State Route 86 in the City of Imperial. The land adjacent to the project site on the north is in agricultural use. A development consisting of residences, a school and a park (the "Morningstar" project) is planned for an area immediately to the west that is also currently in agriculture. Across State Route 86 on the east is a residential neighborhood. An approximately 6-foot-high wall is between the highway and the residential neighborhood. Another residential neighborhood is at the southeast corner of Neckel Road and State Route 86. Finally, the land immediately south of the Project, across Neckel Road, is vacant.

Planned elements of Phase I of the Alliance Regional Center[3] are shown in **Figure 3 (Site Plan)**. Phase I of the Project will develop 8 acres. The project will include development of a 108-room, 4-story hotel, a fast food restaurant with a drive-through, a quality restaurant, and one 10,000-square foot office building. In addition, the project's utility lines will be connected with existing utility lines across State Route 86 by jack-and-bore tunneling beneath the roadway. A new lift station will also be built, at an as yet undetermined location on the site. Access to the Phase I development will be via a new north-south street (called "A Street"), which will form a tee intersection with Neckel Road. UltraSystems assumed that construction would start in January 2011 and that the Project would be operational by December 1, 2012.

3.0 EXISTING CONDITIONS

The proposed project site is located in the City of Imperial, which is in the Salton Sea Air Basin (SSAB). The SSAB includes the Imperial Valley and the central part of Riverside County, including the Coachella Valley. The Imperial Valley is bordered by the Salton Sea to the north, the Anza-Borrego Desert State Park to the west, the Chocolate Mountains to the northeast, and the U.S./Mexico border to the south.

3.1 Regional Climate

The following information is adapted from the Imperial County Air Pollution Control District's *Draft 2009 8-Hour Ozone Modified Air Quality Management Plan*.[4] The climate of Imperial County is characterized as a semi-arid desert. Winters are mild and dry with daily average temperature ranges between 65 and 75ºF (18-24ºC). During winter months it is not uncommon to record maximum temperatures of up to 80ºF. Summers are extremely hot with daily average temperature ranges between 104 and 115ºF (40-46ºC). It is not uncommon, during summer months, to record maximum temperatures of 120ºF. The annual rainfall is just over 3 inches (7.5 cm), most of it occurring in late summer or midwinter.

Climatic conditions in Imperial County are governed by the large-scale sinking and warming of air in the semi-permanent tropical high pressure center of the Pacific Ocean. The high-pressure ridge blocks out most mid-latitude storms except in winter, when the high is weakest and

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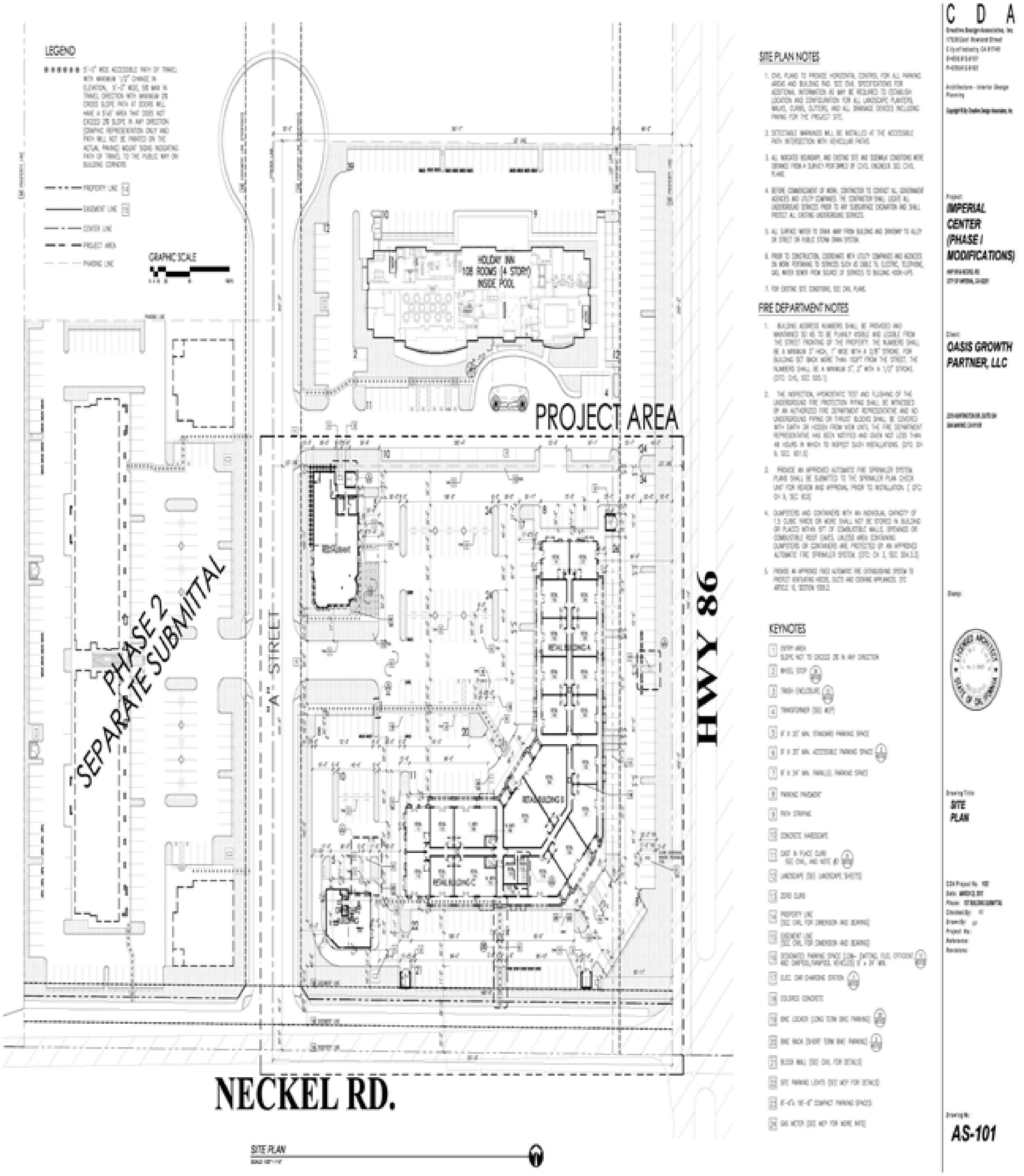
[3] Phase II is outside the scope of this report.

[4] *Draft 2009 8-Hour Ozone Modified Air Quality Management Plan.* Imperial County Air Pollution Control District, El Centro, California (June 9, 2010).

Figure 3 – Site Plan



farthest south. The coastal mountains prevent the intrusion of any cool, damp air found near the California coast. Because of the weakened storms and barrier, Imperial County experiences clear skies, extremely hot summers, mild winters, and little rainfall. The flat terrain of the valley and the strong temperature differentials created by intense solar heating produce moderate winds and deep thermal convection. The combination of subsiding air, protective mountains and distance from the ocean severely limits precipitation. Rainfall is highly variable. Precipitation from a single heavy storm may exceed the entire annual total during a later drought condition.

Humidity is low throughout the year, ranging from 28 percent in summer to 52 percent in winter. The large daily oscillation of temperature produces a corresponding large variation in the relative humidity. Nocturnal humidity rises to 50-60 percent, but drops to about 10 percent during the day.

Prevailing winds are from the west and northwest through the southwest, and are known to be from the Los Angeles area. A secondary flow maximum from the southeast is also observed. Occasionally Imperial County experiences periods of extremely high wind speeds, which can exceed 31 miles per hour. These high wind speeds occur most frequently during April and May. However, speeds of less than 6.8 mph account for more than one-half of the observed wind measurements.

Subsidence inversions occur during the warmer months, as descending air associated with the Pacific high-pressure cell comes into contact with cool marine air. The boundary between the two layers of air represents a temperature inversion that traps pollutants below it. Radiation, or surface, inversions typically develop on winter nights when air near the ground cools by radiation, and the air aloft remains warm. A shallow inversion layer that can trap pollutants is formed between the two layers. Imperial County experiences surface inversions almost every day of the year. Strong surface heating usually breaks these inversions, allowing pollutants to be more easily dispersed.

The climatological station closest to the site is the Imperial County Airport (Latitude 32.834017, Longitude -115.572297) station, which is approximately 2.2 miles south-southwest of the Project site (Latitude 32.861883, Longitude -115.570147).[5] The annual average temperature recorded at this station is 73.4 degrees Fahrenheit (˚F), with the average temperature of 88.5˚F during the summer and 58.3˚F during winter.[6] Precipitation in the area averages approximately 1.97 inches annually, and occurs mostly during the winter and infrequently during the summer.[7]

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[5] Location information from National Oceanographic and Atmospheric Administration, National Climate Data Center, http://www.ncdc.noaa.gov/oa/climate/normals/norminv.txt (Accessed June 22, 2010).

[6] "Calexico, California. Period of Record General Climate Summary – Temperature." Western Region Climate Center, http://www.wrcc.dri.edu/summary/ipl.ca.html (Accessed June 22, 2010).

[7] "Calexico, California. Period of Record General Climate Summary – Precipitation." Western Region Climate Center, http://www.wrcc.dri.edu/summary/ipl.ca.html (Accessed June 22, 2010).

3.2 Regulatory Setting

Federal, state, and local agencies have set ambient air quality standards for certain air pollutants through statutory requirements and have established regulations and various plans and policies to maintain and improve air quality, as described below.

3.2.1 Pollutants of Concern

Criteria Pollutants

The "criteria" air pollutants of concern are ozone, carbon monoxide, particulate matter, oxides of nitrogen, sulfur dioxide, and lead. For these pollutants, both federal and state ambient air quality standards (as maximum concentration levels of pollutants) have been established to protect public health and welfare. Since the proposed Project has no significant sources of emissions of sulfur dioxide or lead, they are not discussed in this analysis. Presented below are descriptions of the criteria pollutants of concern and their known health effects.

Nitrogen Oxides (NO_x) serve as integral participants in the process of photochemical smog production. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO_2).[8] NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_x acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

Carbon Monoxide (CO) is a non-reactive pollutant produced by incomplete combustion of carbon substances (e.g., gasoline or diesel fuel). The primary adverse health effect associated with CO is the interference of normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.

Particulate Matter (PM) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes and mists. Two forms of fine particulate are now regulated. Respirable particles, or PM_{10}, include that portion of the particulate matter with an aerodynamic diameter of 10 micrometers (i.e., 10 millionths of a meter or 0.0004 inch) or less. Fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 micrometers (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind action on the arid landscape also contributes substantially to the local particulate loading. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems.

Reactive Organic Gases (ROG) are compounds comprised primarily of atoms of hydrogen and carbon. The major source of ROG is the internal combustion associated with motor vehicle usage. Other sources of ROG include the evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG,

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[8] Another form of NO_x, nitrous oxide (N_2O), is a greenhouse gas and is discussed below.

but rather by reactions of ROG to form secondary pollutants. ROG are also transformed into organic aerosols in the atmosphere, contributing to higher levels of fine particulate matter and lower visibility. The term "ROG" is used by the California Air Resources Board (CARB) for air quality analysis and is defined essentially the same as the federal term "volatile organic compound" (VOC).

Ozone (O_3) is a secondary pollutant produced through a series of photochemical reactions involving ROG and NO_x. O_3 creation requires ROG and NO_x to be available for approximately three hours in a stable atmosphere with strong sunlight. The health effects of O_3 include eye and respiratory irritation, reduction of resistance to lung infection and possible aggravation of pulmonary conditions in persons with lung disease. O_3 is also damaging to vegetation and untreated rubber.

Greenhouse Gases

Greenhouse gases (GHG) are defined under the California Global Warming Solutions Act of 2006 (AB 32) as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC)s, perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Associated with each GHG species is a "global warming potential" (GWP), which is defined as the ratio of degree of warming to the atmosphere that would result from the emission of one mass unit of a given GHG compared with one equivalent mass unit of CO_2 over a given period of time. By this definition, the GWP of CO_2 is always 1. The GWPs of methane and nitrous oxide are 21 and 310, respectively.[9] "Carbon dioxide equivalent" (CO_2e) emissions are calculated by weighting each GHG compound's emissions by its GWP and then summing the products.

3.2.2 Applicable Regulations

Federal Regulations

The Federal Clean Air Act (CAA), passed in 1970, established the national air pollution control program. The basic elements of the CAA are the National Ambient Air Quality Standards (NAAQS) for criteria air pollutants, hazardous air pollutants standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The NAAQS are the maximum allowable concentrations of criteria pollutants, over specified averaging periods, to protect human health. The CAA requires that the U.S. Environmental Protection Agency (USEPA) establish NAAQS and reassess, at least every five years, whether they are adequate to protect public health, based on current scientific evidence. The NAAQS are divided into primary and secondary standards; the former are set to protect human health within an adequate margin of safety, and the latter to protect environmental values, such as plant and animal life.

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[9] California Climate Action Registry. *General Reporting Protocol. Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1.* Los Angeles, California (January 2009), p. 91.

Data collected at permanent monitoring stations are used by the USEPA to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas are subject to additional restrictions, as required by the USEPA.

The CAA Amendments in 1990 substantially revised the planning provisions for those areas not currently meeting NAAQS. The Amendments identify specific emission reduction goals that require both a demonstration of reasonable further progress and attainment, and incorporate more stringent sanctions for failure to attain the NAAQS or to meet interim attainment milestones.

State Regulations

The State of California began to set California ambient air quality standards (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. There were no attainment deadlines for the CAAQS originally. However, the State Legislature passed the California Clean Air Act (California CAA) in 1988 to establish air quality goals, planning mechanisms, regulatory strategies, and standards of progress to promote their attainment. The CARB, which became part of the California Environmental Protection Agency (Cal EPA) in 1991, is responsible for ensuring implementation of California CAA, responding to the federal CAA, and for regulating emissions from motor vehicles and consumer products.

The California CAA requires attainment of CAAQS by the earliest practicable date. The state standards are generally more stringent than the corresponding federal standards. Attainment plans are required for air basins in violation of the State O_3, PM_{10}, CO, SO_2, or NO_2 standards. Responsibility for achieving state standards is placed on the CARB and local air pollution control districts. District plans for nonattainment areas must be designed to achieve a 5-percent annual reduction in emissions. Preparation of and adherence to attainment plans are the responsibility of the local air pollution districts or air quality management districts.

Table 1 (Ambient Air Quality Standards for Criteria Air Pollutants) lists the NAAQS and CAAQS for criteria pollutants.

3.2.3 Air Quality Plans

Air pollution control in the region is currently guided by two air quality plans. The first is designed to ensure that the County attains the NAAQS for ozone. When the ozone NAAQS of 0.080 parts per million was promulgated in 1997, Imperial County was classified as a "marginal" nonattainment area. The County failed to meet the June 15, 2007 deadline for attainment and was redesignated as a "moderate" nonattainment area. Moderate attainment areas were to meet the standard as expeditiously as practicable, but no later than June 15, 2010. To this end, the ICAPCD began developing the *2008 8-hr Ozone Air Quality Management Plan (AQMP)*. This plan sought to reduce emissions of the ozone precursors ROG and NO_x through a set of control measures.

Table 1 - Ambient Air Quality Standards for Criteria Air Pollutants

Pollutant	Averaging Time	California Standards[a]		Federal Standards [b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary [c,f]	Method[g]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m^3)		0.100 ppm (189 µg/m^3)	None	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (57 µg/m^3)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		—	—	—
Lead[h,i]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average [i]	—		0.15 µg/m^3		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer– visibility of 10 miles or more (0.07 – 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70%. Method: Beta Attenuation and Transmittance through Filter Tape.		**No Federal Standards**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[h]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: California Air Resources Board, "Ambient Air Quality Standards." http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. (February 16, 2010).

See footnotes on next page.

a. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter–-PM_{10}, $PM_{2.5}$, and visibility reduction particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. For NO_2, the 1-hour standard is attained when the 3-year average of the 98th percentile of the daily maximum 1-hour average does not exceed 0.100 ppm.

c. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

d. Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

e. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

f. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

g. Reference method as described by the USEPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by USEPA.

h. The CARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

i. National lead standard, rolling 3-month average: final rule signed October 15, 2008.

Meanwhile, after reviewing ambient air monitoring data for 2006-2008, the USEPA determined that the County had attained the 1997 8-hour standard for ozone.[10] As a result, several elements of the 2008 AQMP were no longer required, and will not be required unless the 8-hour standard is violated again. Work on the 2008 AQMP was abandoned.[11] However, the USEPA did not reclassify Imperial County as being in attainment because the County has not met other requirements for redesignation and has not submitted a maintenance plan.

The ICAPCD has prepared the *2009 8-Hour Ozone Modified Air Quality Management Plan*.[12] The Modified AQMP serves as a comprehensive planning document intended to provide guidance to the Air Pollution Control District, the County, and other local agencies on how to continue maintaining the 1997 8-hour ozone NAAQS.[13] The Modified AQMP includes the following:

- Development of a baseline (calendar year 2002) emissions inventory for ROG and NO_x, the main precursors of ozone.

- A review of currently adopted stationary source control measures, with estimates of their reductions in ROG and NO_x from the 2002 baseline emission inventory.

- A determination that the ICAPCD's rules for control of ROG and NO_x emissions meet the Clean Air Act's requirements for reasonably available control technology (RACT).

- A statement that the District's New Source Rule (Rule 207) fulfills the requirements of the Clean Air Act, including use of a 1:15:1 ratio for using emissions offsets to comply with new source emission limits.

- A list of transportation control measures (TCMs) adopted by the ICAPCD and implemented as mitigation measures under CEQA for residential, commercial, and industrial projects. (See **Section 5** of this report.)

- Adoption by reference various State of California-level emission reduction measures, which will be implemented by the California Air Resources Board. While the APCD cannot enforce these measures, it can take credit for emission reductions that result from them.

- Annual forecasts of emission from 2005 through 2023, taking into account local population and economic growth and implementation of adopted control measures.

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[10] U.S. Environmental Protection Agency. 2009. "Approval and Promulgation of Air Quality Implementation Plans; California; Determination of Attainment of the 1997 8-Hour Ozone Standard." *Federal Register* 74(231):63309-63310 (December 3).

[11] Personal communication from Monica Soucier, Imperial County Air Pollution Control District, El Centro, California to Michael Rogozen, UltraSystems Environmental Incorporated, Irvine, California (September 14, 2010).

[12] Imperial County Air Pollution Control District. 2010. *Final 2009 8-Hour Ozone Modified Air Quality Management Plan.* (July 13).

[13] Ibid., p. 3.

- A discussion of transportation conformity. The ICAPCD has estimated, and the USEPA has approved, the maximum level of transportation-related NO_x and VOC emissions allowable for compliance with the NAAQS for ozone. These are 17 and 7 tons per day, respectively.

The other plan is the *State Implementation Plan (SIP) for PM-10 in the Imperial Valley*,[14] which addresses attainment of the federal CAA standards. The plan focuses on the 24-hour standard for the Brawley/El Centro and Calexico areas. Although, at the time of the plan's adoption, insufficient data were available for demonstrating attainment, the plan includes several fugitive dust control measures, which have been adopted by the ICAPCD. Because the 1993 SIP is the only one that has been approved by USEPA, it continues in force. However, it should be noted that on August 11, 2009, the ICAPCD adopted the *2009 State Implementation Plan for Particulate Matter Less than 10 Microns in Aerodynamic Diameter*.[15,16] The plan demonstrates attainment of the federal 24-hour standard of 150 $\mu g/m^3$ provided that five exceedances between 2006 and 2008 are removed from consideration of the region's attainment status.[17] Three exceedances were due to entrainment of dust by unusually high winds; these may be excepted by the USEPA's "Exceptional Events Rule," which recognizes that certain naturally occurring, uncontrollable events such as high winds and wildfires, can result in exceedances of federal standards.[18] The other exceedances during 2006-2008 were, according to the ICAPCD's documentation, due to transport over the border from Mexicali, Mexico.

Region IX of the USEPA has expressed its reservations about the causes for the five exceedances, and recommended to the ICAPCD that it delay adoption of the 2009 SIP revision until it determines whether the claimed exceptions are valid.[19] At a May 29, 2010 hearing before the CARB, CARB staff reported that the USEPA had advised the Board on May 24, 2010 that it would not approve the SIP revision without further consideration.[20] CARB staff therefore advised the Board to "take no action" on the SIP revision. The Board voted unanimously to follow the Staff's recommendation. The SIP revision, which is currently based upon 2006-2008 data, will have to be reformulated on the basis of 2011-2013 data. The delay

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[14] *State Implementation Plan for PM-10 in the Imperial Valley. Volume I.* Prepared by E.H. Pechan & Associates, Inc., Rancho Cordova, California for the Imperial County Air Pollution Control District, El Centro, California (Adopted September 28, 1993).

[15] *2009 State Implementation Plan for Particulate Matter Less than 10 Microns in Aerodynamic Diameter.* Prepared by Radian Corporation, Los Angeles, California, for Imperial County Air Pollution Control District, El Centro, California (August 11, 2009).

[16] Imperial County Air Pollution Control District. 2009. "Imperial County Adopts its 2009 Particulate Matter Less than 10 Microns State Implementation Plan (PM_{10} SIP) Fact Sheet." (http://www.co.imperial.ca.us/AirPollution/Attainment%20Plans/FINAL%20PM10%20Fact%20Sheet%209-10-2009.pdf). Accessed June 6, 2010.

[17] California Air Resources Board. 2010. "Status Report on Imperial County Air Quality and Approval of the State Implementation Plan Revision for PM_{10}." (April 26.)

[18] U.S. Environmental Protection Agency. 2007. "Treatment of Data Influenced by Exceptional Events." *Federal Register* 72(55):13560-13581 (March 22).

[19] Jordan, Deborah. 2009. Letter from Director, Air Division, Region IX, U.S. Environmental Protection Agency, San Francisco, California, to Brad Poiriez, Air Pollution Control Officer, Imperial County Air Pollution Control District, El Centro, California (August 5).

[20] Testimony by California Air Resources Board Staff at May 29, 2010 meeting of California Air Resources Board in LOCATION; video recording at http://www.cal-span.org/cgi-bin/archive.php?owner=CARB&date=2010-05-27. Accessed June 6, 2010.

by the CARB in adoption of the SIP revision may result in penalties to the District, including substitution of a Federal Implementation Plan for the SIP and loss of funding for transportation projects. The CARB and the ICAPCD are attempting to work with the USEPA to avoid this outcome.[21]

3.2.4 Local Regulations

Air Quality

The ICAPCD is the local agency responsible for monitoring air quality, as well as planning, implementing and enforcing programs designed to attain and maintain NAAQS and CAAQS over the entire area of Imperial County. The ICAPCD has developed programs and rules and regulations that govern stationary source, area source, point source, and certain mobile source emissions.

Right-to-Farm Ordinance

In recognition of the role of agriculture in the county, Imperial County has adopted a right-to-farm ordinance.[22] A "right-to-farm" ordinance creates a legal presumption that ongoing, standard farming practices are not a nuisance to adjoining residences. It requires a disclosure to owners and purchasers of property near agricultural land operations, or areas zoned for agricultural purposes. The disclosure advises persons that discomfort and inconvenience from odors, fumes, dust, smoke, and chemicals resulting from conforming and accepted agricultural

3.3 Regional Air Quality

Table 2 (Federal and State Attainment Status for Imperial County) shows the area designation status of Imperial County for each criteria pollutant for both the NAAQS and the CAAQS. As discussed above, the USEPA has determined that the Imperial County moderate 8-hour ozone nonattainment area had attained the NAAQS for O_3. However, the USEPA is not redesignating Imperial County as an ozone maintenance area, because the area does not have an approved maintenance plan and does not meet other requirements for designation. (See **Section 3.2.3**.)

Table 2 - Federal and State Attainment Status for Imperial County

Pollutants	Federal Classification	State Classification
Ozone (O_3)	Non-Attainment (Moderate)	Non-Attainment
Particulate Matter (PM_{10})	Non-Attainment (Serious)	Non-Attainment
Fine Particulate Matter ($PM_{2.5}$)	Non-Attainment	Unclassified
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment

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[21] Ibid.

[22] County of Imperial Codified Ordinances, Division 2, Title 6: Right to Farm, §62950-62955.

Sources: U.S. Environmental Protection Agency, "California 8-Hour Ozone Nonattainment Areas in Blue Borders." Green Book. [www.epa.gov/air/oaqps/greenbook/ca8.html]. Updated January 6, 2010; U.S. Environmental Protection Agency, "Counties Designated Nonattainment for PM-10." Green Book. [www.epa.gov/air/oaqps/mappm10.pdf]. Accessed April 15, 2010; U.S. Environmental Protection Agency, "Particulate Matter (PM-2.5) 2006 Standard Nonattainment Areas as of January 6, 2010." Green Book. [www.epa.gov/air/oaqps/greenbook/rnc.html]; California Air Resources Board, "Area Designations Maps/State and National." [www.arb.ca.gov/design/adm/adm.htm]. March 25, 2010.

3.4 Local Air Quality

A network of ambient air monitoring stations is operated throughout Imperial County. The purpose of the monitoring stations is to measure ambient concentrations of criteria pollutants. The nearest ambient monitoring station to the project site (approximately 4.9 miles away) is the 9th Street Station[23] in El Centro, which measures O_3, NO_2, CO, PM_{10}, and $PM_{2.5}$, as well as other pollutants not the subject of this analysis. Ambient pollutant concentrations measured at this monitoring station in 2009-2011 are presented in **Table 3** (Existing Air Quality Data for the Project Area). During the three-year period, the following ambient air quality standards were exceeded at least once: 1-hour and 8-hour CAAQS for O_3, and 24-hour NAAQS for $PM_{2.5}$.

3.5 Sensitive Receptors

The nearest sensitive land use is the residential neighborhood on the east side of Neckel Road. The residence closest to the Project boundary is about 295 feet away. The only other sensitive receptor in the area is the Frank M. Wright Middle School, (885 North Imperial Avenue), which is about 2,200 feet south of the Project's southern boundary.

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[23] The address for the station is 150 South 9th Street, El Centro, California 92243.

Table 3
Ambient Criteria Pollutant Concentration Data for El Centro[m1]

Air Pollutant	Standard/Exceedance	150 S. 9th Street El Centro		
		2009	2010	2011
Carbon Monoxide (CO)	Year Coverage[b]	92%	93%	98%
	National Max. 1-hour Concentration (ppm)	2.5	2.5	NM[c]
	National Max. 8-hour Concentration (ppm)	3.20	5.61	9.01
	State Max. 8-hour Concentration (ppm)	3.20	5.61	9.01
	# Days>National 8-hour Std. of >9 ppm	0	0	0
	# Days>California 8-hour Std. of >9 ppm	0	0	0
Ozone (O_3)	Year Coverage[b]	98%	95%	98%
	State Max. 1-hour Concentration (ppm)	0.111	0.122	0.141
	National Max. 8-hour Concentration (ppm)	0..085	0.082	0.084
	State Max. 8-hour Concentration (ppm)	0.086	0.082	0.084
	# Days>National 1-hour Std. of >0.12 ppm	0.0	0.0	7
	# Days>California 1-hour Std. of >0.09 ppm	9	3	18
	# Days>National 8-hour Std. of >0.075 ppm	11	10	12
	# Days>California 8-hour Std. of >0.07 ppm	30	29	21
Nitrogen Dioxide (NO_2)	Year Coverage	99%	74%	76%
	# Days>California 1-hour Std. of >0.18 ppm	0.0	0.0	0.0
	State Annual Average (ppm)	0.008	0.004	0.009
Sulfur Dioxide (SO_2)	Year Coverage	NM	NM	NM
	State Max. 24-hour Concentration (ppm)	NM	NM	NM
	State Annual Average (ppm)	NM	NM	NM
	# Days>California 24-hour Std. of >0.04 ppm	NM	NM	NM
Respirable Particulate Matter (PM_{10})	Year Coverage	98%	88%	97%
	National Max. 24-hour Concentration ($\mu g/m^3$)	243.1	69.4	81.9
	State Max. 24-hour Concentration ($\mu g/m^3$)	233.7	70.2	80.3
	#Days>National 24-hour Std. of >150 $\mu g/m^3$	13.1	0.0	0.0
	#Days>California 24-hour Std. of>50 $\mu g/m^3$	104.6	ND	ND
	National Annual Average ($\mu g/m^3$)	49.9	32.9	32.6
	State Annual Average ($\mu g/m^3$)	47.9	ND	ND
Fine Particulate Matter ($PM_{2.5}$)	Year Coverage	98%	94%	99%
	National Max. 24-hour Concentration ($\mu g/m^3$)	37.7	19.9	54.4
	State Max. 24-hour Concentration ($\mu g/m^3$)	37.7	19.9	54.4
	#Days>National 24-hour Std. of >35 $\mu g/m^3$	3.1	0.0	6.2
	National Annual Average ($\mu g/m^3$)	8.0	6.6	7.5
	State Annual Average ($\mu g/m^3$)	8.0	6.6	7.5
Lead	Not monitored at El Centro			
Sulfates	Not monitored at El Centro			

Source: California Air Resources Board, Aerometric Data Analysis and Management (ADAM) online database (www.arb.ca.gov/adam/welcome.html) accessed June 2010; except for carbon monoxide, where source is U.S. Environmental Protection Agency, "Monitor Values Report – Criteria Pollutants" online database (www.epa.gov/air/data/monvals.html) accessed June 2010.

[b] Coverage is for the California 8-hour standard.

[c] NM = Not monitored at the station.

[d] ND = There were insufficient (or no) data available to determine the value.

Note: ppm = parts per million by volume; $\mu g/m^3$ = micrograms per cubic meter

4.0 AIR QUALITY IMPACTS ANALYSIS

This analysis was prepared in accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines, and with the ICAPCD *CEQA Air Quality Handbook*. Air quality impacts are typically divided into short-term and long-term impacts. Short-term impacts are associated with construction activities, such as site grading, excavation, and building construction of a proposed project. Long-term impacts are associated with the operation of a proposed project upon its completion.

4.1 CEQA Impact Review Criteria

In accordance with *State CEQA Guidelines* Appendix G, implementation of the proposed project would result in a potentially significant impact if it were to:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose the public (especially schools, day care centers, hospitals, retirement homes, convalescence facilities, and residences) to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

Where available, the significance criteria established by the applicable air quality management district (AQMD) or air pollution control district (APCD) may be relied upon to make the significance determinations. As will be discussed in the next section, the ICAPCD has developed a *CEQA Air Quality Handbook* to provide a protocol for air quality analyses that are prepared under the requirements of CEQA.

4.2 Imperial County APCD Thresholds of Significance

Under the ICAPCD guidelines, an air quality evaluation must address the following:

- Comparison of calculated project emissions with ICAPCD emission thresholds;
- Consistency with the most recent Clean Air Plan for Imperial County;
- Comparison of predicted ambient pollutant concentrations resulting from the project to state and federal health standards, when applicable; and
- Evaluation of special conditions that apply to certain projects.

Any development with a potential to emit criteria pollutants below significance levels defined by the ICAPCD is called a "Tier I project," and is considered by the ICAPCD to have potential adverse impacts on local air quality. The project proponent should implement a set of "standard" operational mitigation measures (enumerated by the ICAPCD) to reduce the air quality impact to an insignificant level. A "Tier II project" is one whose emissions exceed any of the thresholds. Its impact is significant and the project proponent should select and implement all feasible "discretionary" mitigation measures (also enumerated by the ICAPCD) in addition to the standard mitigation measures. The standard and discretionary mitigation measures for the Project's operation will be discussed in **Section 5.0**.

4.2.1 Construction Impacts

In general, projects whose *operational* emissions qualify them as Tier I do not need to quantify their construction emissions; instead they adopt the standard mitigation measures for construction (See **Section 5.0**). As will be discussed in **Section 4.2.2**, this is a Tier I project. However, for the purpose of preparing an initial study/mitigated negative declaration (IS/MND) under CEQA, construction emissions were quantified. The quantification also serves the purpose of determining which construction-related mitigation measures to prescribe. The ICAPCD's thresholds for significance are shown in **Table 4** (Thresholds of Significance for Construction Activities).

Table 4 – Thresholds of Significance for Construction Activities[24]

Pollutant	Threshold
PM_{10}	150 lbs/day
ROG	75 lbs/day
NO_x	100 lbs/day
CO	550 lbs/day

4.2.2 Operational Impacts

To evaluate long-term air quality impacts due to operation of a proposed project, the ICAPCD recommends the significance criteria shown in **Table 5** (Thresholds of Significance for Project Operations).

4.3 CO "Hotspots" Thresholds

Exhaust emissions from motor vehicles can potentially cause a direct, localized hotspot impact at or near proposed developments or sensitive receptors. The optimum condition for the occurrence of a CO hotspot would be cool and calm weather at a congested major roadway intersection with sensitive receptors nearby, and where vehicles are idling or moving at a stop-and-go pace.

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[24] Imperial County Air Pollution Control District. 2007. *CEQA Air Quality Handbook*. November, p. 19.

Table 5 - Thresholds of Significance for Project Operations

Pollutant	**Emissions (lb/day)**	
	Tier I	**Tier II**
Carbon Monoxide (CO)	< 550	≥ 550
Reactive Organic Gases (ROG)	< 55	≥ 55
Nitrogen Oxides (NO_X)	< 55	≥ 55
Sulfur Oxides (SO_X)	< 150	≥ 150
Particulate Matter (PM_{10})	< 150	≥ 150
Level of Significance	Less Than Significant	Significant Impact
Level of Analysis	Initial Study	Comprehensive Air Quality Report
Environmental Document	Negative Declaration	Mitigated Negative Declaration or Environmental Impact Report

The significance of localized project impacts depends on whether project-related emissions result in a violation of State and/or federal CO standards. A significant impact would occur if the CO hotspot analysis of vehicular intersection emissions exposes sensitive receptors to concentrations that are in excess of the following thresholds:

- 20 parts per million (ppm) for 1-hour average, and/or
- 9 ppm for 8-hour average.

The ICAPCD *CEQA Air Quality* Handbook does not specify criteria for significance when ambient CO levels already exceed a State or federal standard. For that case, we used the South Coast Air Quality Management District's specification that project impacts are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more.[25]

4.4 Methodology

Estimated air emissions from the Project's on-site and off-site Project activities were calculated using the CalEEMod™ emissions model[26] and by other methods described below. CalEEMod is a planning tool for estimating emissions related to land use projects. The model incorporates EMFAC2007 emission factors to estimate on-road vehicle emissions; and emission factors and assumptions from the CARB's OFFROAD2007 model to estimate off-road construction equipment emissions. Model-predicted project emissions are compared with applicable thresholds to assess regional air quality impacts.

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[25] South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook.* April.

[26] *California Emissions Estimator Model (CalEEMod), Users Guide, Version 2011.1.* Prepared by ENVIRON International Corporation, Emeryville, California, for the South Coast Air Quality Management District, Diamond Bar, California (February 2011).

4.5 Air Quality Impacts

4.5.1 Short-Term Impacts

Project construction activities will generate short-term air quality impacts. Construction emissions can be distinguished as either on-site or off-site. On-site air pollutant emissions would principally consist of exhaust emissions from off-road heavy-duty construction equipment, as well as fugitive particulate matter from earthworking and material handling operations. Off-site emissions would result from workers commuting to and from the job site, as well as from trucks hauling construction debris for disposal.

The proposed project would be developed in several phases. Construction of the project would include clearing and grubbing, initial grading and preparation of the entire project site, and building of basic infrastructure to support subsequent development. The hotel and other structures would be built in phases, and would be followed by commercial and school facilities. Since detailed design information was not available at the time this document was prepared, construction-related emission estimates were based on the construction scenario information provided by the project applicant. Estimates of the types and numbers of pieces of equipment anticipated in each phase of construction and development were based on equipment requirements of similar construction projects. Pollutant emissions would vary from day to day depending on the intensity and type of construction activity.

Project construction emissions were estimated using the construction module CalEEMod.[27] For the purpose of this analysis, it was estimated that the construction of the proposed project would begin in January 2011 and take 24 months. A maximum of four and eight pieces of construction equipment were assumed to be operating simultaneously in a given day in the site grading and building construction phases, respectively. In addition, eight additional pieces of paving equipment were assumed when paving and building construction would occur on the same schedule. The types and numbers of pieces of equipment anticipated in each phase of construction and development were estimated based on equipment requirements of similar construction projects. Construction-related emission estimates were based on the default construction scenario information in CalEEMod. The VOC content limits for coatings, as specified in ICAPCD Rule 424, were used to calculate VOC emissions from architectural coating operations. The estimated emissions are presented in **Table 6** (Maximum Daily Construction Emissions). Modeling assumptions and output files are provided in **Appendix A**.

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[27] *California Emissions Estimator Model (CalEEMod), Users Guide, Version 2011.1 Appendix D Default Tables*. Prepared by ENVIRON International Corporation, Emeryville, California, for the South Coast Air Quality Management District, Diamond Bar, California (February 2011).

Table 6 - Maximum Daily Construction Emissions

Construction Activity	Maximum Emissions (lbs/day)			
	ROG	NO_x	CO	PM_{10}
Maximum Cumulative Emissions	15.99	88.68	64.71	46.77
Construction Activities	Paving, Building, Coating	Building, Fine Grading	Building, Fine Grading	Building, Fine Grading
ICAPCD Significance Thresholds	*75*	*100*	*550*	*150*
Significant (Yes or No)	No	No	No	No

Source: Calculated by UltraSystems with CalEEMod (Version 2011.1).

Commercial projects whose emissions are below the ICAPCD's significance thresholds must comply with the latest rules adopted for the control of fugitive dust. In addition, the ICAPCD requires the use of "standard" mitigation measures for construction equipment and fugitive dust, as listed in the *CEQA Air Quality Handbook*.[28] The ICAPCD standard mitigation measures for the project's construction are presented in **Section 5.1**.

Please note that implementation of required mitigation measures does not exempt the project from compliance with ICAPCD rules and regulations. The project proponent will have to comply with all the requirements of the ICAPCD's rules and regulations, specifically those of Regulation VIII. Regulation VIII applies to any activity or man-made condition capable of generating fugitive dust, and requires the use of reasonably available control measures to suppress fugitive dust emissions.

4.5.2 Long-Term Impacts

The project would generate long-term air quality impacts associated with its operation at project occupancy. The primary source of operational emissions would be vehicle exhaust emissions generated from project-induced vehicle trips, known as "mobile source emissions." Other emissions, identified as "area source emissions," would be generated from energy consumption for water and space heating for the proposed hotel, two restaurants, and office building; structural maintenance and landscaping activities; and use of consumer products.

Operational emissions from the proposed project were estimated using the operational (vehicle) and area emissions modules of CalEEMod. The vehicle trip generation rates of the proposed land uses were obtained from the project traffic study, including adjustments for internal and passby trips.[29] In addition, default values generated by CalEEMod, including the expected vehicle fleet mix, and vehicle traveling speed and distance assumptions, were used in the model run. CalEEMod's default values for temperature for Imperial County were used.

In accordance with the project traffic study, it is assumed that only Phase I of the project would be constructed under the near term condition in 2011-2012. The model-predicted area source and mobile source emissions for Phase I are shown in **Table 7** (Daily Project Operational

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[28] Imperial County Air Pollution Control District. 2006. *CEQA Air Quality Handbook*. November. Section 7.1.

[29] Lau, S. 2010. *Holiday Inn Hotel Traffic Impact Study. Draft Report*. Prepared by ADVANTEC Consulting Engineers, Diamond Bar, California for City of Imperial, California (September 2).

Emissions in 2015). Note that the estimated emissions do not include emission reductions per incorporation of ICAPCD required operational mitigation measures. Detailed output sheets are provided in **Appendix A**.

Table 7 - Daily Project Operational Emissions in Phase I (2012)

Emissions Source	**Pollutant (lbs/day)**			
	ROG	**NO_X**	**CO**	**PM_{10}**
Area Source Emissions	1.19	1.31	7.21	0.02
Mobile Source Emissions	8.68	29.39	60.88	7.99
Total Operational Emissions	**9.87**	**30.70**	**68.09**	**8.01**[m2]
Thresholds for Tier II	*55*	*55*	*550*	*150*
Tier	**I**	**I**	**I**	**I**

Source: UltraSystems.

As indicated in **Table 7**, the long-term project operational emissions of ROG, NO_x, CO and PM_{10} would be less than significant. The ICAPCD therefore requires that "standard" mitigation measures for commercial facilities be implemented. These are listed in **Section 5.2** of this document.

4.5.3 Sensitive Receptors

Sensitive receptors are persons who are more susceptible to air pollution than the general population, such as children, athletes, the elderly, and the chronically ill. Examples of land uses where substantial numbers of sensitive receptors are often found are schools, daycare centers, parks, recreational areas, medical facilities, nursing homes, and convalescent care facilities. Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to pollutants. The sensitive land uses in the project vicinity are residences on the east side of State Route 86. The nearest sensitive receptor is a home about 295 feet away. The only other sensitive receptor in the area is the Frank M. Wright Middle School, (885 North Imperial Avenue), which is about 2,200 feet south of the Project's southern boundary.

Short-Term Impacts

Construction of the proposed project would generate short-term and intermittent emissions. With the implementation of required standard construction mitigation measures (See **Section 5.1)** specified in the *CEQA Air Quality Handbook*, the short-term impacts would be considered less than significant. Although sensitive receptors would be exposed to diesel exhaust, which has been associated with lung cancer,[30] the duration of exposure would not be sufficient to result in a significant cancer risk. Carcinogenic health risk assessments are based upon an assumption of 70 years continuous exposure, while the exposure in the present case would be intermittent over a maximum of about ten years. Therefore, no cancer health risk assessment was necessary. Acute noncancer risk assessments are based upon one-hour maximum

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[30] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment. 1998. *Part B: Health Risk Assessment for Diesel Exhaust*. May.

exposures, but acute reference exposure levels (RELs) for diesel exhaust and diesel particulate matter have not been established by the Office of Environmental Health Hazard Assessment.[31]

Long-Term Impacts

Operation of the proposed project would not introduce significant sources of stationary source emissions. (See **Table 7**). Area source emissions generated on-site by to operation and maintenance of the proposed land uses would be minimal, and would not expose adjacent sensitive receptors to substantial pollutant concentrations.

Future hotel guests and restaurant patrons visiting the proposed project site, and workers in the proposed office buildings, would be exposed to toxic air contaminants (TACs), including diesel particulate matter (DPM) and some pesticides, from surrounding agricultural operations. Exposure levels and consequent health risks could not be estimated from available information. However, the area is rapidly converting from agricultural use to other uses, and the long-term exposures required for carcinogenic effects are unlikely to occur.

Operation of the proposed project would increase local vehicle traffic, which may contribute to off-site air quality impacts. The traffic increases in nearby intersections may contribute to traffic congestion, which may create “pockets” of CO called hotspots. These pockets have the potential to exceed the State 1-hour standard of 20 ppm and/or the 8-hour standard of 9.0 ppm, thus affecting sensitive receptors that are close to these roadways or intersections. CO hotspots typically are found at busy intersections, but can also occur along congested major arterials and freeways. They occur mostly in the early morning hours when winds are stagnant and ambient CO concentrations are elevated. In accordance with the California Department of Transportation (Caltrans) CO Protocol,[32] CO hotspots are evaluated when a project degrades the level of service (LOS) at a nearby signalized intersection to “E” or worse. Typically, hotspots analyses are not performed for unsignalized intersections, which have lower traffic volumes than those with signals. This is particularly the case when a hotspots analysis shows no impacts for the most congested, signalized intersections.

According to the project traffic study,[33] the only signalized intersections in the study area are State Route 86/15th Street and the intersection of Neckel Road with the proposed “A Street.” The State Route 86/15th Street intersection is presently at LOS A and will remain so after Phase I of the proposed Project is built. The Neckel Road/“A Street” intersection will begin at LOS A and will continue so until after Phase II is built; it will not degrade to LOS E or worse.

Finally, the intersection of State Route 86 and Neckel Road, which is presently *unsignalized*, would degrade to LOS F during both the AM and PM peak hours at Project buildout. The traffic study proposes a mitigation measure consisting of installing signals at the intersection. After mitigation, the LOS at Project buildout would be A.

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[31] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, “All Acute Reference Exposure Levels developed by OEHHA as of May 2000. (www.oehha.ca.gov/air/acute_rels/allAcRELs.html).

[32] California Department of Transportation. 1997. *Transportation Project-Level Carbon Monoxide Protocol*.

[33] Lau, S. 2010. *Holiday Inn Hotel Traffic Impact Study. Draft Report*. Prepared by ADVANTEC Consulting Engineers, Diamond Bar, California for City of Imperial, California (September 2).

Given the acceptable level of service at the current and proposed signalized intersections, a quantitative CO hotspots analysis is not necessary. Localized CO concentrations will be less than significant.

4.5.4 Objectionable Odors

Construction activities for the proposed project would generate airborne odors associated with the operation of construction vehicles (i.e., diesel exhaust), asphalt paving operations, and the application of paints and coatings. These emissions would occur during daytime hours only, and would be isolated to the immediate vicinity of the construction site and activity. Therefore, they would not affect a substantial number of people. When project construction is completed, odors from the proposed uses of the proposed project would not significantly differ from odors emanating from typical hotels, restaurants, or office buildings.

Although the general area of the proposed project is developing rapidly, on-site residents would be exposed for at least some time to odors from neighboring agricultural operations. Finally, no wastewater treatment plants or other industrial facilities known to cause odors are within 1,000 feet of the project site.

4.5.5 Conformity with Air Quality Management Plan

According to the ICAPCD *CEQA Air Quality Handbook*, a Tier I project will not be required to develop a comprehensive air quality analysis report.[34] As a comprehensive air quality analysis report is to include a demonstration of compliance with the most recent ozone air quality attainment plan (AQAP) and PM_{10} state implementation plan (SIP),[35] a consistency review is not required for the proposed Project. However, as is discussed below, the proposed Project will not conflict with currently adopted air quality management plans.

1991 Air Quality Attainment Plan

As discussed in **Section 3.2.3**, recent changes to the ozone AQAP have not been adopted. The *1991 Air Quality Attainment Plan* is still in force. The proposed project is consistent with several provisions of the 1991 Plan:

- One of the 1991 Plan's policies is that "urban growth should occur within the urban reserve lines of cities…" The proposed project is within the City of Imperial, and would not be a case of "leapfrog development."

- The Plan also encourages mixed land use to reduce the requirement for automobile trips. The proposed project contains a hotel, restaurants, and office buildings. Workers in the office buildings can walk to lunch at the hotel or the restaurants.

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[34] Imperial County Air Pollution Control District. 2006. *CEQA Air Quality Handbook*. November, p. 9.

[35] Ibid., p. 13.

State Implementation Plan for PM-10 in the Imperial Valley

By complying with Regulation VIII and the mitigation measures for construction emissions, the project will be consistent with the PM-10 emission control strategies prescribed by this plan.

4.5.6 Cumulative Impacts

The Project will begin operations in 2012. No other developments are planned to come on line near the Project. Given this, the traffic study assumed a background growth factor for traffic in the area. As was shown on **Section 4.5.2**, regional air pollutant emissions from Project operations will be less than significant. Therefore, cumulative impacts will also be less than significant.

5.0 MITIGATION MEASURES

Required mitigation measures for the project's construction and operation, as specified by the ICAPCD's *CEQA Air Quality Handbook,* are listed below.

5.1 Construction Phase

In accordance with the *CEQA Air Quality Handbook*, the short-term construction impacts would be less than significant upon implementation of the following mitigation measures.

Standard Mitigation Measures for Construction Combustion Equipment:

- Use of alternative-fueled or catalyst-equipped diesel construction equipment, including all off-road and portable diesel-powered equipment.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.
- Limit, to the extent feasible, the hours of operation of heavy-duty equipment and/or the amount of equipment in use.
- Replace fossil-fueled equipment with electrically-driven equivalents (proved that they are not run via portable generator set).

Standard Mitigation Measures for Fugitive PM_{10} Control

- All disturbed areas, including bulk material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover.
- All on-site and off-site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.

- All unpaved traffic areas one acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emission shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
- Transported bulk materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at the delivery site after removal of bulk material.
- All track-out or carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.
- Bulk material shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.

Discretionary Mitigation Measures for Fugitive PM_{10} Control

The following measures can be used at the City of Imperial's discretion, but are not required by the ICAPCD.

- Water exposed soil with adequate frequency to keep it moist.
- Plant vegetative ground cover in disturbed areas as soon as possible and where feasible.
- Cover or apply water or chemical suppressants to form and maintain a crust on inactive storage piles.
- All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- Install wheel washers, rumble gates, provide a gravel pad, or pave the area where vehicles enter and exit unpaved roads onto streets; or wash off trucks and equipment leaving the site.

5.2 Operational Phase

The ICAPCD requires implementation of all the standard mitigation measures for a project's operation in order to reduce the air quality impact to an insignificant level.[36] These are:

- Provide on-site bicycle lockers and or/racks for hotel, restaurant, and office building employees.
- Provide on-site eating, refrigeration and food vending facilities to reduce lunchtime trips.

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[36] Imperial County Air Pollution Control District. 2007. *CEQA Air Quality Handbook*. November, p. 10.

- Provide shower and locker facilities to encourage employees to bike and/or walk to work.
- Comply with Title 24 requirements for reducing facility energy use.

APPENDIX B

Cultural Resources Survey

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Results of Cultural Resources Survey for the Alliance Regional Center, City of Imperial, Imperial County

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NATIONAL ARCHAEOLOGICAL DATA BASE INFORMATION

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Submitted to: City of Imperial

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USGS Quadrangle Map: 7.5-Minute El Centro Quadrangle

Keywords: City of Imperial, Imperial Irrigation District, Dahlia Drain, 5919-HJP-1.

Abstract

This report presents the results of a cultural resource survey for the 25-acre Alliance Regional Center property in the city of Imperial, Imperial County. The purpose of the survey was to identify any cultural resources on the project property and determine if they would be impacted by project development.

No cultural resources are recorded on the project property at the South Coastal Information Center. A historic cultural resource consisting of a segment of the Dahlia Drain was identified during the survey. The Dahlia Drain runs north-south along the eastern edge of the project and was constructed between 1940 and 1959. The Dahlia Drain is part of the Imperial Irrigation District (IID) network of canals and drains that bring water to the farms and cities of the Imperial Valley. A Department of Parks and Recreation Primary Record form was filled out for the canal segment, temporarily designated 5919-HJP-1, and submitted to the South Coastal Information Center. The completion and submittal of the site form is adequate mitigation to reduce any potential impacts from development of the property to below the level of significant impacts.

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1.0 Management Summary

A cultural resources survey was conducted on the 25-acre Alliance Center property site to determine the presence of cultural resources and determine if they would be impacted by the project development. The cultural resources survey included a record search of the files at the South Coastal Information Center and an on-foot survey of the property.

The 25-acre property is in the city of Imperial, on the northwest corner of the intersection of Neckel Road and State Route 86. The current project consists of the development of approximately eight acres in the southeast corner of the 25-acre property, adjacent to the intersection of Neckel Road and State Route 86. The remainder of the property is slated for development in the future.

The record search at the Southeast Information Center found no previously recorded prehistoric or historic sites on the property. The closest recorded site is CA-IMP-8166, the Southern Pacific Railway (Imperial and Gulf Branch), located approximately 1,900 feet east of the project.

A letter was sent to the Native American Heritage Commission (NAHC) in Sacramento on October 29, 2010, requesting a record search of their Sacred Lands Files. Their response on November 2, 2010 stated they had no record of the presence of Native American cultural resources in the immediate project area. A list of 12 Native American contacts was attached to the NAHC letter and contact letters will be sent to each.

A field survey was conducted on November 1, 2010, by RECON Archaeologist Harry J. Price. The entire property is disturbed, having been farmed in the past. No prehistoric cultural resources were found during the survey. A segment of the Imperial Irrigation District canal system, consisting of a portion of the Dahlia Drain, runs along the eastern edge of the property. The drain segment consists of an open dirt trench approximately 20 feet wide and 12 feet deep. A dirt service road runs along the western edge of the drain. The drain and road are not considered a significant cultural resource. A California Department of Parks and Recreation Primary Record form was filled out and submitted to the South Coastal Information Center documenting the drain segment. A house dating from the latter half of the 20th century is located next to Neckel Road. It is not considered a significant cultural resource.

2.0 Introduction

The Alliance Regional Center project currently proposes the development of approximately eight acres in the southeast corner of the 25-acre property, adjacent to the intersection of Neckel Road and State Route 86. The remainder of the property is slated for development in the future. Plans for the eight-acre area include a 108 room hotel, 10,000 square feet of retail, a Starbucks, fast food restaurants, a restaurant, and two office buildings.

3.0 Project Setting

3.1 Physical Setting

The proposed project is located on the northwest corner of the intersection of Neckel Road and State Route 86. The assessor's parcel numbers (APN) are APN 043-020-023, APN 043-020-065, and APN 043-020-066. Figures 1, 2, and 3 show the regional location of the project and the project vicinity. The site is in the west ¼ of Section 165, Township 15 South, Range 14 East, and the eastern ¼ of Section 135, Township 15 South, Range 13 East, on the U.S. Geological Survey (USGS) 7.5-minute series, El Centro, California Quadrangle.

To the north and west of the property are agricultural fields with a few scattered single-family residences associated with farms. To the south is a moderately dense residential area, and downtown Imperial is about ½ mile south of the property. There are recent residential developments to the northeast and southeast, and the lot directly to the east has been graded for development, but only a few houses have been built. Dahlia Drain runs along the eastern edge of the property, and the Date Canal runs along the southern edge. Dalia Drain is an open ditch, and Date Canal is underground.

The vegetation on the project property consisted of a combination of native and non-native plants. The most common native plant on-site is quailbush (*Atriplex lentiformis*), with allscale (*Atriplex polycarpus*) and four-wing saltbush (*Atriplex canescens*) also present. Dominant non-native plants include foxtail chess (*Bromus madritensis* ssp. *rubens*) and Canary grass (*Plahis minor*) (UltraSystems Environmental, Inc. 2010).

The project property is basically flat, with a barely perceptible drop to the north. It is currently fallow agricultural fields, with a single family residence in the south-central edge of the property (Photographs 1–4). Some recent brushing and scraping has taken place on the southeastern 1/3 of the property. Elevation is within a few feet of 935 feet above mean sea level (AMSL) over the entire property.

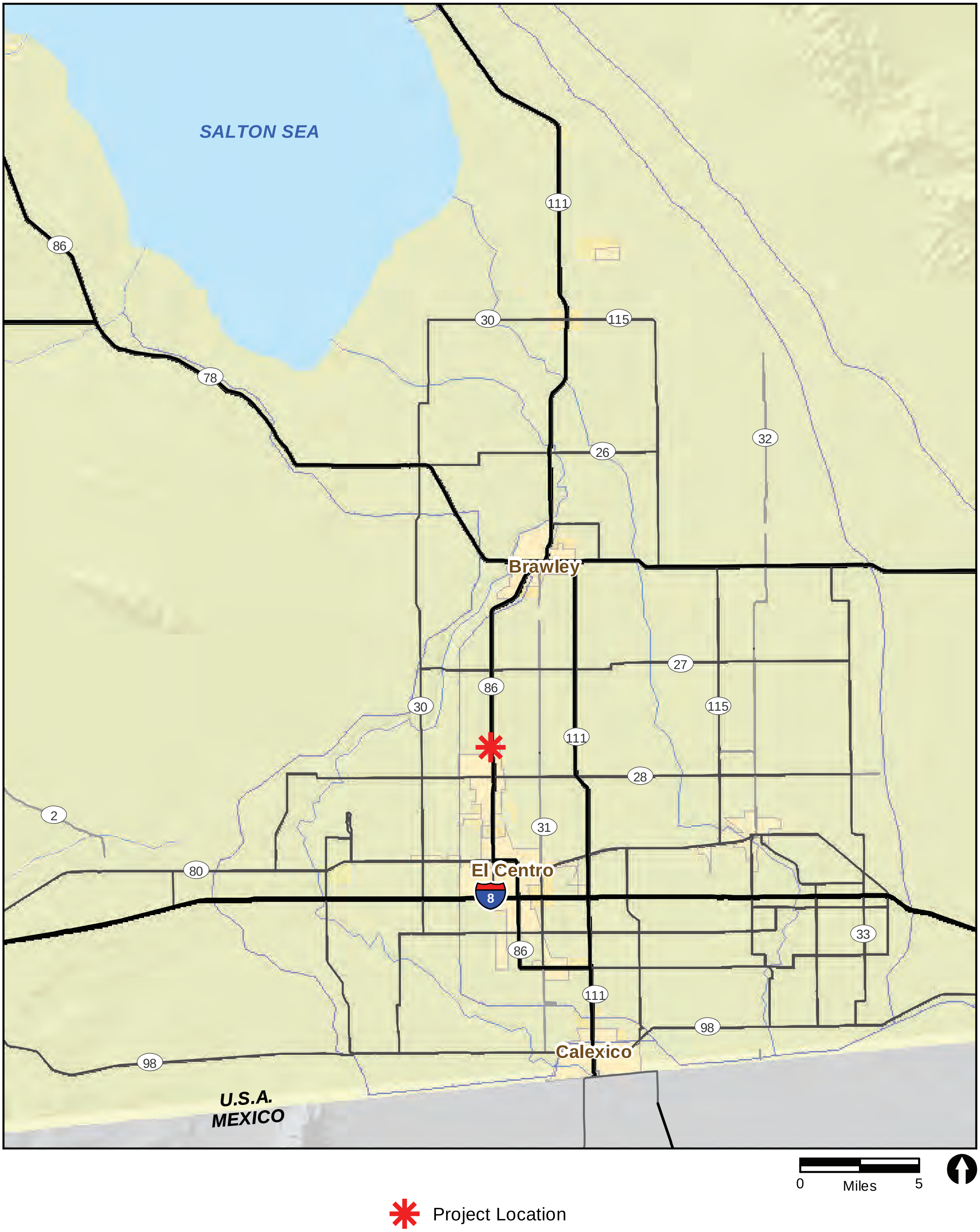

FIGURE 1

Regional Location

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Map Source: USGS 7.5 minute topographic map series, EL CENTRO & BRAWLEY quadrangles, T15S R13E & T15S R14E

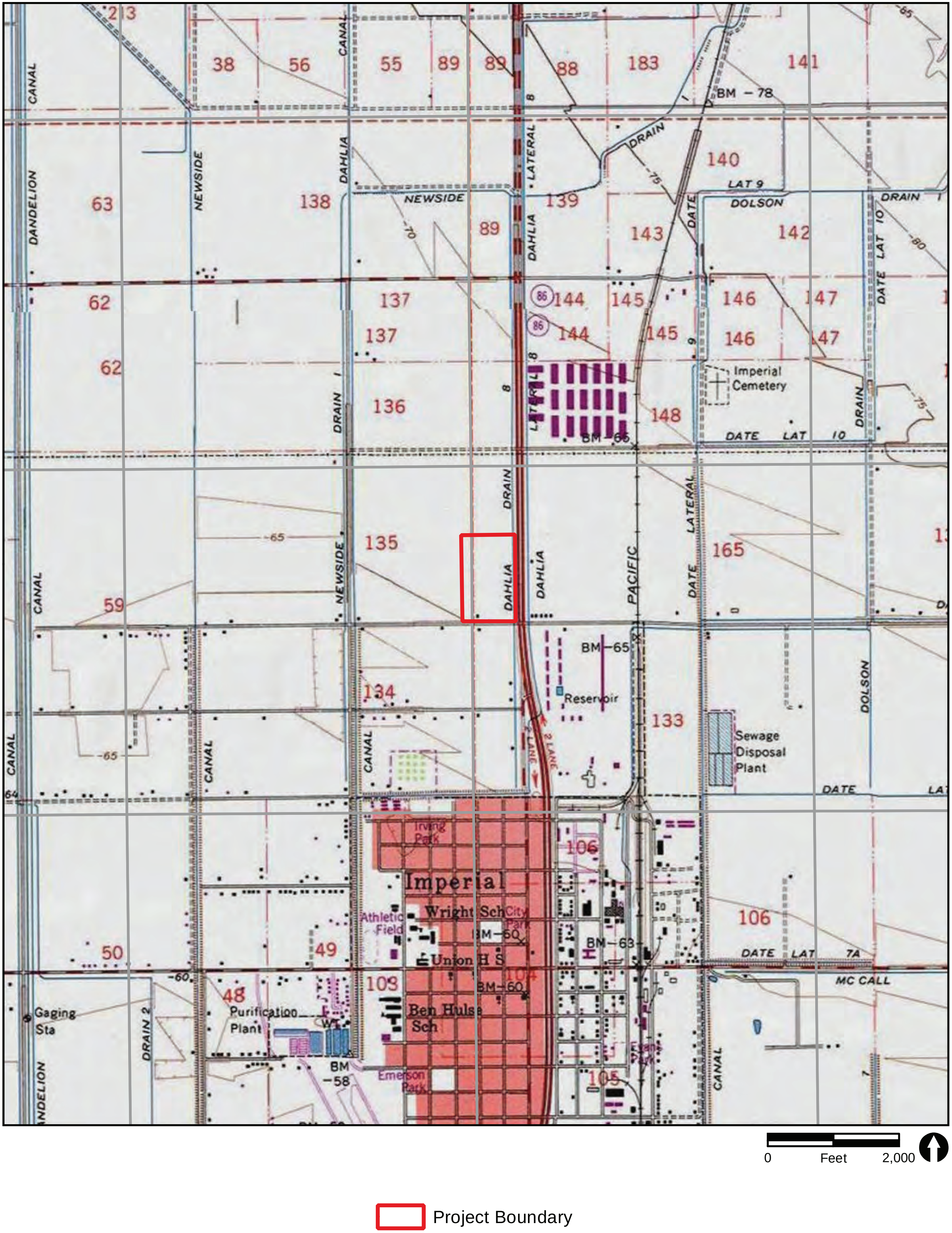

FIGURE 2

Project Location on USGS Map

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Image Source: USDA FSA NAIP (flown May 2009)

🟥 Project Boundary

FIGURE 3

Aerial Photograph of Project Location

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PHOTOGRAPH 1
Looking Southwest from the Northeast Corner of the Property

PHOTOGRAPH 2
Looking Southeast from the Northwest Corner of the Property

PHOTOGRAPH 3
Looking South From the Approximate Center of the Property

PHOTOGRAPH 4
Looking West from the Approximate Center of the Property

3.2 Cultural Setting

3.2.1 Early Man

A very early time of human occupation is posited for the Greater Southwest. This time period is represented by the Malpais Complex. The term Malpais was first coined by Malcolm Rogers to refer to very heavily patinated and weathered artifacts that he reasoned were quite old. Rogers later dropped the term and reclassified these materials as San Dieguito I (Rogers 1939). The term was later resurrected by Julian Hayden to refer to assemblages of very heavily varnished choppers, scrapers, and other core-based tools typically found on old desert pavement areas. Malpais materials are posited to predate the San Dieguito materials (e.g., Begole 1981; Childers 1980; Hayden 1976). Other researchers are quite skeptical of this posited time period (e.g., Schaefer 1994).

3.2.2 Paleoamerican Period

The Paleoamerican Period is thought to date from around 12,000 years before the present (B.P.) to 7,500 B.P., but is poorly documented in southern California. The assemblage and site patterning suggests highly mobile groups with a focus on big game hunting. The earliest part of the Paleoamerican Period is represented by the Fluted Point Tradition. In the far west, the Fluted Point Tradition contains many of the artifact types found in the assemblage of the San Dieguito/Lake Mojave Complex, namely flaked stone crescents, gravers, perforators, scrapers, and choppers (Moratto 1984:93).

The San Dieguito-Lake Mojave Complex is thought to have existed during a time of greater effective moisture than present in southeastern California (Warren and Crabtree 1986). The assemblage consists of heavy percussion, core- and flake-based tools: domed and keeled choppers, planes, and scrapers. One also finds light-percussion flaked spokeshaves, flaked-stone crescentics, leaf-shaped projectile points, and the distinctive Lake Mojave and Silver Lake stemmed projectile points. Fluted points are also occasionally found on Lake Mojave-San Dieguito surface sites. The assemblage suggests subsistence was focused on big game, while the settlement system consisted of relatively high residential mobility (Moratto 1984; Warren and Crabtree 1986:184).

3.2.3 Archaic Period

The Archaic Period is characterized by two archaeological complexes. The earliest is the Pinto Complex (7000 to 4000 B.P.). This was defined by Campbell and Campbell (1935) in Pinto Basin, north of Joshua Tree National Monument. The Amargosa or Gypsum Complex is found in the late Archaic (4000 to 1500 B.P.).

Beginning with the Pinto Complex, there is an apparent shift to a more generalized economy and a gradually increased emphasis on the exploitation of plant resources. Metates are reasonably abundant for the first time in the cultural sequence. The ground stone artifacts associated with this complex are typically thin slabs with smooth, nearly flat, highly polished surfaces. However, at the Stahl Site near Little Lake in eastern California, basin metates are noted (Warren and Crabtree 1986:187). Projectile points are still relatively abundant in the Pinto Complex, suggesting a continued dependence on big game hunting. The mixed core-based tool assemblage of the Pinto Complex may indicate a range of adaptations to a more diversified set of plant and animal resources brought about by a generalized desiccating trend in the west, occasionally punctuated by more mesic times.

The following Gypsum Complex is characterized by the presence of fine, pressure-flaked Elko and Humboldt series and Gypsum-type projectile points. The assemblage also contains leaf-shaped points; rectangular-based knives; flake scrapers; T-shaped drills; and occasional large scraper-planes, choppers, and hammerstones. Manos and basin metates become relatively common and the mortar and pestle were introduced late in the complex (Warren 1984:416). The fluorescence of tool types and the refinement of milling equipment suggest a more generalized and effective adaptation to desert conditions in the Greater Southwest. From the Grand Canyon area, southern Nevada, and the California deserts, one finds pictographs of mountain sheep and rabbits and split-twig figurines suggesting a widespread hunting ritual complex from these times (Warren and Crabtree 1986:187-189).

3.2.4 Late Prehistoric Period

This period, the local manifestations of which are often called the Patayan Pattern or Patayan Complex (1500 to 450 B.P.), is characterized by dramatic cultural change and a dramatically expanded population in the Salton Trough. Paddle and anvil pottery was introduced, probably from Mexico by way of the Hohokam culture of the middle Gila River area (Schroeder 1975, 1979; Rogers 1945). A subsistence shift from hunting and gathering of desert and river resources (Patayan I) to floodplain horticulture (Patayan II) took place at this time along the Colorado River and perhaps along the Alamo River and New River. During this period, the bow and arrow were also introduced (at approximately A.D. 700). Burial practices also shifted from inhumations to cremations. Numerous trails which appear to date to this period throughout the Colorado Desert suggest the growing importance of long and short distance travel for trading expeditions, religious activities, visiting, and warfare. Other culture traits generally associated with the Patayan Complex include increasingly elaborate kinship systems, rock art, including ground figures, and expanded trading networks (Davis 1961; McGuire 1982). Cottonwood Triangular series projectile points and Desert Side-notched Series projectile points, signifying the advent of the bow and arrow, and Lower Colorado Buffware pottery appear at approximately the same time, about A.D. 700 in the Colorado Desert (Waters 1982). Cottonwood Series points may predate the Desert Side-notched Series and the advent of pottery (Warren 1984:423). Tizon Brownware appears somewhat later at approximately A.D. 1000 in the mountains and foothills west of the Salton Basin.

The settlement system of the early Patayan (Patayan I ca. A.D. 700-1000) on the eastern Colorado Desert is characterized by small mobile groups living in dispersed seasonal settlements along the Colorado River. The Patayan II (ca. A.D. 1000-1500) economic system along the Colorado River was based on floodplain horticulture (Baksh 1994:18; Forde 1931:112; Kroeber 1925:736). Based on ethnographic data, it is inferred that gathering wild plant resources still contributed more to the native diet than cultigens among these horticulturalists (Castetter and Bell 1951:238). Domesticated plants included maize (mostly a white variety for making flour), tepari beans, squash, pumpkin, and gourds. Some grasses were also planted (Castetter and Bell 1951, Forde 1931:113-114).

The dietary staple throughout the Late Prehistoric Period was probably the same as for the Ethnographic Period: mesquite (both honey mesquite and screwbean mesquite). Palo verde, Palo fierro (ironwood), and grasses were also important to the native people (Bee 1983:86; Castetter and Bell 1951, Forde 1931). These various plants also constituted the primary foods for the hunting and gathering people who lived in or visited the Salton Basin away from the Colorado River.

During the Patayan I and II a very large freshwater lake, Lake Cahuilla, filled the Salton Basin from time to time. What Lake Cahuilla meant in terms of human population movements, economic adaptations, and settlement systems is still a matter of debate. There are two basic positions. Wilke (1978) developed his model based primarily on coprolite evidence from the northern shoreline of Lake Cahuilla. This dietary evidence suggested a year-round occupation based on exploiting marsh plants, fish, waterfowl, and other lacustrine resources. He argued that the Lake Cahuilla shoreline was relatively stable with rich freshwater marsh environments. He argued that this led to relatively large, permanent human populations, whose economic focus was on lacustrine resources. Weide developed a contrasting model based on a comparison of evaporation rates and the fluctuations in the flow of the Colorado River (Weide 1976). He suggested that the shoreline must have varied dramatically, and this would have prevented the development of productive freshwater marsh environments. He believes that the lake was rarely or never stable enough to develop rich lacustrine resources necessary to support permanent populations or sedentary village life.

4.0 Archival Research

A record search was conducted at the South Coastal Information Center (SCIC) to determine the extent of previous archaeological work in the project area and is included as Confidential Attachment 1. The boundary of the record search was a one-mile radius around the project property. No previously recorded prehistoric or historic sites are recorded on the project property. The closest recorded site is CA-IMP-8166, the Southern Pacific Railway (Imperial and Gulf Branch), located approximately 1,900 feet east of the project. The other trinomial site within the record search boundary is CA-IMP-5979, the Old Imperial Cemetery. It is located approximately 3,500 feet northeast of the project. The site form, filled out in 1984, states that the cemetery site had been brushed, which had removed all the wooden grave markers. The cover letter and previously recorded resources maps are included as Confidential Attachment 1.

A letter was sent to the Native American Heritage Commission (NAHC) in Sacramento on October 29, 2010, requesting a record search of their Sacred Lands Files. A reply was received on November 2, 2010. The NAHC files did not indicate the presence of Native American cultural resources in the immediate project area. The letter is included as Attachment 1. Letters will be sent to the eight groups listed on the contact sheet informing them of the project.

5.0 Methods

RECON archaeologist Harry J. Price conducted the cultural resources survey on November 1, 2010. The property was surveyed in a series of parallel transects. Transects were 12-15 meters apart. This spacing was considered adequate because of ground visibility and the disturbed nature of the property. Ground visibility varied considerably over the property. The southeastern 1/3 of the property had been scraped of vegetation, and a small amount of grading had taken place. Ground visibility in this area was 100 percent (Photograph 5). Ground visibility in the southwestern 1/3 of the property was mostly 90 percent, with little ground cover in most of the area, but some patches of dense saltbush scrub next to the western project boundary that completely obscured the ground. Ground visibility in the northern 1/3 of the property was restricted by saltbush scrub of varying density (Photograph 6). A large patch of saltbush, approximately 425 feet by 200 feet, in the north-central section was basically impenetrable. Only small trails through this area could be surveyed. On the east and west of this patch the saltbush was less dense, and there were large areas of bare dirt. Ground visibility in these areas probably averaged 75 percent. Much of the ungraded area showed evidence of ponding water in the past.

PHOTOGRAPH 5
Looking East from the Approximate Center of the Property Showing the Excellent Ground Visibility in the Cleared Areas

PHOTOGRAPH 6
View of Typical Ground Cover in Much of the Northern Third of the Property

6.0 Survey Results

The entire 25 acre parcel has been farmed in the past. Currently, the property is fallow, but faint traces of furrows remain, and there are numerous patches of salts on the surface, the results of irrigation. As noted above, the southeastern 1/3 of the property had been scraped of vegetation and a small amount of grading had taken place. There is a small house and storage shed on the southern edge of the property, approximately 275 feet west of the intersection of Neckel Road and State Route 86. A north-south row of trees extends along a lot line about 85 feet east of the house.

No previously unrecorded prehistoric cultural resources were found during the survey. A historic cultural resource consisting of a segment of the Dahlia Drain was identified during the survey. The Dahlia Drain runs north-south along the eastern edge of the project. The Dahlia Drain is part of the Imperial Irrigation District (IID) network of canals and drains that bring water to the farms and cities of the Imperial Valley. The drain is dirt without a concrete lining and is trapezoidal in cross section (Photograph 7). The top is approximately 22 feet wide, the sides slant in at about a 50 degree angle, and it is approximately 12 feet deep. The width at the bottom is unknown, as the canal is partially filled with water. There are no headgates or other concrete structures associated with the drain on the project property. The drain flows under Neckel Road in a culvert. A dirt maintenance road runs along the western edge of the canal. It is approximately 20 feet wide and raised above the adjacent agricultural field about three feet. The drain and service road segments have been given the temporary designation 5919-HJP-1. The Dahlia Drain was constructed sometime between 1940 and 1959, based on comparison of the USGS El Centro quad maps of those dates, and is at least 50 years old. Because it is a dirt canal, it has been cleared of vegetation on a regular basis. The road is probably at least partially constructed of dredging from the drain.

The IID has played a significant role in the development and importance of agriculture in the Imperial Valley. The water supplied by the IID has allowed the Imperial Valley to become a major factor in the agricultural economy of California. As a result of their importance in the development of agriculture, the IID canal system has also played a significant role in the development of El Centro and the surrounding agriculture-based communities in the valley. The canal system also furnishes the vast majority of the water for residential and commercial uses in the Imperial Valley.

The small, rectangular, wood-frame house on the property measures 24 feet by 32 feet, with two additions on the back (north) end. It has a medium pitch front-back gabled roof with open eaves and exposed rafters. The roof is covered with composition shingles. The house is covered with shiplap wood siding and rests on a concrete foundation (whether wall or slab could not be determined). There is a centrally placed door with a window on either side on the front façade (Photograph 8). The windows have large,

PHOTOGRAPH 7
Dahlia Drain Segment on the Eastern Edge of the Property, Looking North from Neckel Road

PHOTOGRAPH 8
Front (South) Façade of the House

PHOTOGRAPH 9
Rear (North) Façade of the House

diamond-shaped panes set in a fixed wood sash with a wood frame. The door also has large diamond shaped panes in the top half. There is a three-foot-wide concrete porch that runs across the entire front, covered by a shed roof. The east facade has three wood framed windows of different sizes. The panes of these windows do not match the front windows. There are numerous cuts in the siding, some possibly for removed or resized windows, and others for unknown purposes. The rear (south) façade has a centrally located door and a single window to the left of the door. There is a 10 foot by 14 foot uncovered slab porch on the left side. An addition extends off the right (west) half of the rear (Photograph 9). The addition appears to have been built in two phases. The first addition measures approximately 12 feet by 10 feet, with a gabled roofline. This addition is covered with shiplap siding similar to the main house and has a single wood frame window. The second addition extends off the right (west) side of the first addition, and measures approximately 14 feet wide by 21 feet deep. It has a shed roof slanting to the west, coming off the ridgeline of the first addition roof. Two walls of this addition are covered with shiplap siding, and one is covered with 4 feet by 8 feet sheet siding with a pressed tongue and groove pattern. There is a single window in this addition on the south façade. The west façade of the original house has three wood frame windows of different sizes. This façade also has numerous cuts in the siding.

The house shows up on the 1959 and on the 1940 USGS El Centro quad maps. Although the house is over 50 years old, the extent of alterations has severely compromised the historic integrity of the original structure, and the house is not considered a significant historic resource.

A sparse scatter of trash is spread across much of the northern 1/3 of the property. Material observed dated from the second half of the 20th century and consists of household trash such as ceramics, glass, cut bone, and some wood, plastic, and a little metal. The trash deposit does not appear to be a primary deposit associated with the house on the property, since the trash appears to begin about 600 feet north of the back of the house. It seems unlikely that the residents of the house would be throwing trash in their agricultural fields. If the trash was deposited before the property was farmed, it would most likely be closer to the house and much more concentrated. Farming equipment, although it does spread material, would not spread it as widely or as evenly as this trash is spread. The material seen has been extensively broken up, with few pieces more than two square inches in size. This also does not look like material from a primary trash deposit that has been spread by farming. It seems most likely that the trash is a secondary deposit that has been brought in with dirt and spread across the northern end of the property. The trash is not considered a significant cultural resource.

7.0 Management Considerations

No prehistoric cultural resources were found during the field survey of the project property and there are none listed at the South Coastal Information Center. One historic cultural resource, a section of the Dahlia Drain, was found during the survey. The drain is part of the IID canal system. Current development plans show the portion of the Dahlia Drain within the eight-acre phase 1 development area as being impacted. Although not stated, it is assumed the drain will be covered with a concrete roof or the existing ditch will be replaced with a culvert. In either case, the existing drain segment will be impacted by development.

The Dahlia drain segment, 5919-HJP-1, does not qualify itself under any of the four CEQA criteria for inclusion on the California Register of Historical Resources. However, the individual elements of the IID canal system do contribute to the importance of the system as a whole, and information on these elements contribute to knowledge of the system as a whole. RECON has filled out a California Department of Parks and Recreation Primary Site Form for the drain and service road on the property and submitted it to the South Coastal Information Center, so the information on these pieces of the system will be available in the future. A copy of the form is included as Attachment 2.

While the canals have not been routinely recorded or registered as historic elements of the IID canal system, and may not exhibit physical features that qualify as a historical resource under CEQA, they are the most important contributing part of the infrastructure needed for the successful development of the valley. Only the portions of the overall canal system within the project will be affected, and minor impacts are not likely to be detrimental to the historic integrity of the entire canal system. Also, as it is unlikely that the IID system will be looked at as a whole in any future project, recordation of the individual segments on a project-by-project basis will be the main means of recording the IID system.

RECON recommends no additional cultural resource work for this project.

8.0 Certification and Project Staff

This report was prepared in compliance with the California Environmental Quality Act and with policies and procedures of the City of El Centro. To the best of our knowledge, the statements and information contained in this report are accurate.

Harry J Price

Harry J. Price Jr., Project Archaeologist

The following individuals participated in the field tasks or preparation of this report. Resumes for key personnel are included as Attachment 3.

Harry Price	Project Archaeologist and Report Author
Vince Martinez	Graphic Illustrator
Steven Gaughran	Production Specialist
Sean Bohac	GIS Specialist

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ATTACHMENTS

ATTACHMENT 1

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

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November 2, 2010

Mr. Harry Price, Project Archaeologist
RECON
1927 Fifth Avenue
San Diego, CA 92101-2357

Sent by FAX to: 619-308-9334
No. of Pages: 4

Re: Request for a Sacred Lands File Search and Native American Contacts list for the "**Alliance Regional Center Commercial Develoopment Project;**" located in the El Centro area of Imperial County, California.

Dear Mr. Price:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources. The NAHC Sacred Lands File (SLF) search, did not Indicate the presence of Native American cultural resources within one-half mile of the proposed project site (APE). However, the absence of evidence of archaeological or cultural resources does not indicate that they do not exist at the subsurface level.

Also, this letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9.

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly recommend that you contact persons on the attached list of Native American contacts, including non federally recognized tribes/tribal representatives as they are persons with unique expertise in articulating Native American cultural resources.

Furthermore we suggest that you contact the California Historic Resources Information System (CHRIS) for pertinent archaeological data within or near the APE, at (916) 445-7000 for the nearest Information Center.

Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation.

Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery'.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects. Also, the 2006 SB 1059 the state enabling legislation to the Federal Energy Policy Act of 2005, does mandate tribal consultation for the 'electric transmission corridors. This is codified in the California Public Resources Code, Chapter 4.3, and §25330 to Division 15, requires consultation with California Native American tribes, and identifies both federally recognized and non-federally recognized on a list maintained by the NAHC. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e).

The response to this search for Native American cultural resources is conducted in the NAHC Sacred Lands Inventory, established by the California Legislature (CA Public Resources Code 5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code 6254.10) although Native Americans on the attached contact list may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance" may also be protected under Section 304 of he NHA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibility threatened by proposed project activity.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely

Dave Singleton
Program Analyst

Attachment: Native American Contact List

Native American Contacts
Imperial County
November 2, 2010

[illegible]a Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
PO Box 1120 Dieguено/Kumeyaay
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(619) 445-9126 - fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. Also, [illegible]ral National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106 and fed [illegible]NAGPRA. And 36 CFR Part 800.

This list is only applicable for contacting local Native Americans for consultation purposes with regard to cultural resources impact by the proposed Alliance Regional Center Commercial Development Project; located in the El Centro area of Imperial County, california for which a Sacred Lands File search and Native American Contacts list were requested.

Native American Contacts
Imperial County
November 2, 2010

[illegible]ocopah Museum
Jill McCormick, Tribal Archaeologist
County 15th & Ave. G — Cocopah
Sommerton , AZ 85350
culturalres@cocopah.com
(928) 530-2291 - cell
(928) 627-2280 - fax

Augustine Band of Cahuilla Mission Indians
Karen Kupcha
P.O. Box 846 — Cahuilla
Coachella , CA 92236
(760) 398-6180
916-369-7161

Quenchan Indian Nation
Bridget Nash-Chrabascz, THPO
P.O. Box 1899 — Quechan
Yuma , AZ 85366
b.nash@quechantribe.com
[illegible]28) 920-6068 - CELL
(760) 572-2423

Ah-Mut-Pipa Foundation
Preston J. Arrow-weed
P.O. Box 160 — Quechan
Bard , CA 92222 — Kumeyaay
ahmut@earthlink.net
(928) 388-9456

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. Also, f[illegible]ral National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106 and fed [illegible]NAGPRA. And 36 CFR Part 800.

This list is only applicable for contacting local Native Americans for consultation purposes with regard to cultural resources impact by the proposed Alliance Regional Center Commercial Development Project; located in the El Centro area of Imperial County, california for which a Sacred Lands File search and Native American Contacts list were requested.

ATTACHMENT 2

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** 3 *__Resource Name or #:__ 5919-HJP-1

P1. Other Identifier:
***P2. Location:** ☐ **Not for Publication** ☐ **Unrestricted** ***a. County:** Imperial
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** El Centro **Date:** 1979 **T** 15S ; **R** 14E ; W **¼ of Sec** 165 and **T** 15S ;**R** 13E E **¼ of Sec** 135**;** S.B. **B.M.**
c. Address: 1596 South Fourth Street (SR-86) City: El Centro Zip:
d. UTM: Zone: 11 ; 0633819mE / 3636613mN (paper)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
APN 043-020-023. The segment of the Dahlia Drain and road begin at the intersectin of Neckel Road and State Route 86, on the west side of State Route 86. It extends north from the intersection 1320 feet. Elevation is approximatley 65 feet above mean sea level.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The sectin of Dahlia Drain within the project is dirt, without a concrete lining and is trapezoidal in cross section. The top is approximately 22 feet wide, the sides slant in at about a 50 degree angle, and it is approximately 12 feet deep. The width at the bottom is unknown, as the canal is partially filled with water. There are no headgates or other concrete structures associated with the drain on the project property. The drain flows under Neckel Road in a culvert. A dirt maintenance road runs along the western edge of the canal. It is approximately 20 feet wide and raised above the adjacent agricultural field about 3 feet. The drain and service road segments have been given the temporary designation 5919-HJP-1. The Dahlia Drain was constructed sometime between 1940 and 1959, based on comparison of the USGS El Centro quad maps of those dates, and is at least 50 years old. Because it is a dirt canal, the canal has been cleared of vegetation on a regular basis. The road is probably at least partially constructed of dredging from the drain..*

P3b. Resource Attributes: (List attributes and codes) HP-20 Canal/aqurduct

***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. See Continuatin page for photograph

P5b. Description of Photo: (View, date, accession

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Oasis Growth Partners
2275 Huntington Dr. #534
San Marino, CA 91108

***P8. Recorded by:** (Name, affiliation, and address)
H. Price, RECON Environmental
1927 Fifth Ave.
San Diego CA 92101

***P9. Date Recorded:**
November 2010

***P10. Survey Type:** (Describe)
Phase 1 foot survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Cultural resource Survey for the Alliance Regiional Center, City of Imperial Imperial County, California. RECON Harry J Price.

***Attachments:** ☐NONE ☒Location Map ☐Sketch Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

CONTINUATION SHEET

Primary #
HRI#
Trinomial

Page 2 of 3 ***Resource Name or #** (Assigned by recorder) 5919-HJP-1

***Recorded by:** H. Price ***Date:** 12/17/08 ☒ Continuation ☐ Update

Photograph 1
Looking north along Dahlia Drain. Service road is on the left (west) and SR 86 is on the right (east).

State of California -- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary Number:
HRI Number:
Trinomial:

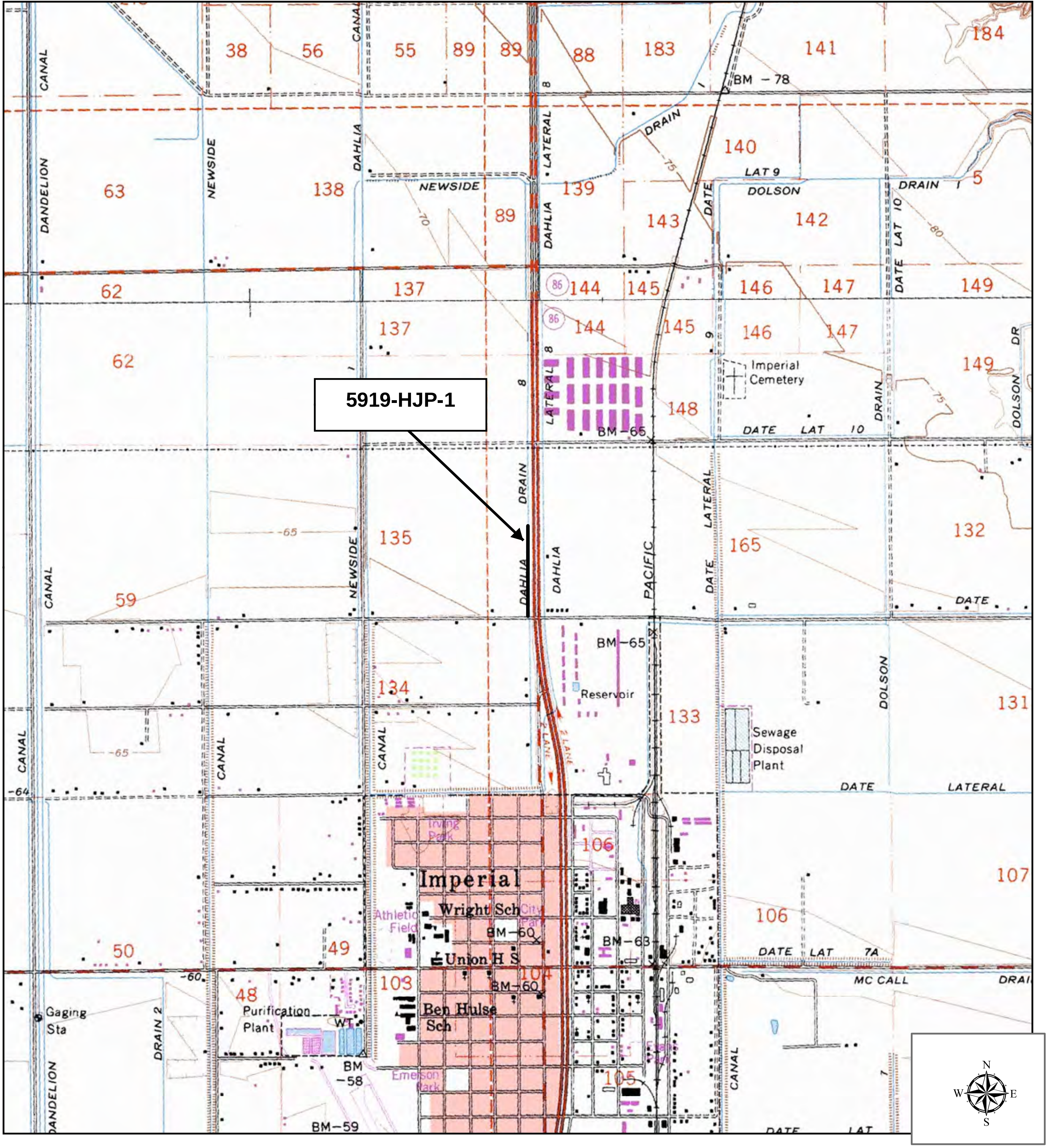
Page 4 of 4

*Resource Name or Number (Assigned by recorder): 5919-HJP-1

*Map Name: El Centro, California

Scale: 1:24,000

Date: 1957 (1979)



0 240 480 720 960 1200 1440 1680 1920 2160 2400 Meters

0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 Feet

Map Prepared by H. Price
M:jobs3\5919.1\arc\HJP_1.mxd

ATTACHMENT 3

Sean Bohac, GISP

GIS Analyst

Highlights

- ✓ GPS mapping and GIS analysis
- ✓ ArcGIS 9.3

Experience:

8 years

Education:

B.S., Biology, The Evergreen State College, Olympia, WA, 1998

GIS Certificate Program, Mesa College, San Diego, CA, 2002

Permits/Trainings:

ArcGIS-ArcINFO with Spatial Analyst, Maplex, Model Builder & Geodatabase

Affiliations:

San Diego Mountain Rescue Team, 2000 – 2006 (NASAR, MRA)

San Diego Chapter Sierra Club GIS team contributing member, 2001- 2002

The Nature Conservancy

Sierra Club

URISA San Diego

Experience Summary

Mr. Bohac has over seven years of geographic information systems (GIS) experience. He works closely with RECON biologists, archaeologists, and environmental analysts to compile, analyze, and synthesize data from various sources including data generated from the field using global positioning system (GPS) technology, digital engineering drawings, and data created through digitizing and other secondary sources.

Through Mr. Bohac's project experience working with federal agencies, he has demonstrated experience documenting geographic and spatial information in a manner consistent with those standards published by the Federal Geographic Data Committee (FGDC) in "Contents Standards for Digital Geospatial Metadata."

Prior to joining RECON, Mr. Bohac worked with the City of San Diego, Metro Wastewater Department where he provided GIS technical services to Stormwater Department and led the formation of a GIS team for the Department Emergency Operations Center. He also contributed datasets to a regional data warehouse (SanGIS) used by local and regional government agencies and private companies. Mr. Bohac also worked with the City of San Diego, GIS Manager, where he utilized ArcMap v3, 8 & 9 with Spatial Analyst, Maplex, and ArcIMS to support City-wide projects, and was assigned to the Fire Department's emergency response center GIS team for the 2003 Cedar Fire.

In 2002, Mr. Bohac coordinated with Sen. Barbara Boxer and the Sierra Club to provide official maps for California Wild Heritage Act (S. 2535) designating proposed wilderness areas and Wild and Scenic rivers in San Diego County.

Wetland Weed Plan for Camp Pendleton, San Diego, CA

Using large-scale field maps and sub-meter accuracy GPS units, Mr. Bohac compiled a geodatabase and map set of exotic weeds found in all eight of Camp Pendleton's major wetlands areas. The geodatabase delivered was SDS-FIE compliant. He designed map symbology for the project to clearly show multiple feature symbols in a single map.

BLM Yuma Draft Resource Management Plan/Draft Environmental Impact Statement (DRMP/DEIS), Yuma, AZ

Mr. Bohac was responsible for organizing and completing overall map and data production for all figures in the RMP. This included compiling and creating new data to represent management decisions, and designing cartographic representations while working within BLM mapping standards. He facilitated final data set production and delivery. He also developed an automated reporting tool in MS Access to help categorize, summarize and produce final reports of comments during the Comment Analysis process.

2005-2007 Gnatcatcher Survey, MCAS Miramar, CA

As project GIS Analyst, Mr. Bohac worked closely with the lead biologist to analyze habitat and determine coastal California gnatcatcher use areas on MCAS Miramar. The coastal California gnatcatcher has been listed as a Species of Special Concern in California and was listed as Threatened by the U.S. Fish and Wildlife Service in 1993 (USFWS 1993).

Eastern San Diego County Resource Management Plan(RMP) and Record of Decision (ROD) El Centro, CA

Mr. Bohac had a dual role in this RMP and ROD production process. During the public comment period, he served as a First Reader. He also customized a MS Access database and MS Excel worksheet to streamline the comment entry process. His expertise in GIS was used to edit and produce final figures and datasets for the ROD.

BLM South Coast Draft Resource Management Plan (DRMP), Palm Springs, CA

Working with environmental planners and soil resource specialists, Mr. Bohac designed maps and created spatial data to support and inform management decisions. This included compiling and creating new data that spanned broad regions and multiple soil surveys. He also utilized topology tools as part of the QA/QC process.

Delmarva Fox Squirrel HCP, Sussex County, DE

Mr. Bohac is a supporting analyst for this habitat-based, programmatic HCP focusing on impacts from development, transportation construction, and timber harvests of forest habitat for federally listed species, particularly the Delmarva fox squirrel. He contributed data through aerial image interpretation.

Sycamore Landfill Master Plan, San Diego, CA

Mr. Bohac provided GIS analysis for the Sycamore Landfill Master Plan through many development plan iterations. His careful attention to detail helped translate changes from engineering drawings to data for biological technical reporting.

Otay Mesa Community Plan Update, San Diego, CA

Mr. Bohac was responsible for all GIS mapping and analysis for this project. His efforts included interpretation and conversion of CAD data and all aspects of geographic analysis. The study identified environmental resources and constraints in the community plan area. He coordinated with project biologists and other partners to complete two drafts of this Plan Update for the City of San Diego.

Photovoltaic (PV) Solar Installation Planning, San Diego, CA

Prior to joining RECON, Mr. Bohac coordinated with the City of San Diego and the San Diego Regional Energy Office to estimate the PV potential energy for all commercial and industrial building roofs within the city. He managed the creation of a database of over 15,000 building footprints and used GIS tools to estimate the potential PV energy value per year for each parcel based on existing structures.

Wastewater Department Ops Center GIS Team Leader, San Diego, CA

Mr. Bohac drew from his experience and efforts in response to Hurricane Katrina in 2005 and the San Diego County Cedar Fire in 2003 to help the Wastewater Department integrate a GIS team into their Emergency Operations Center. He guided the development of real-time GIS mapping and query capability for a broad range of emergencies. He also participated as a GIS analyst in city-wide emergency drills.

GIS Facility Inventory Projects, San Diego, CA

Mr. Bohac took part in many GIS-based facility inventory projects for the city of San Diego. He contributed to city-wide datasets for stormwater drain features, fiber-optic cable network, steep canyon areas, parking meters, downtown parking zones, and irrigated lands vegetation. These projects involved aerial photograph interpretation, CADD data conversion and interpretation, as well as field reconnaissance.

Naval Base Point Loma Wetland Delineation, San Diego, CA

Mr. Bohac used many sources of data creation in this base-wide wetland delineation. In completing this project we collected data using sub-meter accuracy GPS units, used ‘heads-up’ digitizing on aerial photography, imported digital engineering drawings, and used pre-existing regional spatial databases. He also designed map elements to clearly show many similar features in close proximity.

Vince Martinez
Graphic Designer

Experience Highlights

- ✓ Expert in Adobe, InDesign
- ✓ Specializes in creating professional page layouts, graphics, & maps, for environmental documents

Experience

9 years

Education

B.A. Art, (emphasis graphic design), San Diego State University, 2001

Permits/Trainings

Adobe CS Software Training

Professional Affiliations

American Institute of Graphic Arts

San Diego Asian Film Foundation

Experience Summary

Mr. Martinez has nine years of experience and specializes in creating, editing, and assisting in all in-house graphic and web design needs. Using Adobe software, such as InDesign, he creates graphic layouts for reports and proposals, large format poster artwork for industry and professional conferences, and assists in the design of geographical images, maps, and illustrations. Mr. Martinez provides media digitization including maps and photographs pertaining to projects taken on by RECON. In addition, he provides design for the company website and client websites consisting of data researched and compiled by RECON.

Mr. Martinez is experienced in all graphic design programs including: Adobe InDesign, Photoshop, Illustrator, Flash, Dreamweaver, and Autodesk Viz. He is also experienced in ESRI ArcGIS.

Mr. Martinez's representative experience includes the following projects:

- Pima County MSCP/EIS, Pima County AZ
- BLM El Centro Field Office Imperial Sand Dunes Recreation Area Management Plan/EIS, El Centro, CA
- Naval Base Point Loma and Naval Base San Diego Integrated Natural Resource Management Plans (INRMP) and NEPA EAs, CA (for U.S. Navy, Southwest Division)
- Archstone Mission Gorge Redevelopment EIR, San Diego, CA
- Fireman's Fund Campus Redevelopment Project, Commons at Mt Burdell, Novato, CA
- Lower Colorado River Cultural Landscape Study and Sears Point Ethnography Study, Yuma, AZ
- Hazard Center Redevelopment EIR, Mission Valley, CA
- SDCWA Master Restoration Plan for work within Mission Trails Regional Park, San Diego, CA
- Otay Valley Regional Park Trails Project, San Diego, CA

Harry Price

Archaeologist/Architectural Historian

Highlights

- ✓ Field surveying, excavation, and monitoring
- ✓ Experience evaluating properties for the NRHP

Experience:

35 years

Education:

B.A., Anthropology, San Diego State University, 1976

Certifications/Trainings:

County of San Diego Approved CEQA Consultants List – Archaeological and Historic Resources

Qualified Archaeological Monitor, City of San Diego

Archaeological Field Training at Bancroft Ranch House and San Diego Presidio

Riverside County Cultural Sensitivity Training Course, Register No. 241

California BLM Cultural Resource Use Permit No. CA-08-16

Experience Summary

Mr. Price is an experienced archaeologist in the areas of excavation, site mapping, soil profiling, column sampling, surface collection, and field reconnaissance. He serves as field crew supervisor, conducts field surveys, provides illustration of artifacts, and prepares maps of archaeological sites.

Mr. Price's archaeological duties include organizing personnel and equipment for work in the field, daily assignment of duties to field crew, daily field notes on progress and results, site sampling strategy (i.e., shovel tests, 1x1-meter units, trenching), placement of sample unites, and site mapping. Mr. Price has experience in Historic American Building Survey (HABS) and Historic American Engineering Record (HAER) documentation for historic structures. He has performed historic building evaluations and archival research for many historic structures in the San Diego area and is familiar with the California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP) eligibility requirements. Mr. Price is on the County of San Diego's Qualified Consultants List for the fields of Historic Resources and Archaeology.

Historic Building Survey of the Escondido Mutual Water District Shop/Warehouse, Escondido, CA

Archival photographic research on history of a half round metal building constructed by the Escondido Water Districts to determine its significance under CEQA and City of Escondido Guidelines.

Historic Building Survey of Four Buildings on South Orange Avenue, Escondido, CA

Project Architectural Historian for this redevelopment project in Escondido. Responsible for background research, on-site current conditions survey, and buildings evaluation report with mitigation recommendations for these four buildings (three residences and an outbuilding) built between 1930 and 1960. The evaluation included archival, aerial photography and architectural research following CEQA and City of Escondido Guidelines.

Historic Building Survey on West San Ysidro Boulevard, City of San Diego, CA

Building was a single family residence constructed in 1920's and extensively modified. Evaluation was requested by City of San Diego as part of environmental document for multi-family residences on the property.

Historic American Building Survey (HABS) for the Descanso Ranger Station, Engine Garage, San Diego County, CA

Completed HABS documentation of the wood frame building including photography, sketches, and archival research to meet HABS level documentation determined necessary before destruction of the building.

Evaluation of Apartment/Day School at 4153 4th Avenue, San Diego, CA

Took photos and performed basic research to determine construction dates and original use of three buildings in Hillcrest area of San Diego for City staff to use to determine level of additional documentation required for redevelopment plan by UCSD.

National Register Evaluation/Documentation of Schwanbeck's Store, Crossroads, CA

Scope of project was to do a HABS level documentation of store remains for archival purposes as the resource was in declining condition.

Cultural Resource Survey of the Borrego Valley Airport Improvement sites, Borrego Springs, County of San Diego Department of Public Works Environmental Services, CA

For this County of San Diego project, Mr. Price served as project archaeologist responsible for conducting a pedestrian survey, technical report, construction monitoring, and monitoring report of improvement areas at the airport.

La Cresta Cultural Resources Test Excavations, San Diego, CA

Project archaeologist responsible for testing and site survey and recordation for this project. Testing of the site consisted of ten STP and eight soil profiles. The purpose of the STPs was to identify the presence or absence of cultural material and thus determine if any cultural resources had been disturbed during the flood control activities conducted by the County of San Diego Department of Public Works.

Historical Resources Survey for the Mission Gorge Superior Mine Reclamation Master Development Plan, City of San Diego, CA

Project Archaeologist responsible for conducting record search, directing the field effort, and writing the technical report with mitigation recommendations for this 395-acre. redevelopment project in Mission Gorge. Included the relocation and evaluation several segments of the Old Mission Flume, a City, State, and Federally listed historical resource.

Cultural Resources Survey of the Goddard Residence Property, Harbison Canyon, County of San Diego, CA

Cultural resource survey of 17 acre parcel for construction of house. Project included testing of small site on property, evaluation of remains of old house, recommendations for avoidance of resources.

Cultural Resource Survey of the Alvarado Apartments Project, San Diego, CA

Cultural resources survey of 9.9 acre developed property for redevelopment of apartment complex. Project included survey and report of negative findings.

Representative Projects

- Monitoring for the San Dieguito Lagoon Restoration Project, Del Mar, City of San Diego, CA
- Monitoring for the Arbor Terrace Project, North Park, City of San Diego, CA
- Monitoring for a Portion of the West Clusters Development Grading, Black Mountain Ranch, San Diego, CA
- Monitoring for the Veterinary Specialty Hospital Grading, Sorrento Valley, San Diego, CA
- Monitoring for AAA Office, Mission Valley, San Diego, CA
- Monitoring for Camino Del Sur and Lusardi Creek Bridge Grading, Black Mountain Ranch, San Diego, CA
- Monitoring for the Egyptian Condominiums, San Diego, CA
- Monitoring for Construction at MILCON P-634, MCB Camp Pendleton, CA
- 230 kV Transmission Corridor from Imperial Valley Substation to the International Border, CA
- Cultural Resources Survey for the Navy SERE Remote Training Site, Warner Springs, CA
- Cultural Resources Survey for BLM Dulzura Fuel Break, Dulzura, CA
- Cultural Resources Survey of a Portion of the Golf Training Area, MCB CampPendleton, CA
- Cultural Resource Survey of the Archstone Mission Gorge Development Project, Mission Gorge, City of San Diego, CA
- Cultural Resource Survey of the River Park Equestrian Center, Del Mar, City of San Diego, CA
- Cultural Resources Survey for Chula Vista Bayfront Master Plan EIR, Chula Vista, CA
- Cultural Resources Survey for Santee Town Center Specific Plan Amendment, Santee, CA
- Cultural Resource Survey and Building Evaluation of the AMCAL Multi-housing Project, El Centro, CA

- Evaluation of the Ivey Ranch House at the Ivey Ranch Park, Oceanside, CA
- Historic American Engineering Record (HAER) Documentation of Six Base End Stations in the White’s Point Reservation, Los Angeles County, CA
- Evaluation and Documentation of the Alta Loma Heights Citrus Association Packing House, Rancho Cucamonga, CA.
- Cultural Resource Surveys of Portions of Eight County Parks, San Diego, CA
- Cultural Resource Evaluation and Determination of National NRHP Eligibility for Two Sites on MCB Camp Pendleton, CA
- Data Recovery Excavations for the Western Portion of CA-SDI-13,727 in Valley Center, CA
- Data Recovery at the Villages of La Costa, Carlsbad, CA
- Cultural Resource Significance Testing of CA-SDI-16661 on the Holly Springs Property, Carlsbad, CA
- Test Excavations of Site at Highway 94 and Jamacha Junction, San Diego, CA
- Dry Lakes Data Recovery at 4-IMP-5620 for the Bureau of Land Management, Imperial County, CA
- Testing at 9 Sites in The Villages and The Ranch at Stallions Crossing, San Diego, CA
- Cultural Resource Survey of the Proposed Lake Murray, Cowles Mountain, and Fortuna Mountain Regional Park, San Diego, CA
- Data Recovery of Nine Archaeological Sites at La Costa North Lake and Golf Course Complex, Carlsbad, CA
- Data Recovery at Campus Point, San Diego, CA
- Cultural Resource Survey for the Hieatt-Jett Property, Carlsbad, CA
- Archaeological Testing of Six Sites at the Proposed North City West, Seventh Development Unit, City of San Diego, CA
- Extended Initial Studies at Mira Costa Estates, San Diego, CA
- Cultural Resource Survey for Areas VII and VIII of The El Sobrante Landfill Expansion, Riverside County, CA
- Archaeological Field Survey of Saint William of York Property, San Diego, CA
- Cultural Resource Survey for the El Corazon Property, Oceanside, CA
- Cultural Resource Survey for Los Peñasquitos Canyon Preserve, San Diego, CA
- Data Recovery at Ten Archaeological Sites at Westwood Valley, San Diego, CA
- Data Recovery at Santee Greens Development, El Cajon, CA

- Excavations at Los Peñasquitos (Johnson Taylor) Ranch House, San Diego, CA
- Testing of Archaeological Sites at Travertine Material Site, San Diego, CA
- Testing of Sites for a Portion of State Route 52/Interstate 15, San Diego, CA
- Cultural Resource Survey of the Shawnee Grantville Redevelopment Project, Mission Gorge, City of San Diego, CA
- Cultural Resource Survey of the Sunshine Beradini Fields Development Plan Property, San Diego, CA
- Cultural Resource Survey of the Robertson’s Oceanside, Concrete Facility, City of Oceanside, CA
- Cultural Resource Survey for the BLM Hauser Mountain Fuel Break, San Diego County, CA
- Cultural Resource Survey for the BLM Beauty Mountain Fuel Break, San Diego and Riverside Counties, CA
- Archaeological Survey of a Portion of Lake Cahuilla, Target 101, Naval Air Facility El Centro, CA

APPENDIX C-1

Biological Assessment Report

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BIOLOGICAL ASSESSMENT REPORT

OASIS IMPERIAL HOLIDAY INN PROJECT

Prepared for:
Oasis Group Partners LLC
2275 Huntington Dr. #534
San Marino, CA 91108

Prepared by:

UltraSystems Environmental, Inc.
16431 Scientific Way
Irvine, California 92618
(949)788-4900

September 2012

CONTENTS

EXECUTIVE SUMMARY

This General Biological Assessment Report describes the occurrence and potential occurrence of sensitive biological resources (including sensitive plants, wildlife and habitats) within the boundaries of the proposed Holiday Inn Resort Development in the City of Imperial, California.

Baseline biological conditions within the Project footprint, including within the 200 foot buffer zones, are documented in this report, including plant and wildlife inventories, disturbance factors, and major vegetation communities. This report addresses potential Project impacts on sensitive biological resources and recommends general avoidance and minimization measures to mitigate for such impacts.

On-site sensitive biological resources identified during the study include aquatic resources that are potentially subject to U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Game (CDFG) jurisdiction. No sensitive plant and animal species were observed during the field survey. However, the site displays moderate potential to support sensitive wildlife species. Occurrences of sensitive species have been recorded less than five miles from the project site.

INTRODUCTION

Project Location

The Oasis Imperial Holiday Inn Project (Project) is located in Section 15, Township 15S, Range 13E, within the El Centro USGS 7.5-minute quadrangle map (see Figure 1, Regional Overview Map). The Project is situated on the northwest corner of the intersection of Neckel Road and Highway 86 on a 25-acre commercial lot in the City of Imperial, Imperial County, California (see Figure 2, Proposed Project Map). The Project is bordered by Imperial Avenue to the west and Neckel Road to the south, with residential and agricultural lands to the north of the project.

Project Description

The Project is the first phase of a series of projects documented in the Alliance Regional Center Plan (ARC, 2010). The proposed Project will consist of a four-story hotel building with approximately 101 guest rooms, two built-in restaurants, and a retail area. Approximately 393 parking spaces, associated landscaping, and utility improvements will also be included in this project.

METHODS

Literature Review

Prior to conducting the field survey, UltraSystems reviewed available literature to identify any special-status plants, wildlife, or habitats known within the vicinity of the project. For this report, the project vicinity is defined as a radius within 5 miles from the project site and the project study area (PSA) was defined as the area within a 200-foot buffer zone directly adjacent to the Project's construction limits. The project footprint includes both temporary and permanent impact areas associated with the Project.

A list of special-status species recorded in the vicinity of the study areas was compiled from the CDFG Natural Diversity Database (CNDDB 2012) and the Biogeographic Information Observation System (BIOS) covered on the Newhall, El Centro, Heber, Calexico, Mount Signal, Seeley, Holtville West, Brawley, Brawley Northwest, and Alamorio 7.5-minute USGS topographic quadrangle maps. Additional special-status plant species that are found on or near the property were derived from the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California database. Federal Register listings, protocols, and species data provided by the U.S. Fish and Wildlife Service (USFWS) and CDFG were reviewed to identify any federally- and state-listed species, or critical habitat, potentially occurring within the vicinity.

Sources: © 2010 NAVTEQ © 2012 Microsoft Corporation , National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, iPC; UltraSystems Environmental Inc., 2012

June 26, 2012

Figure 1. Regional Overview

Sources: Service Layer Credits: Image courtesy of USGS © 2012 Microsoft Corporation © 2010 NAVTEQ © AND National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, iPC; UltraSystems Environmental Inc., 2012

Figure 2. Project Location

Field Survey

A general biological assessment was conducted by UltraSystems biologists Kristie Spiro and Joyce Mak on August 13, 2010. Joyce Mak and Elizabeth Kempton conducted a follow-up site visit on May 30, 2012 to assess the existing conditions and the potential for sensitive resources to be present at the project site and adjacent area(s). The assessment included a 100% pedestrian survey of the project site, plus a 200-foot buffer zone where access was possible. A meandering search pattern within linear transects was used to obtain maximum coverage. Binoculars were used to view plants and wildlife where the pedestrian survey was not possible due to visibility or access, such as near private properties. Field notes and photographs were taken on the general biological conditions of the site, with particular focus on special-status biological resources, including the Burrowing Owl (*Athene cunicularia*) and its and other habitats suitable to support special-status plant and wildlife species.

RESULTS

General Site Conditions

The 2012 survey was conducted in acceptable weather conditions. Temperatures ranged from 91 to 99 degrees Fahrenheit, with no precipitation and wind speeds from 0 to 2.0 miles per hour on both visits. Thirteen plant species were observed within the project site and buffer zones during the 2010 survey (*Appendix C, Plant Species Observed*). However, since 2010 the PSA has mostly been graded; less than 10 percent of the vegetation observed in 2010 remained during the 2012 survey. Therefore, the plant species identified in the 2010 survey are used herein to characterize the site. Nineteen wildlife species or their signs (including tracks, scat, burrows, nests, excavations, and vocalizations) for both surveys were recorded within the vicinity (*Appendix D, Wildlife Species Observed*).

Hydrology

A drainage ditch runs parallel to the east border of the Project site and Imperial Highway. A metal pipe was observed that allows the water in this drain to flow under Neckel Road. The drainage ditch had very little water in it during the August 13, 2010 survey and a considerable amount of water during the May 10, 2012 survey, possibly due to the timing of the visit (*Appendix B*, *Photograph*). A jurisdictional delineation determination was conducted in concurrence with this biological assessment during the 2012 survey. Details on the hydrology within the PSA are documented in the Jurisdictional Delineation Report.

Vegetation Communities

Two main vegetation communities were observed during the 2010 survey. They include Desert Saltbush Scrub, and Disturbed/Developed. Because the PSA has been graded, only the Disturbed/Developed vegetation community is now present. However, for purpose of comparing 2010 and 2012 conditions, the Desert Saltbush Scrub community description will remain in this report.

Community descriptions for the vegetation communities described below are based on field findings (Holland, 1986). The Orange County Habitat Classifications Systems was used to describe non-native vegetation occurring within the developed and disturbed lands within human-built environments.

1. Desert Saltbush Scrub (36110)

Desert Saltbush Scrub was present within the PSA during the 2010 survey. Desert Saltbush Scrub is typically characterized by low, grayish microphyllous shrubs 1 to 3 feet in height dominated by saltbush (Atriplex sp.) with some succulent species. Cover in this community is often low with much bare ground between the widely spaced shrubs. Microhabitat consists of fine-textured, poorly drained soils with high alkalinity and/or salinity surrounding playas on slightly higher ground at elevations below 4,000 feet above mean sea level (Holland 1986).

Desert Saltbush Scrub is present within the Project site, particularly on its northern portion (See Appendix B, Photograph 1). Quailbush (Atriplex lentiformis) is the dominant Saltbush species present onsite. Sub-dominant plant species observed that are also typical of this vegetation community include Allscale (Atriplex polycarpa) and Four-wing Saltbush (Atriplex canescens).

2. Developed/Disturbed (DD)

Developed areas are areas that have been altered by humans and now display man-made structures, such as houses, paved roads, buildings, parks, and other maintained areas. Disturbed areas are those areas that are either devoid of vegetation (cleared or graded), such as dirt roads or those areas that have a high percentage (greater than 25 percent) of non-native weedy (ruderal) plant species. Disturbed areas often include ruderal vegetation. Ruderal areas, as described by Grey and Bramlet (1992), consist of early successional habitats that are dominated by pioneering herbaceous species that readily colonize disturbed ground. The soils in ruderal areas are typically characterized as heavily compacted or frequently disturbed. Ruderal vegetation is adapted to living in compact soils that water does not readily penetrate.

Developed/Disturbed areas observed within the study area include graded areas, a graded drainage ditch, paved roads, dirt roads, and residential properties. Non-native weedy (ruderal) plant species found within the study area include Foxtail Chess (Bromus madritensis ssp. rubens) and Canary Grass (Plahis minor). The PSA also consist of a few planted exotic palm trees and a few landscaping tree species. Other site disturbances include trash, erosion, and off-road vehicle use.

Critical Habitat

The Project site is not within federally designated Critical Habitat for any sensitive species. There is no critical habitat found within the five mile radius and within the six USGS quadrangles search during the literature review of the PSA.

Sensitive Species

Sensitive plant and wildlife species include endangered, threatened, proposed threatened or endangered, and rare species of the USFWS and CDFG; California Special Concern Species, CNPS-listed plants (1B only) and locally listed species. A review of six USGS quadrangles adjacent to and including the Project location determined that 15 sensitive species may have the potential to occur within the general vicinity of the Project site. Three sensitive wildlife species, burrowing owl (*Athene cunicularia*), flat-tailed horned lizard (*Phrynosoma mcallii*), and Western yellow bat (*Lasiurus xanthinus*) had a moderate to high potential to occur within the PSA during the 2010 visits. However, due to the recent grading activities, the two species, Burrowing owl and flat-tailed horned lizard, that were considered to have a moderate to high potential now have a low potential to be present in the PSA during the 2012 survey. For comparison purposes in this biological assessment, the Burrowing owl and flat-tailed horned lizard description will remain in this report. No sensitive plant species are likely to occur onsite. The *Sensitive Species* table in *Appendix A* contains information regarding 15 species known to occur in the general Project vicinity.

Sensitive Wildlife

1. Burrowing Owl (*Athene cunicularia*)

The Burrowing Owl is a CDFG-listed Species of Special Concern. It is a yearlong resident in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats and a yearlong resident of open, dry grassland and desert habitats. It is also often found along irrigation channels in agricultural areas. It feeds primarily on insects, small mammals, reptiles, other birds, and carrion. This species uses abandoned rodent burrows or other burrows for roosting and nesting cover.

Occurrence Potential: Imperial County is within the native range for this species. Recent occurrences have been documented within 1.5 miles of the Project vicinity. This species may occur in areas with suitable burrows for nesting and where sparse vegetation is present. Habitat was present during the 2010 survey however, no Burrowing Owls or were observed during the 2010 habitat surveys. However, the 2012 survey found that vegetation had decreased dramatically from sparse to almost none. Although there are existing empty pipes and piled construction materials present within the PSA that may provide nesting sites for this species, each empty pipe hole and pile of construction materials was examined during the 2012 survey and no evidence of this species, including tracks, bird droppings, or gathering materials that are usually present for their nesting activities, was present within the PSA. Therefore, this species will likely ***not*** occur within the PSA and no further surveys are warranted at this time.

2. Flat-tailed Horned Lizard (*Phrynosoma mcallii*)

The Flat-tailed Horned Lizard is a CDFG listed Species of Special Concern. It is a yearlong resident of sandy desert hardpan or gravel flats with sparse vegetation. It requires fine windblown sand but seldom occurs on dunes. It feeds primarily on harvester ants.

Occurrence Potential: Imperial County is within the native range for this species. Recent occurrences have been documented within 3.5 miles of the Project vicinity. This species may occur in areas where suitable habitat and prey are present. FTHL was not observed during the 2010 survey. Due to the lack of vegetation after recent grading activities, this species is *not* likely to occur within the PSA.

3. Western Yellow Bat (*Lasiurus xanthinus*)

The Western Yellow Bat is a CDFG-listed Species of Special Concern. It is a yearlong resident of valley foothill, desert riparian, desert wash, and palm oasis habitats. It is also often found roosting in non-native palm trees. It feeds on insects, primarily beetles.

Occurrence Potential: Imperial County is within the documented range for this species. This species occurs in areas with suitable roosting and foraging habitat especially from the existing landscaping palms that are present within the site. Recent occurrences were documented in the area in 1992 within the Project vicinity. Additionally, the range of this species is believed to be expanding.

POTENTIAL BIOLOGICAL IMPACTS AND RECOMMENDED MITIGATION MEASURES

The following is a discussion of potential project-related effects on sensitive biological resources and associated recommended minimization and avoidance measures to mitigate for those impacts.

Potential Impact 1: Jurisdictional Areas

As stated above, an active drainage flows through the Project site along the eastern edge of the parcel. The U.S. Army Corps of Engineers (USACE) and the CDFG have jurisdiction over certain streams, watercourses, and wetlands. Alteration, such as filling, of these jurisdictional areas requires a permit from USACE and a Streambed Alteration Agreement from CDFG. Additionally, activities that require a fill to USACE jurisdiction are also subject to certification by the Regional Water Quality Control Board (RWQCB) under Section 401 of the Clean Water Act.

CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake which supports fish or wildlife resources under Sections 1600–1603 of the California Fish and Game Code. The CDFG develops Streambed Alteration

Agreements for the alteration of any of these areas. CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and other wildlife. The CDFG Legal Advisor (ESD-CDFG 1994) has prepared the following opinion:

> Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects and riparian vegetation will be treated like natural waterways…
>
> Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses should be treated by [CDFG] as natural waterways…
>
> Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Game Code provisions….

To address potential permanent, temporary, and indirect impacts on Jurisdictional waterways, Mitigation Measure 1 (MM1) should be implemented.

MM 1: Avoidance of Potential Jurisdictional Areas

Silt netting and a chain link fence should be used along the drainage feature (Potential Jurisdictional Area) that borders the eastern part of the Project site. This fence would guard against any inadvertent effects to a Potential Jurisdictional Area including, but not limited to, the introduction of fill, machine fuel, and construction debris.

A formal jurisdictional delineation and report was conducted in concurrence with this biological assessment during the 2012 survey to determine the jurisdictional status of aquatic features observed within the Project site.

Potential Impact 2: Nesting Birds and the Migratory Bird Treaty Act (MBTA)

The Migratory Bird Treaty Act (MBTA) protects the majority of migratory birds breeding in the U.S., regardless of their official federal listing status (Threatened or Endangered). The provisions of this international act govern the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. The law applies to the disturbance or removal of active nests occupied by migratory birds during their breeding season. It is specifically a violation of the MBTA to directly kill or destroy an occupied nest of any bird species covered by the Act.

California Fish and Game Code (CFGC, Section 3503) protects the nest and eggs of native non-game birds. Under this law, it is unlawful to take, possess, or destroy any such birds or to take, possess, or destroy the nests or eggs of any such bird. The Code (Section 86) defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

The existing stands of Desert Saltbush Scrub vegetation on site have a high potential for nesting birds to occupy them during the breeding season (February 15 to August 31). Ground-nesting birds may nest on-site within the large non-vegetated areas in and adjacent to the Project.

Project implementation and construction-related activities, including, but not limited to, tree/vegetation removal, materials lay-down, and machine/equipment noise, may result in the disturbance of nesting MBTA/CDFG-protected species that could occur within Project site. Trimming or removal of vegetation could destroy or disturb active nests. Equipment noise, vibration, lighting, and other human-related disturbance, could disrupt normal activities of birds found on or immediately adjacent to the Project site.

To prevent direct and/or indirect impacts to MBTA/CDFG-protected species, Mitigation Measure 3 (MM 3) should be implemented.

MM 2: Pre-Construction Survey for Nesting Birds

To avoid impacts on nesting birds, construction activities should take place between September 1 and February 14, to avoid the nesting season of federally and State protected migratory birds. However, if construction occurs between February 15 and August 31, the following should be implemented:

- A pre-construction survey (within three days prior to work in the areas) shall be conducted by a qualified biologist to determine the presence or absence of active nests within, or adjacent to, the Project site to avoid the nesting of breeding migratory birds.

- If no nesting birds are found within or adjacent to the project work area during the pre-construction survey period, construction activities may proceed as scheduled. If an active nest is found within or adjacent to the project work area during construction, a "No Construction" Buffer Zone shall be established around the active nest (usually a minimum radius of 200 feet for passerine birds and 500 feet for raptors) to minimize project impacts on the nesting activity. The onsite Project biologist/biological monitor will determine and flag the appropriate buffer size required, based on the specific situation, tolerances of the species, and the nest locations. Project activities may resume in the buffer area when the Project biologist/biological monitor has determined that the nest(s) is no longer active. Also, a biological monitor should be present during vegetation removal in the nesting season to minimize impacts on nesting birds.

If listed Endangered or Threatened species are found within 500 feet of the Project Work Area, the USFWS and CDFG, as appropriate, will be consulted at the time they are first observed.

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APPENDIX A: OCCURRENCE POTENTIAL TABLE

Species name	Status Designation	Habitat Requirements	Probability of Occurrence within Study Area
Wildlife			
Incilius alvarius Sonoran Desert Toad	Fed: CA: SC Other:	Inhabits grasslands, arid desert lowlands, mountain canyons with oaks and sycamores, and pinyon-oak-juniper mountain forests. Found in washes, river bottoms, springs, reservoirs, canals, irrigation ditches, streams, temporary pools, and away from water. From sea level to 5,700 ft. (1,760 m.)	**NOT EXPECTED** Habitat suitability poor. Out of known range for this species. Last documented 1912 approximately 7 miles from site.
Lithobates pipiens Aka *Rana pipiens* Northern Leopard Frog	Fed: CA: SC Other:	Inhabits grassland, wet meadows, potholes, forests, woodland, brushlands, springs, canals, bogs, marshes, reservoirs. Generally prefers permanent water with abundant aquatic vegetation. Eats invertebrates, leeches, fish, amphibians, snakes, and small birds.	**NOT EXPECTED** Habitat suitability poor. Out of known range for this species. Last documented 1929 approximately 3.5 miles from site.
Lithobates yavapaiensis Aka *Rana yavapaiensis* Lowland Leopard Frog	Fed: CA: SC Other:	A habitat generalist - throughout most of its range, this frog is found in streams, river side channels, springs, ponds, stock ponds in desert scrub, grassland, woodland, and Pinyon Juniper. This frog eats anything it can overtake and capture.	**NOT EXPECTED** Habitat suitability poor, no water on site. Last documented in 1909 approximately 5 miles from site.
Phrynosoma mcallii Flat-tailed Horned Lizard	Fed: CA: SC Other:	Typical habitat is sandy desert hardpan or gravel flats with scattered sparse vegetation of low species diversity. Eats mostly Harvester ants. Most common in areas with a high density of harvester ants and fine windblown sand, but rarely occurs on dunes. From below sea level to around 820 feet. in elevation.	**LOW** Habitat may be suitable. Prey may be present onsite. Last documented 3.5 miles from site.
Uma notata Colorado Desert Fringe-toed Lizard	Fed: CA: SC Other:	Sparsely-vegetated arid areas with fine wind-blown sand, including dunes, flats with sandy hummocks formed around the bases of vegetation, washes, and the banks of rivers. Needs fine, loose sand for burrowing. Eats small invertebrates such as ants, beetles, and grasshoppers, along with occasional blossoms, leaves, and seeds.	**NOT EXPECTED** Habitat suitability is poor.
Athene cunicularia Burrowing Owl	Fed: CA: SC Other:	Occurs in open, dry annual or perennial grasslands, deserts and scrublands with low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, particularly the California ground squirrel.	**LOW** Suitable habitat present. Last documented 1.5 miles from site in 2003.
Buteo regalis Ferruginous Hawk	Fed: CA: SC Other:	Inhabits open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles. Variable nesting habits.	**NOT EXPECTED/LOW** Not expected during summer. Low potential for presence in winter. Habitat suitability poor.

Dendroica petechia brewsteri Yellow Warbler	Fed: CA: SC Other:	Migratory form breeds in California (April-October). Prefers wet deciduous thickets, lowland/foothill riparian areas, and old fields. Feeds on insects and fruit.	**NOT EXPECTED** Habitat suitability poor. No riparian habitat onsite.
Empidonax traillii extimus Southwestern Willow Flycatcher	Fed: FE CA: Other:	Occurs at low elevations. Breeds primarily in dense woodlands along streams and rivers. This species prefers willow and cottonwood thickets but will occasionally nest in tamarisk thickets along moving water. Insectivore.	**NOT EXPECTED** Habitat suitability poor. No water on site.
Laterallus jamaicensis coturniculus California Black Rail	Fed: CA: ST Other:	Found in freshwater marshes and wet meadows. These birds are ground nesters and prefer shallow water. They feed primarily on insects and seeds.	**NOT EXPECTED** Habitat suitability poor. No marsh habitat on site.
Melanerpes uropygialis Gila Woodpecker	Fed: CA: SE Other:	Characteristic bird of the saguaro cactus forests. Excavates nest holes in saguaro cactus. Omnivorous bark forager will eat insects, seeds, lizards and bird eggs.	**NOT EXPECTED** Habitat suitability poor. Nest sites not present on site.
Rallus longirostris yumanensis Yuma Clapper Rail	Fed: FE CA: ST Other:	Inhabits salt marshes and mangrove swamps. Feeds on crustaceans, fish, insects, seeds, bird eggs and slugs. Western subspecies is endangered, Eastern form is abundant.	**NOT EXPECTED** Habitat suitability poor. No marsh habitat on site.
Eumops perotis californicus Western Mastiff Bat	Fed: CA: SC Other:	Occurs in a variety of arid habitat including conifer and deciduous woodlands, coastal sage scrub, grassland, and chaparral. Roots in crevices, structures, trees and tunnels. Insectivorous.	**LOW** Habitat suitability poor. No suitable roosts on site; may use site as foraging habitat.
Lasiurus xanthinus Western Yellow Bat	Fed: CA: SC Other:	Uncommon in California, known only in Los Angeles and San Bernardino counties south to the Mexican border. This species has been recorded below 2000 feet in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. This species occurs year-round in California. Data suggests that this species may be increasing in range and abundance in the U.S. This species is not known to occur on bridges. Insectivorous.	**MODERATE** Documented in the project area in 1992. No suitable roosts on site; may use site as foraging habitat.
Nyctinomops macrotis Big Free-tailed Bat	Fed: CA: SC Other:	This species has a low potential to occur on bridges. Occurs in rugged rocky upland habitats in the southwest. Has been found in urban area roosting in buildings and trees. Primarily roots in rocky crevices and cracks and forages on large moths. Often found foraging near areas with water.	**NOT EXPECTED** Habitat suitability poor. No suitable roosting or foraging sites.
Plants			
Abronia villosa var aurita Chaparral Sand Verbena	Fed: CA: Other: CNPS 1B.1	Occurs in Chaparral, Coastal scrub and Desert dunes. Bloom period is January-September. Plant is rare in California and elsewhere.	**NOT EXPECTED** Habitat suitability poor. Last documented 1949 approximately 7 miles from site.

Pholisma sonorae Sand Food	Fed: CA: Other: CNPS 1B.2	Occurs in Desert dunes. Bloom period is Apr-Jun. Plant is rare in California and elsewhere.	**NOT EXPECTED** No suitable habitat. Last documented 1915 approximately 7 miles from site.

Key

Probability to Occur Onsite

Present: Observed on the site during surveys described here, or recorded on-site by other qualified biologists.

High: Observed in similar habitat in regions, reported sightings in surrounding region or habitat on the site is a type often utilized by the species and the site is within the known range of the species.

Moderate: Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.

Low: Site is within the known range of the species but habitat on the site is of poor quality or low suitability.

Not Expected: A focused study failed to detect the species, or, no suitable habitat is present.

Status Designation

U.S. Fish and Wildlife Service	**California Native Plant Society**	**California Department of Fish and Game**
END Federal Endangered	1A Plants presumed extinct in California.	END California Endangered
THR Federal Threatened	1B Plants rare, threatened, or endangered in California, and elsewhere.	THR California Threatened
		SC State Species of Special Concern

APPENDIX B: SITE PHOTOGRAPHS

2010 PHOTOS

Photo 1. Southeast Portion of Parcel: Vegetation is sparse and primarily consists of saltbush and non-native weedy species. Photograph taken facing northwest.

Photo 2. Southwest Portion of Parcel: Disturbed areas show signs of off-road vehicle use. Photograph taken facing southwest.

Photo 3. West Border of Parcel: Ornamental plantings line a small ditch on the border of the property. Photograph taken facing northwest.

Photo 4. Southwest Portion of Parcel: Telephone poles that border the property may provide nesting locations for raptors. Photograph facing northeast.

Photo 5. Potential Jurisdictional Area: This drainage ditch runs along the east edge of the Project Site parallel to Imperial Highway. Photograph taken facing east.

Photo 6. Potential Jurisdictional Area: The drainage pipe in this photograph runs under Neckel Road. Photograph facing southeast.

2012 PHOTOS

Photo 7. Southwest Portion of Parcel: Fencing that is situated on the south border of the property. Photograph taken facing west.

Photo 8. Southern Portion of Parcel: Graded barren areas with the partially-built building within the PSA. Photograph taken facing north.

Photo 9. Southeast Portion of Parcel: Graded barren areas within the PSA facing residential area across the Imperial Hwy. Photograph taken facing northeast.

Photo 10. Northern Portion of Parcel: Graded barren areas with the partially-built building within the PSA. Photograph taken facing south.

Photo 11. Southwest Portion of Parcel: Landscaping palms and trees that border the property may provide nesting locations for avian species and roosting habitat for bats. Photograph taken facing northwest.

Photo 12. Potential Jurisdictional Area: The drainage pipe in this photograph runs under Neckel Road. Photograph taken facing southeast.

APPENDIX C: PLANT SPECIES OBSERVED

Plant Species Observed August 13, 2010 and May 30, 2012 Holiday Inn Project Site	
Scientific Name	**Common Name**
ANGIOSPERMS (DICOTYLEDONS)	
ASTERACEAE	**SUNFLOWER FAMILY**
Helianthus annuus	Common Sunflower
Pluchea sericea	Arrow Weed
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
Atriplex sp.	Saltbush
Atriplex canescens ssp. *linearis*	Four-wing Saltbush
Atriplex lentiformis	Quailbush
Atriplex polycarpa	Allscale
*Bassia hyssopifolia**	Five-hooked Bassia
*Salsola tragus**	Russian Thistle
FABACEAE	**LEGUME FAMILY**
Parkinsonia aculeate	Jerusalem Thorn
MALVACEAE	**MALLOW FAMILY**
Malvella leprosa	Alkali Mallow
ANGIOSPERMS (MONOCOTYLEDONS)	
ARECACEAE	**PALM FAMILY**
Washingtonia sp.	Palm
POACEAE	**GRASS FAMILY**
Bromus madritensis ssp. *rubens**	Foxtail Chess
*Phalaris canariensis**	Canary Grass
**Non-Native Species*	

APPENDIX D: WILDLIFE SPECIES OBSERVED

Wildlife Species Observed August 13, 2010 and May 30, 2012 Holiday Inn Project Site	
Scientific Name	**Common Name**
BIRDS	
Columb livia	rock pigeon
Corvus cryptoleucus	common raven
Egretta thula	snowy egret*
Mimus polyglottos	northern mockingbird**
Passer domesticus	house sparrow
Phainopepla nitens	phainopepla*
Quiscalus mexicanus	Great-tailed Grackle**
Streptopelia decaocto	Eurasian collared dove**
Sturnus vulgaris	European starling
Zenaida asiatica	white-winged dove
Zenaida macroura	mourning dove
FISH	
Gambusia affinis	western mosquito fish**
MAMMALS	
Canis latrans	coyote*
Sylvilagus audubonii	desert cottontail*
REPTILES	
Sceloporus occidentalis	Western fence lizard
INSECTS	
Lasius niger	black garden ant*
Arachnida sp.	Arachnid*
Apis sp.	Bee*
Coleoptera sp.	Beetle
*Species observed in 2010 only	
**Species observed in 2012 only	

APPENDIX C-2

Jurisdictional Delineation Report

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JURISDICTIONAL DELINEATION REPORT
IMPERIAL COUNTY HOLIDAY INN

Prepared for:

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September 2012

CONTENTS

INTRODUCTION

This Jurisdictional Delineation Report was prepared to identify potential government-regulated waters within the boundary of the Imperial Holiday Inn Project (Project) area, including Waters of the United States (WoUS) and Waters of the State of California (WoS). Also provided are impact analyses based on the current design specifications, and recommendations concerning applicable permits that may be required prior to construction. All conclusions reported herein may be subject to modifications, and are considered tentative until verified by the United States Army Corps of Engineers (USACE), California Department of Fish and Game (CDFG), and the Regional Water Quality Control Board (RWQCB).

Project Location

The Imperial Holiday Inn Project is located in the City of Imperial, Imperial County, California on a 25-acre parcel (**Figure 1**, Project Location). The proposed project is located at the northwest corner of the intersection of Neckel Road and Highway 86, less than 2 miles north of the Imperial County Airport. It is 3.6 miles west of Old Highway111, 2.6 miles east of County Highway S30, and 7.9 miles south of Highway 78 (**Figure 2**, Regional Overview). The proposed project is in Section 15, Township 15S, Range 13E, within the El Centro USGS 7.5-minute quadrangle map. The parcel is zoned for commercial use and is located at the northernmost portion of the incorporated portion of the city; lands immediately to the north are zoned for agricultural use.

Project Background

The proposed project is a four-story hotel building that will consist of about 101 guest rooms, two built-in restaurants, and a retail area (Appendix A, Site Plan). Other features of the project include 393 parking spaces, and associated landscaping and utility improvements. It is the first of a series of projects included in the Alliance Regional Center Plan.[1]

Regulatory Framework

Section 404 of the Clean Water Act—USACE Jurisdiction

The Clean Water Act (CWA) regulates discharges of pollutants into the waters of the United States (WoUS) (33 USC §1251 et. seq.). Discharges to the WoUS, including federal wetlands, (i.e. wetlands subject to federal jurisdiction under the CWA) are regulated pursuant to the Federal Clean Water Act (CWA), codified at 33 USC §1344. The discharge of dredged or fill material to WoUS requires permits pursuant to Section 404 of the CWA from the US Army Corps of Engineers (USACE) nationwide, regional, or standard individual permit, depending on the proposed discharge. If a Section 404 or other federal permit that authorizes the discharge of pollutants to WoUS is required, then certification pursuant to Section 401 of the CWA is required from the Regional Water Quality Control Board (RWQCB).

In general, WoUS are water bodies that are either navigable themselves, or connected or have a "significant nexus" with traditionally navigable waters (TNW). This includes "reasonably permanent waters" (RPWs) and their tributaries if they have a potential to impact TNWs. Briefly stated, TNWs flow into the ocean or are tied to interstate or foreign commerce with certain limitations and exceptions as defined in 33 Code of Federal Regulations (CFR) §328.3(a)(1), and 40 CFR §230.3(s)(1). RPWs are those "*non-navigable tributaries of TNWs… where the tributaries typically flow year-round or have continuous flow at least seasonally (i.e., typically three months).*" The USACE will assert jurisdiction over WoUS, including wetlands "adjacent" to TNWs or wetlands that have a "*continuous*

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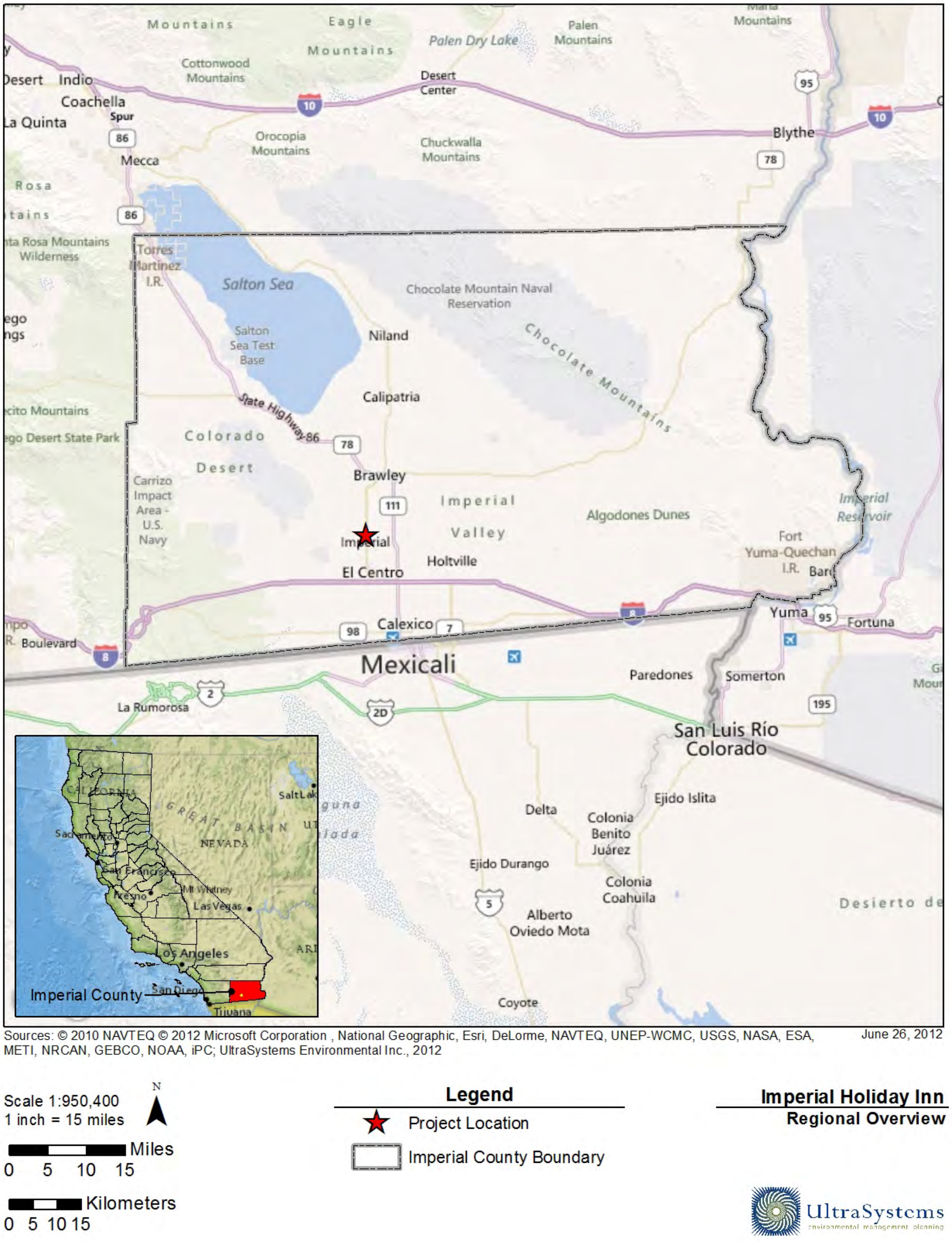
[1] Oasis Growth Partners, L.L.C. 2010.

Sources: Service Layer Credits: Image courtesy of USGS © 2012 Microsoft Corporation © 2010 NAVTEQ © AND National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, iPC; UltraSystems Environmental Inc., 2012

Figure 1. Project Location



Sources: © 2010 NAVTEQ © 2012 Microsoft Corporation , National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, iPC; UltraSystems Environmental Inc., 2012

June 26, 2012

Scale 1:950,400
1 inch = 15 miles

Miles
0 5 10 15

Kilometers
0 5 10 15

Legend

★ Project Location

▭ Imperial County Boundary

Imperial Holiday Inn
Regional Overview

UltraSystems
environmental management planning

Figure 2. Regional Overview

surface connection to RPWs."[2] The USACE will also assert jurisdiction of wetlands under the "significant nexus" standard.[3] In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters extend to the ordinary high water mark (OHWM) or, when adjacent wetlands are present, beyond the OHWM to the limit of the adjacent wetlands.[4]

The agencies may assert jurisdiction over the following types of waters when they have a significant nexus with a TNW:

1. Non-navigable tributaries that are not relatively permanent,
2. Wetlands adjacent to non-navigable tributaries that are not relatively permanent, and
3. Wetlands adjacent to, but not directly abutting, a relatively permanent tributary (e.g., separated from it by uplands, a berm, dike or similar feature).

As described below, the agencies would assess the flow characteristics and functions of the tributary itself, together with the functions performed by any wetlands adjacent to that tributary, to determine whether collectively they have a significant nexus with traditional navigable waters.[5]

Wetlands are areas that are (USACE 1987, Part II, page 9):

> *"inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."*

Three indicators of wetland conditions must be present to meet the criteria for this definition: hydrophytic vegetation, hydric soils, and wetland hydrology. The methodology, limitations and exceptions are covered in two USACE publications: the *Wetland Delineation Manual,*[6] and the *Arid West Regional* Supplement,[7] with the 1987 manual taking precedence if the permit applicant is harmed by the 2008 definition.[8]

A WoUS under 33 CFR §328.3(a)(4) (as of the date of this document) includes:

> "*All impoundments of waters otherwise defined as waters of the United States under the definition;" and 328.3(a)(7) "Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(l)-(6) of this section. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.*"

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[2] EPA 2008, pp. 6-7.

[3] "Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States," http://water.epa.gov/lawsregs/guidance/wetlands/upload/2008_12_3_wetlands_CWA_Jurisdiction_Following_Rapanos120208.pdf

[4] 33 CFR §328.4(1) and §328.4(2).

[5] EPA 2008, p. 8.

[6] USACE 1987.

[7] USACE 2008.

[8] EPA 2008.

Section 401 of the Clean Water Act and Porter-Cologne—RWQCB Jurisdiction

Section 401 of the CWA requires that applicants for a federal permit for activities that involve a discharge to Waters of the United States provide the federal permitting agency a certification from the state in which the discharge is proposed, showing that the discharge would comply with the applicable provisions under the Federal Clean Water Act. Therefore, in California, before the USACE would issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification or waiver from the RWQCB.

The RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, within any region that could affect the water of the state,"[9] pursuant to provisions of the state Porter-Cologne Act. Waters of the State of California (WoS) are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state."[10]

Under Section 401 of the CWA, the RWQCB regulates, at the state level, all activities that are regulated at the federal level by the USACE. Under the Porter-Cologne Act, the RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into waters of the state that are not regulated by the USACE because of a lack of connectivity with a navigable water body or lack of an Ordinary High Water Mark (OHWM).

Section 1600 et seq. of the California Fish and Game Code—CDFG Jurisdiction

The California Department of Fish and Game (CDFG) exercises jurisdiction over rivers, streams, and lakes pursuant to Fish and Game Code §1600 *et seq*. Project proponents are required to notify CDFG prior to any project that would substantially divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake in California. A "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supports fish or other aquatic life (14 Cal. Code Reg. §1.72). Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFG jurisdiction. CDFG has interpreted the term "streambed" to encompass all portions of the bed, banks, and channel of any stream, including intermittent and ephemeral streams, extending laterally to the upland edge of riparian vegetation. Altered or artificial channels valuable to fish and wildlife are subject to CDFG jurisdiction. The CDFG also has jurisdiction over dry washes that carry water ephemerally during storm events. Preliminary notification and project review generally occur during the environmental process.

When an existing fish or wildlife resource may be substantially adversely affected, CDFG is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project.

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[9] California Water Code 13260[a].

[10] California Water Code 13050[e].

METHODOLOGY

Literature Search

Prior to visiting the site, records (maps, databases, reports) that would aid in the identification of potential wetlands and/or jurisdictional waters were reviewed. Maps reviewed included the USGS 7.5’ El Centro Topographic Quadrangle, aerial photos and regional maps,[11] National Wetlands Inventory,[12] and the NRCS Web Soil Survey.[13] To detect known occurrences of wetland indicator or special-status species, additional databases were queried including the California Natural Diversity Database,[14] Calflora,[15] California Native Plant Link Exchange,[16] Online CNPS Inventory of Rare and Endangered Plants, 8th Edition,[17] and the Consortium of California Herbaria.[18] Additionally the Draft Biological Resources Technical Report[19] and the Morning Star Mitigated Negative Declaration[20] was also reviewed to assess vegetation associations and dominant plants present at the site and existing conditions for biological resources.

Field Investigation

On May 30, 2012, the project site was visited and assessed for potential wetland areas by UltraSystems’ biologists Dr. Elizabeth Kempton and Mrs. Joyce Mak. Habitat areas with the potential to be wetlands were evaluated using USACE manuals: *Corps of Engineers Wetlands Delineation Manual*,[21] and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*[22] Dominant vegetation was identified using taxonomic keys in the *Jepson Manual, Second Edition*,[23] which were cross-referenced to taxonomic names used in the National Wetlands Plant List.[24] Munsell Soil Color Charts[25] were used to assist with soil identification. Drainages were examined for the presence of a bed, bank, ordinary high water mark, and a number of other features in accordance with the USACE manuals. A standard field form was used to record data in the field (Appendix B: Standard Field Form).

Impact Analysis

Impacts to jurisdictional drainages and the resources associated with those drainages were accurately calculated utilizing Geographic Information Systems (GIS) software. The areas of impacts (temporary and permanent) were calculated based on spatial overlap of the shapefiles of (1) the most recent Project design plans, and (2) the boundary of jurisdictional limits and associated resources. The acreages of temporary and permanent impacts correspond to the temporary and permanent disturbance areas delimited in the most recent Project design plans. Final acreages of impact areas were exported in tabular format from GIS software based on the final project design.

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[11] Google Earth 2012.
[12] USFWS 2012.
[13] NRCS 2012b.
[14] CNDDB 2012.
[15] Calflora 2012.
[16] CNPLX 2012.
[17] CNPS 2012.
[18] CCH 2012.
[19] UltraSystems 2010.
[20] Holt Group 2005.
[21] USACE 1987.
[22] USACE 2008.
[23] Baldwin et al. 2012
[24] USACE 2012.
[25] Kollmorgen Corporation 1975.

RESULTS

Vegetation

Vegetation present within the project site and vicinity is primarily that of chenopod-saltbush scrub. At the time of the jurisdictional delineation the entire project site had been graded and most of the vegetation had been removed; please refer to the Biological Assessment[26] for a description of the vegetation and a list of plants that depict the environmental baseline. Plants within potential wetlands within the site were avoided by initial grading activities, and were characterized on field forms (Appendix B).

Soils

According to the (U.S. Department of Agriculture) National Resource Conservation Service (NRCS) Soil Survey [27] two soil types are expected to occur within the Project area, as shown in **Table 1**, Project Area Soils. Although soils identified within the project site are not classified as hydric by the NRCS [28], the USACE criteria for wetland soils were met (Appendix B).

Table 1: Project Area Soils

Soil Map Unit Name	Rating
Holtville Silty Clay, Wet	Not Hydric
Imperial-Glenbar Silty Clay Loams, Wet, 0 to 2 Percent Slopes	Not Hydric

Hydrology

The project is located in the Brawley Watershed, which primarily receives water from storm water drains and associated irrigation delivered to the Imperial Valley basin for agricultural uses.

Within the boundary of the project there is one man-made ditch/drainage that exhibits hydrological characteristics (Figure 3, Jurisdictional Delineation). The drain is named Dahlia Drain No. 8 and is managed by the Imperial Irrigation District (IID). Water conveyed through Dahlia Drain No. 8 is mostly storm water. Via a series of IID channels, Dahlia Drain No. 8 ultimately discharges to the New River and/or the Alamo River. Hydrology was categorized for this drainage as described in Appendix B.

Nearby water features that were outside of the project boundary were excluded from analysis in this report, as they are not within the anticipated impact are of the project. These include another irrigation channel managed by the IID (called Dahlia Lateral 8) and two irrigation ponds located immediately north of the project boundary (Figure 3).

Jurisdictional Determination

The Imperial Holiday Inn Project area contains one drainage, called Dahlia Drain No. 8, which meets all of the USACE criteria for a wetland (i.e., vegetation, soils, hydrology; Appendix B, Standard Field Form). Based on the requirements of applicable laws (see *Regulatory Framework*), the jurisdictional limits of this drainage area comprise approximately 0.40 acre, as shown in **Figure 3**, Jurisdictional Delineation, and in **Table 2**, Summary of Jurisdictional Areas. The limits for all jurisdictional areas are

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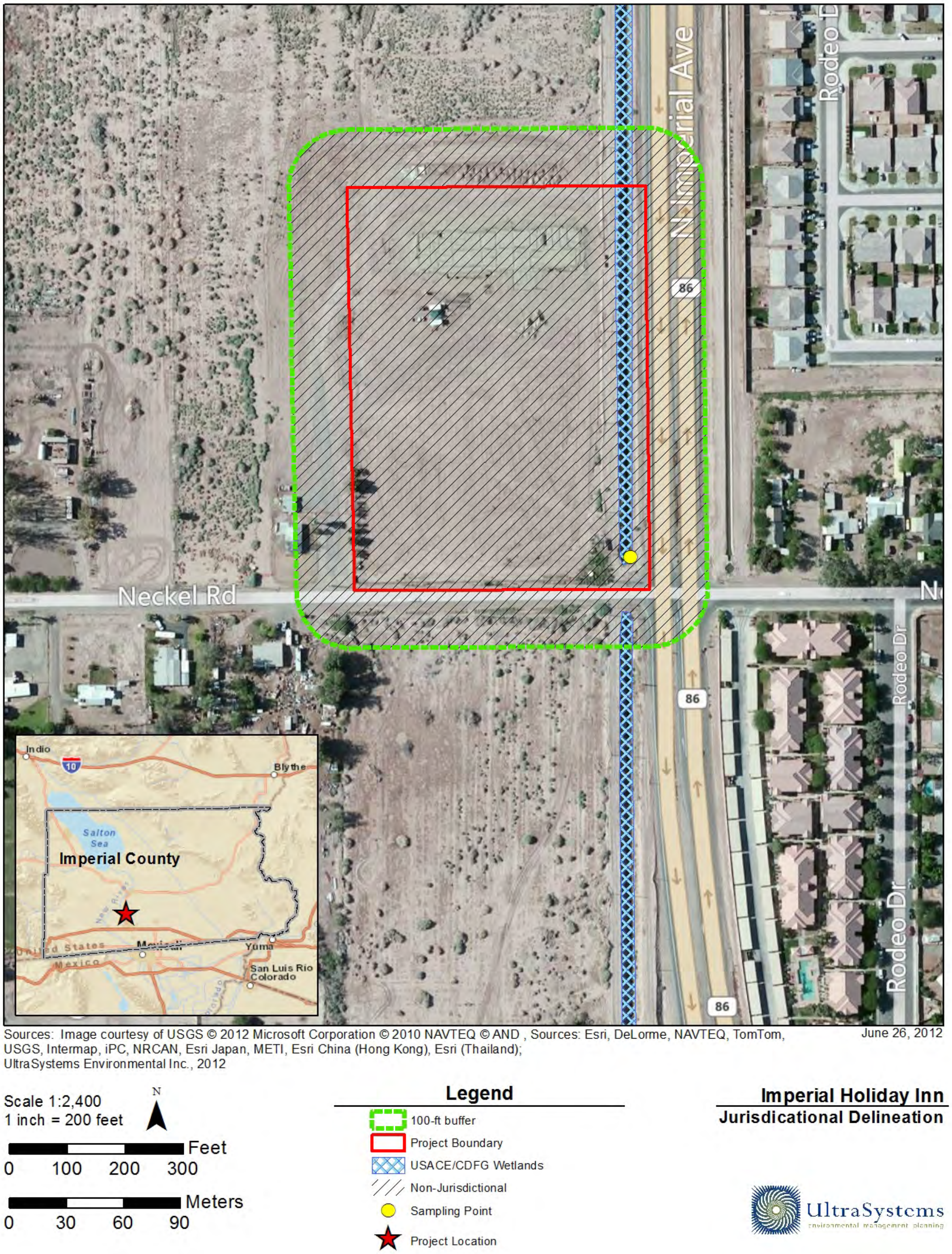
[26] UltraSystems 2010.

[27] NRCS 2012b.

[28] NRCS 2012a.



Sources: Image courtesy of USGS © 2012 Microsoft Corporation © 2010 NAVTEQ © AND , Sources: Esri, DeLorme, NAVTEQ, TomTom, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand); UltraSystems Environmental Inc., 2012

Figure 3. Jurisdictional Delineation

Table 2: Summary of Jurisdictional Areas

Drainage	USACE Jurisdictional Areas (acres)	CDFG Jurisdictional Areas (acres)	Colorado River RWQCB Jurisdictional Areas (acres)
Dahlia Drain 8 (Permanent Impacts)	0.40	0.40	0.40
Dahlia Drain 8 (Temporary Impacts)	0	0	0
Total	0.40	0.40	0.40

the same, as the area immediately adjacent to the drainage is graded, and therefore does not support riparian-wetland vegetation.

IMPACT ASSESSMENT AND POTENTIAL PERMITTING REQUIREMENTS

The proposed Imperial Holiday Inn Project will result in permanent impacts; no temporary impacts are anticipated at this time. Permanent impacts are anticipated based on the current project plans, which show that landscaping may be installed within the drainage. Temporary impacts may include temporary removal of native vegetation (i.e., if followed by restoration) or ground disturbances due to adjacent activities. The following is a description of the expected acreages of temporary and permanent impacts to drainages per applicable jurisdiction.

United States Army Corps of Engineers

Section 404 Permit

There are an estimated 0 acres of temporary impacts and 0.40 acre of permanent impacts to WoUS, subject to USACE jurisdiction. Impacts to these areas will require the submittal of an application to the United States Army Corps of Engineers to receive a Section 404 Permit under the Clean Water Act.

Colorado River Regional Water Quality Control Board

401 Water Quality Certification

There are an estimated 0 acres of temporary impacts and 0.40 acre of permanent impacts to WoUS subject to the Colorado River Regional Quality Board's jurisdiction. Impacts to these areas will require the submittal of an application to the Colorado River Regional Water Quality Control Board to receive a 401 Water Quality Certification under the Clean Water Act.

Waste Discharge Requirement Permit

The project plans show a combined impact of 0 acres of temporary impacts and 0.40 acre of permanent impacts to WoS. These impacts will require submittal of an application for Waste Discharge Requirement Permit under the Porter-Cologne Act from the Colorado River Regional Water Quality Control Board.

California Department of Fish and Game

1602 Streambed Alteration Agreement

There are an estimated 0 acres of temporary impacts and 0.40 acre of permanent impacts to WoS, subject to state jurisdiction. Impacts to these areas will require submittal of a Notification for a 1602 Streambed Alteration Agreement from the California Department of Fish and Game.

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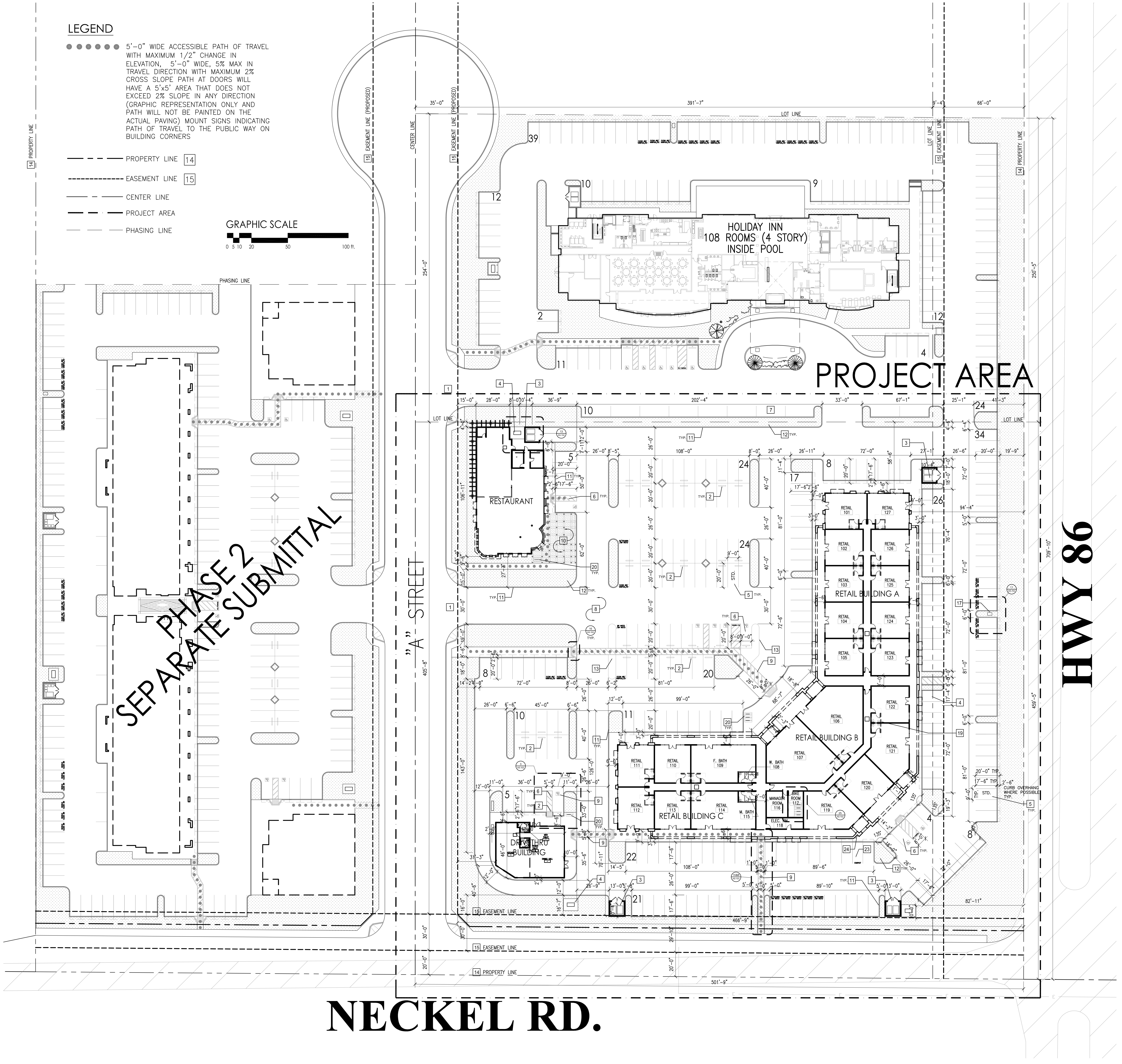
APPENDIX A: SITE PLAN



LEGEND

● ● ● ● ● ● 5'-0" WIDE ACCESSIBLE PATH OF TRAVEL WITH MAXIMUM 1/2" CHANGE IN ELEVATION, 5'-0" WIDE, 5% MAX IN TRAVEL DIRECTION WITH MAXIMUM 2% CROSS SLOPE PATH AT DOORS WILL HAVE A 5'x5' AREA THAT DOES NOT EXCEED 2% SLOPE IN ANY DIRECTION (GRAPHIC REPRESENTATION ONLY AND PATH WILL NOT BE PAINTED ON THE ACTUAL PAVING) MOUNT SIGNS INDICATING PATH OF TRAVEL TO THE PUBLIC WAY ON BUILDING CORNERS

PROPERTY LINE 14
EASEMENT LINE 15
CENTER LINE
PROJECT AREA
PHASING LINE

GRAPHIC SCALE
0 5 10 20 50 100 ft.

SITE PLAN
SCALE: 1/32" = 1'-0"

SITE PLAN NOTES

1. CIVIL PLANS TO PROVIDE HORIZONTAL CONTROL FOR ALL PARKING AREAS AND BUILDING PAD. SEE CIVIL SPECIFICATIONS FOR ADDITIONAL INFORMATION AS MAY BE REQUIRED TO ESTABLISH LOCATION AND CONFIGURATION FOR ALL LANDSCAPE PLANTERS, WALKS, CURBS, GUTTERS, AND ALL DRAINAGE DEVICES INCLUDING PAVING FOR THE PROJECT SITE.

2. DETECTABLE WARNINGS WILL BE INSTALLED AT THE ACCESSIBLE PATH INTERSECTION WITH VEHICULAR PATHS

3. ALL INDICATED BOUNDARY, AND EXISTING SITE AND SIDEWALK CONDITIONS WERE OBTAINED FROM A SURVEY PERFORMED BY CIVIL ENGINEER. SEE CIVIL PLANS.

4. BEFORE COMMENCEMENT OF WORK, CONTRACTOR TO CONTACT ALL GOVERNMENT AGENCIES AND UTILITY COMPANIES. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND SERVICES PRIOR TO ANY SUBSURFACE EXCAVATION AND SHALL PROTECT ALL EXISTING UNDERGROUND SERVICES.

5. ALL SURFACE WATER TO DRAIN AWAY FROM BUILDING AND DRIVEWAY TO ALLEY OR STREET OR PUBLIC STORM DRAIN SYSTEM.

6. PRIOR TO CONSTRUCTION, COORDINATE WITH UTILITY COMPANIES AND AGENCIES ON WORK PERTAINING TO SERVICES SUCH AS CABLE TV, ELECTRIC, TELEPHONE, GAS, WATER SEWER FROM SOURCE OF SERVICES TO BUILDING HOOK-UPS.

7. FOR EXISTING SITE CONDITIONS, SEE CIVIL PLANS.

FIRE DEPARTMENT NOTES

1. BUILDING ADDRESS NUMBERS SHALL BE PROVIDED AND MAINTAINED SO AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET FRONTING OF THE PROPERTY. THE NUMBERS SHALL BE A MINIMUM 3" HIGH, 1" WIDE WITH A 3/8" STROKE. FOR BUILDING SET BACK MORE THAN 150FT FROM THE STREET, THE NUMBERS SHALL BE A MINIMUM 5", 2" WITH A 1/2" STROKE. (CFC: CH5, SEC 505.1)

2. THE INSPECTION, HYDROSTATIC TEST AND FLUSHING OF THE UNDERGROUND FIRE PROTECTION PIPING SHALL BE WITNESSED BY AN AUTHORIZED FIRE DEPARTMENT REPRESENTATIVE AND NO UNDERGROUND PIPING OR THRUST BLOCKS SHALL BE COVERED WITH EARTH OR HIDDEN FROM VIEW UNTIL THE FIRE DEPARTMENT REPRESENTATIVE HAS BEEN NOTIFIED AND GIVEN NOT LESS THAN 48 HOURS IN WHICH TO INSPECT SUCH INSTALLATIONS. (CFC: CH 9, SEC. 901.5)

3. PROVIDE AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM. PLANS SHALL BE SUBMITTED TO THE SPRINKLER PLAN CHECK UNIT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. (CFC: CH 9, SEC 903)

4. DUMPSTERS AND CONTAINERS WITH AN INDIVIDUAL CAPACITY OF 1.5 CUBIC YARDS OR MORE SHALL NOT BE STORED IN BUILDING OR PLACED WITHIN 5FT OF COMBUSTIBLE WALLS, OPENINGS OR COMBUSTIBLE ROOF EAVES, UNLESS AREA CONTAINING DUMPSTERS OR CONTAINERS ARE PROTECTED BY AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM. (CFC: CH 3, SEC 304.3.3)

5. PROVIDE AN APPROVED FIXED AUTOMATIC FIRE EXTINGUISHING SYSTEM TO PROTECT VENTILATING HOODS, DUCTS AND COOKING APPLIANCES. CFC ARTICLE 10, SECTION 1005.2.

KEYNOTES

1	ENTRY AREA SLOPE NOT TO EXCEED 2% IN ANY DIRECTION
2	WHEEL STOP 24/AS103
3	TRASH ENCLOSURE 13/AS102
4	TRANSFORMER (SEE MEP)
5	9' X 20' MIN. STANDARD PARKING SPACE
6	9' X 20' MIN. ACCESSIBLE PARKING SPACE 3/AS102
7	9' X 24' MIN. PARALLEL PARKING SPACE
8	PARKING PAVEMENT
9	PATH STRIPING
10	CONCRETE HARDSCAPE
11	CAST IN PLACE CURB SEE CIVIL, AND NOTE #2 8/AS102
12	LANDSCAPE (SEE LANDSCAPE SHEETS)
13	ZERO CURB
14	PROPERTY LINE (SEE CIVIL FOR DIMENSION AND BEARING)
15	EASEMENT LINE (SEE CIVIL FOR DIMENSION AND BEARING)
16	DESIGNATED PARKING SPACE (LOW- EMITTING, FUEL EFFICIENT AND CARPOOL/VANPOOL VEHICLES) 9' x 24' MIN. 11/AS102
17	ELEC. CAR CHARGING STATION 11/AS102
18	COLORED CONCRETE
19	BIKE LOCKER (LONG TERM BIKE PARKING) 25/AS102
20	BIKE RACK (SHORT TERM BIKE PARKING) 3/AS102
21	BLOCK WALL (SEE CIVIL FOR DETAILS)
22	SITE PARKING LIGHTS (SEE MEP FOR DETAILS)
23	8'-6"x 18'-6" COMPACT PARKING SPACES
24	GAS METER (SEE MEP FOR MORE INFO)

C D A
Creative Design Associates, Inc.
17528 East Rowland Street
City of Industry, CA 91748
O>626.913.8101
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Architecture - Interior Design
Planning

Project:
IMPERIAL CENTER (PHASE I MODIFICATIONS)
HWY 86 & NECKEL RD.
CITY OF IMPERIAL, CA 92251

Client:
OASIS GROWTH PARTNER, LLC

2275 HUNTINGTON DR, SUITE 534
SAN MARINO, CA 91108

Stamp:
YU-WU CHEN
No. C-25837
REN. 07-31-11

Drawing Title:
SITE PLAN

CDA Project No. 1102
Date: MARCH 23, 2012
Phase: 1ST BUILDING SUBMITTAL
Checked By: EC
Drawn By: KP
Project No.:
Reference:
Revisions:

Drawing No.:
AS-101

APPENDIX B: STANDARD FIELD FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Imperial Holiday Inn City/County: Imperial/Imperial Sampling Date: 5/30/12
Applicant/Owner: Oasis Growth Partners, LLC State: CA Sampling Point: ______
Investigator(s): E.Kempton, J. Mak Section, Township, Range: S7 T15S R14E
Landform (hillslope, terrace, etc.): drainage ditch Local relief (concave, convex, none): concave Slope (%): 0-5 in ditch, 40-90 on side banks
Subregion (LRR): LRR D Lat: 1894127.33 Long: 6770329.90 Datum: NAD 83
Soil Map Unit Name: Imperial-Glenbar Silty Clay Loams NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)
Are Vegetation x, Soil x, or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes X No ______
Are Vegetation ______, Soil x, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No ______	**Is the Sampled Area within a Wetland?** **Yes** X **No** ______
Hydric Soil Present?	Yes x	No ______	
Wetland Hydrology Present?	Yes x	No ______	

Remarks:
Wetland area corresponds to Imperial Irrigation Drainage ditch, and is not concrete lined. Only one sampling point, characteristic of the entire wetland, was selected (see attached map).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0%	= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	
Herb Stratum (Plot size: 2x2ft)			
1. Distichlis spicata	45%	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	45%	= Total Cover	
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	0%	= Total Cover	

% Bare Ground in Herb Stratum 55% % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	45	x 2 =	90
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	45	(A)	90 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

- x Dominance Test is >50%
- x Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** x **No** ______

Remarks:
Sample plot on east side of ditch. Distichlis spicata (salt grass) appearing to be a monoculture on east side of bank, and is also the most dominant on west side of bank. Vegetation nearly absent in the inundated area of the ditch. West side of bank with other shrubs, including alkaline/salt loving plants Atriplex spp. and Pluchea seriacea, both present at very low percent cover. Distichlis spicata is also characteristic of alkaline/salt desert basin floors and playas, and likely established in this density due to the alteration of hydrology associated with the IID drainage flows.

SOIL

Sampling Point: ___________

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3/4	10YR 4/3	100	none				silty clay	Soil altered/disturbed by man-made
3/4-20	7.5YR 5/4	100	none				silty clay	ditch and Imperial Irrigation
								District water flows and does not
								directly correspond to description of
								NRCS mapping unit #115.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- x Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: n/a

Depth (inches): ___________

Hydric Soil Present? Yes x **No** ______

Remarks:
No soil indicators above present due to naturally problematic soil (i.e., moderate to highly alkaline; pH not taken, alkaline conditions evident due to dominant presence of chenopods and salt grass, alkalinity also evident based on Imperial Valley basin floor location, known drainage of the Salton Sea). Meets criteria for problematic soils in the regional supplement on the basis of alkalinity (p.99, 4b.1) and ponding/flooding (p.101, 4e).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- x Surface Water (A1)
- x High Water Table (A2)
- x Saturation (A3)
- x Water Marks (B1) (**Nonriverine**)
- x Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- x Surface Soil Cracks (B6)
- x Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- x Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- x Water Marks (B1) (**Riverine**)
- x Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- x Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- x Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- x FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes x No ______ Depth (inches): ___________

Water Table Present? Yes x No ______ Depth (inches): ___________

Saturation Present? (includes capillary fringe) Yes x No ______ Depth (inches): ___________

Wetland Hydrology Present? Yes x **No** ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
aerial photographs at various times of the year and previous site inspections for biological assessments

Remarks:
Data indicates (aerial photographs, previous site inspections) that the drainage is inundated at most times of the year. At time of field survey depth of surface water was approximately 12 inches.

APPENDIX D

Climate Change Analysis

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UltraSystems
environmental management planning

MEMORANDUM

Date: September 24, 2012

To: Daniel Chiu, Oasis Growth Partners, LLCARC-1 Limited Partnership

From: Benjamin Wong, UltraSystems Environmental Incorporated

Subject: Climate Change Analysis for Holiday Inn Hotel and Resort, Imperial, California

Oasis Growth Partners, LLC (San Marino, California) is proposing to develop the "Alliance Regional Center" on a 25-acre site at the northwest corner of the intersection of Neckel Road and State Route 86 (North Imperial Avenue) in Imperial, California.[1] The project will include a Holiday Inn hotel, two restaurants, and an office building.

Planned elements of Phase I of the Alliance Regional Center[2] Project will develop 8 acres. The project will include development of a 108-room, 4-story hotel, a fast food restaurant with a drive-through, a quality restaurant, and one 10,000-square foot office building. In addition, the project's utility lines will be connected with existing utility lines across State Route 86 by jack-and-bore tunneling beneath the roadway. A new lift station will also be built, at an as yet undetermined location on the site. Access to the Phase I development will be via a new north-south street (called "A Street"), which will form a tee intersection with Neckel Road. UltraSystems assumed that construction would start in January 2011 and that the Project would be operational by December 1, 2012.

UltraSystems Environmental Incorporated (UltraSystems) recently prepared an air quality technical study[3] to support clearance of the project under the California Environmental Quality Act (CEQA). CEQA's guidelines were recently changed to require evaluation of climate changes impacts resulting from new projects. These evaluations are to be prepared independently of air quality studies.

UltraSystems was contracted by Oasis Growth Partners, LLCARC-1 Limited Partnership to prepare a technical study upon which the CEQA document's climate change section(s) can be based. In particular, our assignment was to:

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[1] "Alliance Regional Center." ARC Booklet EN 20100525. Oasis Growth Partners, LLC, San Marino, California.

[2] Phase II is outside the scope of this report.

[3] Rogozen, M. and L. Luu, 2012. *Air Quality Analysis for Holiday Inn Hotel & Resort, City of Imperial, California*. Prepared by UltraSystems Environmental Incorporated for Oasis Growth Partners, LLCARC-I Limited Partnership, San Marino, California (September).

- Calculate annual emissions of the principal greenhouse gases, which are carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), from the start of construction to the final build-out year. From the individual species data, calculate carbon dioxide equivalent (CO_2e) emissions (defined below) for each year.
- Review local and regional climate action plans (if any) to determine whether the project will further or conflict with them, or with state laws such as the California Global Warming Solutions Act of 2006 (AB 32).
- Recommend mitigation measures (beyond those integral to project design) for greenhouse gas (GHG) emissions from the project.
- Prepare this report.

CLIMATE CHANGE AND GREENHOUSE GASES

If the earth had no atmosphere, almost all of the energy received from the sun would be re-radiated out into space. Our atmosphere helps retain a major portion of the solar radiation through "the greenhouse effect." Short-wavelength solar radiation passes through the atmosphere and is absorbed by the earth's surface. The earth re-radiates the heat up into the atmosphere, at a longer wavelength. GHGs in the atmosphere absorb the longer-wavelength heat and then radiate it back downward. In general, as concentrations of GHGs in the atmosphere increase, global temperatures increase.

For many centuries, atmospheric GHG concentrations were relatively stable. As combustion of fossil fuels for industrial activities and transportation increased, concentrations of CO_2 in the atmosphere increased dramatically. The result has been an observed increase in average global temperature. The current consensus among scientists is that continued increases in atmospheric GHG will not only raise the average global temperature, but will also lead to changes in climate. While air temperatures will mainly rise, temperatures may decrease in some areas. Rainfall distribution and storm patterns will be affected. As polar ice melts, sea levels may rise, inundating coastal areas.

GHGs are defined under the California Global Warming Solutions Act of 2006 (AB 32) as CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6). Associated with each GHG species is a "global warming potential" (GWP), which is defined as the ratio of degree of warming to the atmosphere that would result from the emission of one mass unit of a given GHG compared with one equivalent mass unit of CO_2 over a given period of time. By this definition, the GWP of CO_2 is always 1. The GWPs of methane and N_2O are 21 and 310, respectively.[4,5] "Carbon dioxide equivalent" (CO_2e) emissions are calculated by weighting each GHG compound's emissions by its GWP and then summing the products.

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[4] *California Climate Action Registry General Reporting Protocol. Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1* (January 2009).

REGULATORY BACKGROUND

Federal Climate Change Regulation

The federal government has been involved in climate change issues at least since 1978 when Congress passed the National Climate Program Act (92 Stat. 601), under authority of which the National Research Council prepared a report predicting that additional increases in atmospheric CO_2 would lead to non-negligible changes in climate. At the "Earth Summit" in 1992 in Rio de Janeiro, President George H.W. Bush signed the United Nations Framework Convention on Climate Change (UNFCCC), a nonbinding agreement among 154 nations to reduce atmospheric concentrations of carbon dioxide and other greenhouse gases. The treaty was ratified by the U.S. Senate. However, when the UNFCCC signatories met in 1997 in Kyoto, Japan, and adopted a protocol that assigned mandatory targets for industrialized nations to reduce greenhouse gas emissions, the U.S. Senate expressed its opposition to the treaty. The Kyoto Protocol was not submitted to the Senate for ratification.

In *Massachusetts et al. v. Environmental Protection Agency et al.* [549 U.S. 497 (2007)], the U.S. Supreme Court ruled that CO_2 was an air pollutant under the Clean Air Act, and that consequently, the U.S. Environmental Protection Agency (USEPA) had the authority to regulate its emissions. The Court also held that the Administrator must determine whether emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On April 24, 2009, the USEPA published its intention to find that (1) the current and projected concentrations of the mix of six key greenhouse gases—CO_2, CH_4, N_2O, HFCs, PFCs and SF_6—in the atmosphere threaten the public health and welfare of current and future generations, and that (2) the combined emissions of GHG from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key greenhouse gases and hence to the threat of climate change (74 Fed. Reg. 18886). These findings are required for subsequent regulations that would control GHG emissions from motor vehicles.

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[5] These values were reported by the Intergovernmental Panel on Climate Change in 1995. Some GWP values have been updated since 1995 on the basis of improved calculation methods. The 1995 values continue to be used by international convention to maintain consistency in GHG reporting.

California Climate Change Regulation

Executive Order S-3-05 (GHG Emissions Reductions). Executive Order #S-3-05, signed by Governor Arnold Schwarzenegger on June 1, 2005, calls for a reduction in GHG emissions to 1990 levels by 2020 and for an 80% reduction in GHG emissions to below 1990 levels by 2050.

The California Global Warming Solutions Act of 2006 (AB 32). In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Global Warming Solutions Act of 2006 (Health and Safety Code § 38500 et seq.), into law. AB 32 was intended to effectively end the scientific debate in California over the existence and consequences of global warming. In general, AB 32 directs the California Air Resources Board (CARB) to do the following:

- On or before June 30, 2007, publicly make available a list of discrete early action GHG emission reduction measures that can be implemented prior to the adoption of the statewide GHG limit and the measures required to achieve compliance with the statewide limit;
- By January 1, 2008, determine the statewide levels of GHG emissions in 1990, and adopt a statewide GHG emissions limit that is equivalent to the 1990 level (an approximately 25% reduction in existing statewide GHG emissions);
- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures;
- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020, to become operative on January 1, 2012, at the latest. The emission reduction measures may include direct emission reduction measures, alternative compliance mechanisms, and potential monetary and non-monetary incentives that reduce GHG emissions from any sources or categories of sources as CARB finds necessary to achieve the statewide GHG emissions limit; and
- Monitor compliance with and enforce any emission reduction measure adopted pursuant to AB 32.

On December 11, 2008, the CARB approved the *Climate Change Scoping Plan*[6] pursuant to AB 32. The Scoping Plan recommends a wide range of measures for reducing GHG emissions, including (but not limited to):

- Expanding and strengthening of existing energy efficiency programs;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a GHG emissions cap-and-trade program;

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[6] California Air Resources Board, *Climate Change Scoping Plan, a Framework for Change, Pursuant to AB32, the California Global Warming Solutions Act of 2006* (December 11, 2008).

- Establishing targets for transportation-related GHG emissions for regions throughout the state, and pursuing policies and incentives to meet those targets;
- Implementing existing state laws and policies, including California's clean car standards, goods movement measures and the Low Carbon Fuel Standard; and
- Targeted fees to fund the state's long-term commitment to administering AB 32.

Executive Order S-01-07 (Low Carbon Fuel Standard). Executive Order #S-01-07 (January 18, 2007) establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020 through establishment of a Low Carbon Fuel Standard. Carbon intensity is the amount of CO_2e per unit of fuel energy emitted from each stage of producing, transporting and using the fuel in a motor vehicle. On April 23, 2009 the Air Resources Board adopted a regulation to implement the standard.

Senate Bill 97. Senate Bill 97 was signed by the governor on August 24, 2007. The bill required the Office of Planning and Research (OPR), by July 1, 2009, to prepare, develop and transmit to the resources agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, including, but not limited to, effects associated with transportation or energy consumption. On April 13, 2009 OPR submitted to the Secretary for Natural Resources its proposed amendments to the State CEQA Guidelines for greenhouse gas emissions. The Resources Agency adopted those guidelines on December 30, 2009, and they became effective on March 18, 2010. The amendments treat GHG emissions as a separate category of impacts; i.e. they are not to be addressed as part of an analysis of air quality impacts.

Section 15064.4, which was added to the CEQA Guidelines, specifies how the significance of impacts from GHGs is to be determined. First, the lead agency should "make a good faith effort" to describe, calculate or estimate the amount of GHG emissions resulting from a project. After that, the lead agency should consider the following factors when assessing the impacts of the GHG emissions on the environment:

- The extent to which the project may increase or reduce GHG emissions, relative to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional or local plan for the reduction or mitigation of GHG emissions.

The Governor's Office of Planning and Research (OPR) asked the CARB to make recommendations for GHG-related thresholds of significance. On October 24, 2008, the CARB issued a preliminary draft staff proposal for *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California*

Environmental Quality Act.[7] After holding two public workshops and receiving comments on the proposal, CARB staff decided not to proceed with threshold development.[8] Quantitative significance thresholds, if any, are to be set by local agencies.

Senate Bill 375. Senate Bill 375 requires coordination of land use and transportation planning to reduce GHG emissions from transportation sources. Regional transportation plans, which are developed by metropolitan transportation organizations such as the Southern California Association of Governments (SCAG), are to include "sustainable community strategies" to reduce GHG emissions.

Title 24. The Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6, of the *California Code of Regulations*) were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Compliance with Title 24 will result in decreases in GHG emissions. The California Energy Commission adopted the 2008 changes to the Building Energy Efficiency Standards on April 23, 2008 with an aim to promote the objectives listed below.[9]

- Provide California with an adequate, reasonably-priced and environmentally-sound supply of energy.
- Respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its greenhouse gas emissions to 1990 levels by 2020.
- Pursue California energy policy that energy efficiency is the resource of first choice for meeting California's energy needs.
- Act on the findings of California's Integrated Energy Policy Report (IEPR) that Standards are the most cost effective means to achieve energy efficiency, expects the Building Energy Efficiency Standards to continue to be upgraded over time to reduce electricity and peak demand, and recognizes the role of the Standards in reducing energy related to meeting California's water needs and in reducing greenhouse gas emissions.
- Meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of state building codes.

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[7] California Air Resources Board. *Preliminary Draft Staff Proposal. Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act*. Planning and Technical Support Division, Sacramento, California (October 24, 2008).

[8] Personal communication from Douglas Ito, California Air Resources Board, Sacramento, California, to Michael Rogozen, UltraSystems Environmental Inc., Irvine, California. March 29, 2010.

[9] "2008 Building Energy Efficiency Standards." California Energy Commission, Sacramento, California. (http://www.energy.ca.gov/title24/2008standards/index.html). These became effective January 1, 2010.

- Meet the Executive Order in the Green Building Initiative to improve the energy efficiency of nonresidential buildings through aggressive standards.

The provisions of Title 24, Part 6 apply to all buildings for which an application for a building permit or renewal of an existing permit is required by law. They regulate design and construction of the building envelope, space-conditioning and water-heating systems, indoor and outdoor lighting systems of buildings, and signs located either indoors or outdoors. Title 24, Part 6 specifies mandatory, prescriptive and performance measures, all designed to optimize energy use in buildings and decrease overall consumption of energy to construct and operate residential and nonresidential buildings.[10] Mandatory measures establish requirements for manufacturing, construction and installation of certain systems; equipment and building components that are installed in buildings.

Local and Regional Climate Action Plans

Imperial County, the City of Imperial and the Imperial County Air Pollution Control District do not have formal plans or guidelines for reducing GHG emissions. In addition, there are no local quantitative thresholds of significance for GHG emissions.

PROJECT GREENHOUSE GAS EMISSION INVENTORY

Because greenhouse gas (GHG) emissions are a global concern, a GHG emission inventory in principle would include all emissions related in any way, directly or indirectly, to the project. To be comprehensive, for example, the inventory would include the GHG emissions generated during the cultivation, harvesting, cutting and transportation of the wood going into the buildings to be constructed. Because of the great uncertainty over the meaning of different levels of GHG emissions, compiling a comprehensive inventory is likely to be an inefficient use of resources. Instead, our approach has been to limit the analysis to those GHG emission sources over which the project has at least some control, and therefore the power to reduce them. The main two categories of GHG emissions analyzed were construction emissions and operational emissions. The following is a summary of the methods and results.

Construction Emissions

Emissions of CO_2 during construction were estimated using the California Emissions Estimator Model^{TM} (CalEEMod^{TM}), Version 2011.1.1. These emissions include GHG emissions from internal combustion engines from off-road construction equipment, as well as on-road vehicles (worker, vendor, and delivery trips). Construction equipment emissions were based on CalEEMod's default values for horsepower and load factors, which are from the CARB's OFFROAD2007 model. **Table 1** (Annual Greenhouse Gas Emissions During Construction)

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[10] *2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*, California Energy Commission, (December 2008).

summarizes the results. CalEEMod model printouts are in **Appendix A**. The year of highest construction-related GHG emissions would be 2012.

Table 1 – Annual Greenhouse Gas Emissions During Construction

Year	GHG Emissions Tonnes/Year[11]
2012 (Total)	325.02
2012 (Amortized)	10.83
Note: Construction GHG emissions are amortized over 30 years.	

Operational Emissions

Operation of the project at Phase I buildout (in 2012) will result in both direct and indirect emissions of GHG. Direct emissions result from on-site combustion processes, such as the use of gas stoves in the proposed restaurants, and from use of motor vehicles by office building commuters and hotel guests. The principal indirect source of GHG is use of electricity by the hotel, the restaurants, and the office buildings; these emissions are indirect because they occur where the electricity is generated, rather than where it is used. The generation sites may be far from the Imperial area. Because climate change is a global problem, the off-site sources need to be taken into account.

Emissions of CO_2 during operations were estimated using CalEEMod, and include motor vehicle trips, solid waste, water, wastewater, space heating, and electricity consumption. **Table 2** (Annual GHG Emissions, 2012) summarizes the amortized construction GHG emissions in addition to the operational emissions.

IMPACT ANALYSIS

UltraSystems used the factors from Section 15064.4(b) of the recently amended CEQA Guidelines to assess the significance of impacts from greenhouse gas emissions on the environment.

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[11] A tonne, also called a “metric ton,” is defined as 1,000 kilograms, which is equivalent to 2,205 pounds.

Table 2 – Annual GHG Emissions, 2012

Annual Emissions in 2015 (tonnes)					
Emission Source		**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Construction[a]		10.81	0.00	0.00	10.83
Operations	Area	0.00	0.00	0.00	0.00
	Energy	1,880.50	0.04	0.20	1,887.35
	Mobile	870.87	0.06	0.00	872.10
	Waste	12.00	0.71	0.00	2.90
	Water	22.54	0.08	0.00	25.01
Totals		**2,796.72**	**0.89**	**0.20**	**2,798.19**

Note: Proposed project is operational in 2012.
[a] Amortized over 30 years per SCAQMD Interim CEQA GHG Significance Threshold.

Source: UltraSystems Environmental Inc. with CalEEMod (Version 2011.1.1)

Increase in Greenhouse Gas Emissions

As seen in **Table 2**, the project will generate about 2,800 tonnes per year of GHG emissions. How much of an increase in GHG emissions this represents is uncertain. Some of the emissions from commercial energy use (e.g. restaurant patronage) would occur elsewhere if the project is not built. Because climate change is a global issue, it does not matter where the emissions occur. Whether there would be a net increase in mobile source GHG emissions is also uncertain. We make the conservative assumption that the entire 2,800 tonnes per year are a net increase.

Comparison to a Significance Threshold

As of this writing, the lead agency (City of Imperial) has not adopted quantitative thresholds of significance for GHG emissions from residential and commercial projects. It is therefore not possible to compare the project's emissions to a lead agency threshold.

Compliance with Greenhouse Gas Reduction Plans

There are currently no regional or local climate action plans or general or specific plan provisions to reduce GHG emissions in the study area. The only applicable plan is the set of regulations to be developed under AB 32, which has a target of reducing GHG emissions to 1990 levels by 2020. The potential significance of emissions from the Holiday Inn project therefore depends upon the extent to which the project furthers or hinders implementation of AB 32.

The project's Phase I buildout will be complete by 2012. Essentially all the 2,800 tonnes per year of GHG emissions forecast for 2012 will also occur by and in 2020, including the amortized construction GHG emissions. Because increases in GHG must be offset for net emissions to decrease to 1990 levels by 2020, the project's GHG emissions are potentially significant.

MITIGATION MEASURES

The emissions estimates presented above assume no special architectural design features or operating characteristics, beyond those required by Title 24, which would reduce GHG emissions. The following is a list of project design features that will reduce GHG emissions beyond "business as usual" levels.

- **On-site bicycle lockers and/or racks.** Bicycle use produces no GHG emissions. Providing infrastructure that promotes bicycle use will encourage bike travel and help in reducing the use of automobiles.

- **Street tree planting.** Trees help in counteracting CO_2 emissions by absorbing CO_2 from the air. Trees also help in lowering air temperature by providing shade and transpiring water, thereby reducing building cooling loads during summers.

- **Shade tree planting in parking lots** to decrease cooling loads on cars, thereby reducing fuel consumption.

- **Public transit accessibility with transit turnouts and direct pedestrian access and bus stop improvements such as shelters, route information, benches and lighting.** Transit oriented development along with a pedestrian friendly environment will encourage the use of transit and help in reducing the use of automobiles. On the basis of passenger miles travelled, public transportation is more fuel efficient than use of private vehicles.

- **Pedestrian signalization and signage to improve pedestrian safety.** Providing infrastructure that facilitates a pedestrian friendly environment will encourage pedestrian travel and help in reducing the use of automobiles.

- **Roof material with a solar reflectance value meeting the EPA/DOE Energy Star® rating to reduce summer cooling needs.** The roof of a building acts as a large open space that directly absorbs solar heat and transfers this heat to the interior of the building. Hence, a roofing material with good solar reflectance decreases the amount of heat absorbed by the roof and helps in maintaining low interior temperatures, thereby reducing energy required to operate the HVAC system for cooling the building.

- **Built-in energy efficient appliances, where applicable.** Energy efficient appliances using advanced technology use 10 to 50 percent less energy than standard appliances. Decreased energy use in buildings greatly helps in reducing GHG emissions produced during energy generation, distribution and consumption.

- **Double-paned windows and low E-glass.** See discussion above.

- **Low energy parking lot and street lights (i.e. low-pressure sodium vapor).** Using energy efficient lighting will reduce consumption of electricity for lighting.

- **Energy efficient interior lighting.** A building's interior lighting system is both a dominant consumer of electrical energy and a major source of internal heat. In commercial buildings it normally accounts for more than 30% of the total electrical energy consumed. Using energy efficient lighting not only reduces consumption of electricity for lighting but also reduces cooling loads since less waste heat needs to be removed by the air conditioning system.

- **High efficiency gas/electric space heating.** Using energy efficient equipment will reduce consumption of electricity for heating.

- **Pedestrian and bicycle access from nearby residential neighborhoods.** The proposed project is a mixed used development with a variety of basic amenities such as schools, parks and retail spaces, within close proximity to residential land. Additionally, every effort has been made to provide a well planned infrastructure to promote a pedestrian and bicycle-friendly environment. All these measures will greatly help to promote pedestrian and bicycle travel for short everyday commuting trips in and around the project area, thereby reducing the use of automobiles.

APPENDIX A

CalEEMod MODELING OUTPUT FILES

5862 Imperial County Holiday Inn

Imperial County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Fast Food Restaurant w/o Drive Thru	0	1000sqft
Fast Food Restaurant with Drive Thru	0	1000sqft
High Turnover (Sit Down Restaurant)	0	1000sqft
Hotel	108	Room
Strip Mall	0	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Utility Company**	Imperial Irrigation District
Climate Zone	15	**Precipitation Freq (Days)**	12		

1.3 User Entered Comments

Project Characteristics -

Land Use - Square feet are assumed values in proposal. Unit amount is an assumed value in proposal.

Construction Phase - Construction schedule provided by client

Off-road Equipment - Equipment Type using Appendix D and made up schedule
Values from Appendix D

Off-road Equipment - Values obtained from CalEEMod Appendix D

Off-road Equipment - Values from CalEEMod Appendix D

Off-road Equipment - aa

Grading - CalEEMod default values

Architectural Coating - non-residential VOC's obtained from Frazee Paint

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2012	0.60	3.32	2.38	0.00	15.86	0.24	16.10	1.61	0.24	1.85	0.00	324.15	324.15	0.04	0.00	325.02
Total	**0.60**	**3.32**	**2.38**	**0.00**	**15.86**	**0.24**	**16.10**	**1.61**	**0.24**	**1.85**	**0.00**	**324.15**	**324.15**	**0.04**	**0.00**	**325.02**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2012	0.60	3.32	2.38	0.00	0.07	0.24	0.31	0.03	0.24	0.27	0.00	324.15	324.15	0.04	0.00	325.02
Total	**0.60**	**3.32**	**2.38**	**0.00**	**0.07**	**0.24**	**0.31**	**0.03**	**0.24**	**0.27**	**0.00**	**324.15**	**324.15**	**0.04**	**0.00**	**325.02**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.45	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.05	0.42	0.36	0.00		0.00	0.03		0.00	0.03	0.00	1,880.05	1,880.05	0.04	0.02	1,887.35
Mobile	1.30	4.96	10.21	0.01	236.12	0.14	236.25	23.50	0.14	23.64	0.00	870.87	870.87	0.06	0.00	872.10
Waste						0.00	0.00		0.00	0.00	12.00	0.00	12.00	0.71	0.00	26.90
Water						0.00	0.00		0.00	0.00	0.00	22.54	22.54	0.08	0.00	25.01
Total	**1.80**	**5.38**	**10.57**	**0.01**	**236.12**	**0.14**	**236.28**	**23.50**	**0.14**	**23.67**	**12.00**	**2,773.46**	**2,785.46**	**0.89**	**0.02**	**2,811.36**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.45	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.05	0.42	0.36	0.00		0.00	0.03		0.00	0.03	0.00	1,880.05	1,880.05	0.04	0.02	1,887.35
Mobile	1.30	4.96	10.21	0.01	236.12	0.14	236.25	23.50	0.14	23.64	0.00	870.87	870.87	0.06	0.00	872.10
Waste						0.00	0.00		0.00	0.00	12.00	0.00	12.00	0.71	0.00	26.90
Water						0.00	0.00		0.00	0.00	0.00	22.54	22.54	0.08	0.00	25.01
Total	**1.80**	**5.38**	**10.57**	**0.01**	**236.12**	**0.14**	**236.28**	**23.50**	**0.14**	**23.67**	**12.00**	**2,773.46**	**2,785.46**	**0.89**	**0.02**	**2,811.36**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Grading - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.07	0.00	0.07	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.07	0.52	0.32	0.00		0.03	0.03		0.03	0.03	0.00	47.52	47.52	0.01	0.00	47.64
Total	**0.07**	**0.52**	**0.32**	**0.00**	**0.07**	**0.03**	**0.10**	**0.03**	**0.03**	**0.06**	**0.00**	**47.52**	**47.52**	**0.01**	**0.00**	**47.64**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.78	0.00	0.78	0.08	0.00	0.08	0.00	0.88	0.88	0.00	0.00	0.88
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.78**	**0.00**	**0.78**	**0.08**	**0.00**	**0.08**	**0.00**	**0.88**	**0.88**	**0.00**	**0.00**	**0.88**

3.2 Grading - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.07	0.00	0.07	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.07	0.52	0.32	0.00		0.03	0.03		0.03	0.03	0.00	47.52	47.52	0.01	0.00	47.64
Total	**0.07**	**0.52**	**0.32**	**0.00**	**0.07**	**0.03**	**0.10**	**0.03**	**0.03**	**0.06**	**0.00**	**47.52**	**47.52**	**0.01**	**0.00**	**47.64**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.88	0.00	0.00	0.88
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.88**	**0.88**	**0.00**	**0.00**	**0.88**

3.3 Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.32	2.14	1.40	0.00		0.16	0.16		0.16	0.16	0.00	209.16	209.16	0.03	0.00	209.72
Total	**0.32**	**2.14**	**1.40**	**0.00**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**209.16**	**209.16**	**0.03**	**0.00**	**209.72**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.18	0.00	9.83	0.00	9.83	0.98	0.00	0.98	0.00	11.04	11.04	0.00	0.00	11.07
Total	**0.02**	**0.02**	**0.18**	**0.00**	**9.83**	**0.00**	**9.83**	**0.98**	**0.00**	**0.98**	**0.00**	**11.04**	**11.04**	**0.00**	**0.00**	**11.07**

3.3 Construction - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.32	2.14	1.40	0.00		0.16	0.16		0.16	0.16	0.00	209.16	209.16	0.03	0.00	209.72
Total	**0.32**	**2.14**	**1.40**	**0.00**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**209.16**	**209.16**	**0.03**	**0.00**	**209.72**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.04	11.04	0.00	0.00	11.07
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.04**	**11.04**	**0.00**	**0.00**	**11.07**

3.4 Paving - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.09	0.56	0.34	0.00		0.05	0.05		0.05	0.05	0.00	43.25	43.25	0.01	0.00	43.41
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.09**	**0.56**	**0.34**	**0.00**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**43.25**	**43.25**	**0.01**	**0.00**	**43.41**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.06	0.00	3.28	0.00	3.28	0.33	0.00	0.33	0.00	3.68	3.68	0.00	0.00	3.69
Total	**0.01**	**0.01**	**0.06**	**0.00**	**3.28**	**0.00**	**3.28**	**0.33**	**0.00**	**0.33**	**0.00**	**3.68**	**3.68**	**0.00**	**0.00**	**3.69**

3.4 Paving - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.09	0.56	0.34	0.00		0.05	0.05		0.05	0.05	0.00	43.25	43.25	0.01	0.00	43.41
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.09**	**0.56**	**0.34**	**0.00**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**43.25**	**43.25**	**0.01**	**0.00**	**43.41**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.68	3.68	0.00	0.00	3.69
Total	**0.01**	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.68**	**3.68**	**0.00**	**0.00**	**3.69**

3.5 Architectural Coating - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.08					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.55	2.55	0.00	0.00	2.56
Total	**0.09**	**0.03**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**2.55**	**2.55**	**0.00**	**0.00**	**2.56**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.04	0.02	0.00	1.08	0.00	1.08	0.11	0.00	0.11	0.00	5.13	5.13	0.00	0.00	5.13
Worker	0.00	0.00	0.02	0.00	0.83	0.00	0.83	0.08	0.00	0.08	0.00	0.93	0.93	0.00	0.00	0.94
Total	**0.00**	**0.04**	**0.04**	**0.00**	**1.91**	**0.00**	**1.91**	**0.19**	**0.00**	**0.19**	**0.00**	**6.06**	**6.06**	**0.00**	**0.00**	**6.07**

3.5 Architectural Coating - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.08					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.55	2.55	0.00	0.00	2.56
Total	**0.09**	**0.03**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**2.55**	**2.55**	**0.00**	**0.00**	**2.56**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.13	5.13	0.00	0.00	5.13
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.93	0.00	0.00	0.94
Total	**0.00**	**0.04**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.06**	**6.06**	**0.00**	**0.00**	**6.07**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.30	4.96	10.21	0.01	236.12	0.14	236.25	23.50	0.14	23.64	0.00	870.87	870.87	0.06	0.00	872.10
Unmitigated	1.30	4.96	10.21	0.01	236.12	0.14	236.25	23.50	0.14	23.64	0.00	870.87	870.87	0.06	0.00	872.10
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Fast Food Restaurant with Drive Thru	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Hotel	882.36	884.52	642.60	1,266,731	1,266,731
Strip Mall	0.00	0.00	0.00		
Total	882.36	884.52	642.60	1,266,731	1,266,731

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Fast Food Restaurant w/o Drive Thru	6.70	5.00	8.90	1.50	79.50	19.00
Fast Food Restaurant with Drive Thru	6.70	5.00	8.90	2.20	78.80	19.00
High Turnover (Sit Down Restaurant)	6.70	5.00	8.90	8.50	72.50	19.00
Hotel	6.70	5.00	8.90	19.40	61.60	19.00
Strip Mall	6.70	5.00	8.90	16.60	64.40	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	1,417.77	1,417.77	0.03	0.01	1,422.26
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	1,417.77	1,417.77	0.03	0.01	1,422.26
NaturalGas Mitigated	0.05	0.42	0.36	0.00		0.00	0.03		0.00	0.03	0.00	462.28	462.28	0.01	0.01	465.09
NaturalGas Unmitigated	0.05	0.42	0.36	0.00		0.00	0.03		0.00	0.03	0.00	462.28	462.28	0.01	0.01	465.09
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Fast Food Restaurant w/o Drive Thru	1.38755e+006	0.01	0.07	0.06	0.00		0.00	0.01		0.00	0.01	0.00	74.04	74.04	0.00	0.00	74.50
Fast Food Restaurant with Drive Thru	832530	0.00	0.04	0.03	0.00		0.00	0.00		0.00	0.00	0.00	44.43	44.43	0.00	0.00	44.70
High Turnover (Sit Down Restaurant)	1.38755e+006	0.01	0.07	0.06	0.00		0.00	0.01		0.00	0.01	0.00	74.04	74.04	0.00	0.00	74.50
Hotel	5.032e+006	0.03	0.25	0.21	0.00		0.00	0.02		0.00	0.02	0.00	268.53	268.53	0.01	0.00	270.16
Strip Mall	23200	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	1.24	1.24	0.00	0.00	1.25
Total		**0.05**	**0.43**	**0.36**	**0.00**		**0.00**	**0.04**		**0.00**	**0.04**	**0.00**	**462.28**	**462.28**	**0.01**	**0.00**	**465.11**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Fast Food Restaurant w/o Drive Thru	1.38755e+006	0.01	0.07	0.06	0.00		0.00	0.01		0.00	0.01	0.00	74.04	74.04	0.00	0.00	74.50
Fast Food Restaurant with Drive Thru	832530	0.00	0.04	0.03	0.00		0.00	0.00		0.00	0.00	0.00	44.43	44.43	0.00	0.00	44.70
High Turnover (Sit Down Restaurant)	1.38755e+006	0.01	0.07	0.06	0.00		0.00	0.01		0.00	0.01	0.00	74.04	74.04	0.00	0.00	74.50
Hotel	5.032e+006	0.03	0.25	0.21	0.00		0.00	0.02		0.00	0.02	0.00	268.53	268.53	0.01	0.00	270.16
Strip Mall	23200	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	1.24	1.24	0.00	0.00	1.25
Total		**0.05**	**0.43**	**0.36**	**0.00**		**0.00**	**0.04**		**0.00**	**0.04**	**0.00**	**462.28**	**462.28**	**0.01**	**0.00**	**465.11**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Fast Food Restaurant w/o Drive Thru	262000					151.04	0.00	0.00	151.51
Fast Food Restaurant with Drive Thru	157200					90.62	0.00	0.00	90.91
High Turnover (Sit Down Restaurant)	262000					151.04	0.00	0.00	151.51
Hotel	1.6216e+006					934.80	0.02	0.01	937.76
Strip Mall	156600					90.28	0.00	0.00	90.56
Total						**1,417.78**	**0.02**	**0.01**	**1,422.25**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Fast Food Restaurant w/o Drive Thru	262000					151.04	0.00	0.00	151.51
Fast Food Restaurant with Drive Thru	157200					90.62	0.00	0.00	90.91
High Turnover (Sit Down Restaurant)	262000					151.04	0.00	0.00	151.51
Hotel	1.6216e+006					934.80	0.02	0.01	937.76
Strip Mall	156600					90.28	0.00	0.00	90.56
Total						**1,417.78**	**0.02**	**0.01**	**1,422.25**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.45	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.45	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.05					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.40					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.45**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.05					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.40					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.45**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					22.54	0.08	0.00	25.01
Unmitigated					22.54	0.08	0.00	25.01
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Fast Food Restaurant w/o Drive Thru	0 / 0					0.00	0.00	0.00	0.00
Fast Food Restaurant with Drive Thru	0 / 0					0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	0 / 0					0.00	0.00	0.00	0.00
Hotel	2.73961 / 0.304401					22.54	0.08	0.00	25.01
Strip Mall	0 / 0					0.00	0.00	0.00	0.00
Total						**22.54**	**0.08**	**0.00**	**25.01**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Fast Food Restaurant w/o Drive Thru	0 / 0					0.00	0.00	0.00	0.00
Fast Food Restaurant with Drive Thru	0 / 0					0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	0 / 0					0.00	0.00	0.00	0.00
Hotel	2.73961 / 0.304401					22.54	0.08	0.00	25.01
Strip Mall	0 / 0					0.00	0.00	0.00	0.00
Total						**22.54**	**0.08**	**0.00**	**25.01**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					12.00	0.71	0.00	26.90
Unmitigated					12.00	0.71	0.00	26.90
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Fast Food Restaurant w/o Drive Thru	0					0.00	0.00	0.00	0.00
Fast Food Restaurant with Drive Thru	0					0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	0					0.00	0.00	0.00	0.00
Hotel	59.13					12.00	0.71	0.00	26.90
Strip Mall	0					0.00	0.00	0.00	0.00
Total						**12.00**	**0.71**	**0.00**	**26.90**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Fast Food Restaurant w/o Drive Thru	0					0.00	0.00	0.00	0.00
Fast Food Restaurant with Drive Thru	0					0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	0					0.00	0.00	0.00	0.00
Hotel	59.13					12.00	0.71	0.00	26.90
Strip Mall	0					0.00	0.00	0.00	0.00
Total						**12.00**	**0.71**	**0.00**	**26.90**

9.0 Vegetation

APPENDIX E

Phase I ESA

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Phase I ESA Report

NWC Neckle and Hwy 86

Imperial, California

Prepared for:

Mr. Victor Liu
5123 North Rosemead Blvd, #9
San Gabriel, CA 91776

Prepared by:

GS Lyon Consultants, Inc.
780 N. 4th Street
El Centro, CA 92243
(760) 337-1100

January 2004

GS Lyon
Engineering And
Information Technology

January 7, 2003

Mr. Victor Liu
5123 N. Rosemead Blvd., #9
San Gabriel, CA 91776

Phase I Environmental Site Assessment Report
26-acre Parcel
NWC of Neckel Road and Hwy 86
Imperial, California
GSL Report No. GS0373

Dear Mr. Liu:

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM E1527 of the 26-acre property located at the northwest corner of the intersection of Neckel Road and State Hwy 86 in northern Imperial, California. Any exceptions to, or deletions from, this practice are described in Section 2.0 of this report. This assessment has revealed the following recognized environmental conditions in connection with the property:

- Pesticide residues (low concentrations) typical to agricultural crop applications.
- There may be a septic tank and leach field in the vicinity of the rural residence in the southwest corner of the site.

Attached is our report which describes the procedures used and results of the assessment. If you have any questions or require additional information, please do not hesitate to contact the undersigned at (760) 337-1100. We appreciate the opportunity to provide our professional review for this site.

Respectfully Submitted,
GS Lyon Consultants, Inc.

Registered Geologist
Steven K. Williams
Certified Engineering Geologist
CEG 2261
State of California

Steven K. Williams, CEG
Project Geologist

Iqbal U. Mahmood, Ph.D., P.E.
Principal Geotechnical Engineer

Registered Professional Engineer
Iqbal U. Mahmood
No. C050306
Expires 6-30-05
Civil
State of California

Distribution:
Client (4)

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) is to identify potential environmental hazards associated with past and present activities on the project site or in the immediate site vicinity in general conformance to ASTM E-1527 Standards. No environmental assessment can completely eliminate the possibility of hazardous waste occurrences on a site. This ESA is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with the subject project.

1.2 Involved Parties

GS Lyon Consultants, Inc. has been retained by Mr. Victor Liu to conduct a Phase I ESA at the project site as a prerequisite to site purchase. The services outlined herein were performed in accordance with our "Proposal for Phase I Environmental Site Assessment (ESA) dated November 13, 2003, and confirmed by fee deposit on November 20, 2003.

2.0 SCOPE OF WORK

2.1 Site Reconnaissance

A site reconnaissance was performed by a registered geologist of GS Lyon Consultants on December 1, 2003. The reconnaissance included visual observations of surficial conditions at the site, and observation of adjoining properties to the extent that they were visible from public areas. The reconnaissance also included site observations for the presence of polychlorinated biphenyls (PCB's) and/or asbestos containing materials (ACM's), indications of surface or subsurface hydrocarbon or pesticide contamination, the presence of on-site groundwater wells, pits or sumps, wastewater discharge practices, and surface water drainage patterns. The observations made are presented in Sections 3.1 through 3.6 of this report.

2.2 Background Review

A review of historic Sanborn Fire Insurance maps (Appendix D), historic aerial photographs (Appendix C), historic telephone directories, and historic topographic maps (Appendix B) was performed to evaluate potentially adverse environmental conditions resulting from previous ownership and uses of the site. The details of the review are presented in Sections 4.1 through 4.5 of this report.

2.3 Regulatory Review

GS Lyon Consultants contracted Environmental Data Resources, Inc (EDR) of Southport, Connecticut to generate a compilation of State and Federal regulatory lists containing information regarding hazardous materials occurrences on or within a one mile radius of the project site. The EDR report is included in Appendix E. The details of the review are presented in Section 5.0 of this report.

2.4 Review of Title Documents/Environmental Liens

No title documents were provided by the client; therefore, GS Lyon did not investigate the presence of environmental liens on the subject property.

2.5 Analysis and Report Preparation

GS Lyon Consultants has reviewed the information outlined above and made inquiries of pertinent agencies regarding information gathered and general information about the site. This report summarizes the results of our study and provides our professional opinions regarding Recognized Environmental Concerns (REC's) on the site from past usage of the site and/or potential offsite sources and is presented in Section 6.0 of this report.

2.6 Radon Gas Testing

Due to the general absence of radon gas hazard in the Imperial County region of southern California, GS Lyon did not perform radon gas testing at the subject property.

3.0 SITE OVERVIEW

3.1 Site Location

The project site is located in a rural agricultural area north of Imperial, California. The site location is depicted on Plate 1, Site Map.

3.2 Site Description

Topographic maps (USGS 7.5 minute El Centro Quadrangle) indicate that the site elevation is approximately 65 feet below mean sea level (MSL) or elevation 935 (local datum). The Imperial Irrigation District, which supplies power and raw (irrigation) water to the area, established local datum by equating mean sea level to El. 1000.00 feet.

The project site is roughly square in plan view and consists of approximately 26 acres. The site is bounded on the south by Neckel Road and the north by an agricultural field road. The Dahlia Drain No. 8 forms the eastern boundary of the site. The Dahlia Drain is an unlined, earthen irrigation run-off water drainage ditch. A barbed wire fence runs along the western property boundary. Above ground telephone cables are located along the eastern side of the site.

The site is relatively planar, sloping very gently to the north. The site is sparsely covered with brush. A rural residence is located in the southwest corner of the site. The house is not part of the subject site. Irrigation water sumps (Imperial Irrigation District owned) are located in the southeast corner of the site.

Photographs of the site taken on December 1, 2003 during our site reconnaissance are included in Appendix A.

3.3 Adjacent Properties

The site is located in a semi-rural area north of Imperial, California. Properties to the north consist of agricultural fields. Rural residences are located west and southwest of the subject property. A vacant lot is located south of Neckel Road.

East of the site across the Dahlia Drain is State Hwy 86, a four-lane major north-south highway running between the Imperial Valley and the Coachella Valley. Beyond Hwy 86 is the Sunset Ranch residential subdivision and Sunset Condominium complex.

3.4 Geologic Setting

The site is located in the Colorado Desert Physiographic province of southern California. The dominant feature of the Colorado Desert province is the Salton Trough, a geologic structural depression resulting from large-scale regional faulting. The trough is bounded on the northeast by the San Andreas Fault and the southwest by faults of the San Jacinto Fault Zone. The Salton Trough represents northward extension of the Gulf of California, which has experienced continual in-filling with both marine and non-marine sediments since the Miocene Epoch (25 million years before present). The tectonic activity that formed the trough continues at a high rate as evidenced by deformed young sedimentary deposits and high levels of historic seismicity.

The site is directly underlain by Holocene (0-11,000 years before present) Cahuilla Lake beds, which consist of interbedded lenticular and tabular sand, silt, and clay. The predominant surface soil is silty clay. The Holocene lake deposits are considered to be less than 100 feet thick and are characterized by surficial clay and silt deposits with varying amounts of fine sand. The topography of the Imperial Valley is relatively flat, with few significant land features.

The valley floor slopes gently to the north (less than 0.5 percent) from an elevation of sea level at Calexico to approximately 225 feet below sea level at the Salton Sea.

3.5 Soil Conditions

The U. S. Soil Conservation Service compiled a map of surface soil conditions based on a thirteen-year study from 1962-1975. The Soil Survey maps were published in 1981 and indicate that surficial deposits at the site and surrounding area consist predominantly of silty clay and silty clay loams of the Holtville soil group (see Appendix B). These loams are formed in sediment and alluvium of mixed origin (Colorado River overflows and fresh-water lake-bed sediments). Based on Unified Soil Classification System presented in the Soils Survey Report, the permeability of these soils is expected to be low to very low.

3.6 Groundwater Conditions

The groundwater in the site area is brackish and is encountered at a depth of 8-12 feet below the ground surface. Depth to groundwater may fluctuate due to localized geologic conditions, precipitation, irrigation, drainage and construction practices in the region. Based on the regional topography, groundwater flow is assumed to be generally towards the north within the site area. Flow directions may also vary locally in the vicinity of the site.

4.0 SITE HISTORY AND OPERATIONS

4.1 Historical Aerial Photo Review

Aerial photographs from the Imperial Irrigation District (IID) archives were reviewed for historical development of the subject site. The site has been dominantly an agricultural field since 1949 with a rural residence and other development in the southwest corner of the site. There appears to be a hay stack yard in the north central portion of the site in the photographs from 1949 to 1984. The aerial photographs reviewed are very similar from 1949 to 1992.

Reproductions of the historical aerial photographs reviewed are included in Appendix C.

4.2 Sanborn Fire Insurance Map Review

Sanborn Fire Insurance Maps are large scale maps depicting the commercial, industrial, and residential sections of various cities across the United States. Since the primary use of the fire insurance maps was to assess the buildings that were being insured, the existence and location of fuel storage tanks, flammable or other potentially toxic substances, and the nature of businesses are often shown on these maps.

Due to the rural undeveloped nature of the site, no Sanborn Fire Insurance Maps were available for this site. A "No Coverage" letter for the Sanborn Fire Insurance Maps is included in Appendix D.

4.3 Review of Historic Topographic Maps

Historic topographic maps, USGS 7.5 Min. El Centro, California Quadrangle, showed development on the site (one structure in the southwest corner of the site).

4.4 Review of Historic Telephone and Polk Directories

Telephone directories for the Imperial County, which included the City of Imperial businesses published in 1941, 1955, 1968, and 1974 were reviewed. No service stations, chemical manufacturers, petroleum manufacturers, distributors, or automotive repair facilities were noted at or in the immediate vicinity of the site. Polk Directories for the year 1963 was reviewed with no listing for the project site.

4.5 Review of Title Information/Environmental Liens

No title documents were provided by the client for our review and no checks for environmental liens were made.

4.6 Other Information

Wetlands: No wetlands are located within one (1) mile of the subject property.

Sewer/water: No sewer and potable water service are provided to the subject site.

Building Construction Materials: The potential risk of asbestos containing materials (ACM) and lead based paint existing at the subject property is low due to the lack of site development. The rural residence in the southwest corner of the site is not included in the subject property.

5.0 REGULATORY RECORDS REVIEW

The following is a brief synopsis of sites identified in the EDR report. The report is included in its entirety in Appendix E. No risk sites were noted within ½ mile of the subject property.

Several known leaking underground storage tank sites located within ½ to 1 mile of the site were identified in the EDR report. Because of their distance from the site, it is considered unlikely that prior or future hydrocarbon or agricultural chemical spills or releases would affect the site unless groundwater contamination and transport occurred.

The AM-PM mini-mart and gas station located at the northeast corner of Hwy 86 and 15th Street is not listed in the EDR report. The AM-PM was built in the late 1980's to early 1990's.

Typical agricultural practices in the Imperial Valley consist of aerial and ground application of pesticides and application of chemical fertilizers to both ground and irrigation water. Many agricultural fields are burned after crop removal (wheat stubble, asparagus, etc.). Most of the agricultural fields in the valley are underlain by tile drainage systems installed at a depth of approximately 5 to 7 feet below the ground surface. The tile drains remove excess water to maintain groundwater below the root systems of crops and remove soluble salts and compounds leached from the soil during irrigation. The tile drain pipelines flow or are pumped into the open earthen drains/ditches, such as Dahlia Drain No. 8 along the eastern portion of the site.

The U.S. Geologic Survey, at the request of the Imperial Irrigation District (IID), performed a "one-time" water quality study of 27 irrigation drains throughout the Imperial Valley during the summer of 1994. Review of the study results indicate that the drains sampled contained less than the regulatory limits of arsenic, selenium, and nitrites for drinking water.

6.0 DISCUSSION AND CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM E1527 of the 14-acre property located at the northwest corner of Neckel Road and State Hwy 86 in northern Imperial, California. Any exceptions to, or deletions from, this practice are described in Section 2.0 of this report. This assessment has revealed no evidence of Recognized Environmental Conditions (REC's) in connection with the property except for the following:

- Based on our review of environmental documents and site conditions, the property has been dominantly in agricultural use and/or vacant since the late 1940's. Residues of currently available pesticides and currently banned pesticides such as DDT/DDE may be present in near surface soils in limited concentrations (usually less than ¼ of EPA action levels). Agricultural commissioner office files of pesticide applications to local fields are maintained only for 3 years prior to the current date. Samples of near-surface soils were not collected by GS Lyon Consultants personnel. The near-surface soils most likely contain trace residue of pesticides used on the fields from roughly 50 years of agricultural use. The concentrations of these pesticides found on other Imperial Valley agricultural sites are typically ¼ to ½ of the current regulatory threshold limits and, and at those levels are not considered a significant environmental hazard. The presence and concentration of near surface pesticides at this site can be accurately characterized only by site-specific sampling and testing. ***No action is recommended.***

- No known leaking underground storage tanks (LUST) or other sites where hazardous materials are known to be used or stored are located within ½ mile of the site such that migration of contaminants to the site via soil or groundwater is considered likely. ***No action is recommended.***

- The potential for contamination of the site by PCB's is low due to the lack of electrical transformers on the site. ***No action is recommended.***

- Radon gas is not believed to be a potential hazard at the site. A report titled "California Statewide Radon Survey-Screening Results", dated November 1990 and published by the California State Department of Health Services, notes that Southern California showed a low risk of elevated radon levels, based on 2-day tests conducted from January through April 1990. Some of the reported testing was performed in Imperial County; however, no data was observed as being at or near the project site. ***No action is recommended.***

  The EDR report (Appendix E, Page A-9) indicates Imperial County lies within the EPA Radon Zone 3 (<2pCi/L).

7.0 LIMITATIONS

The data presented and the opinions expressed in this report are qualified as follows:

- Our assessment of the site and surrounding areas was conducted in accordance with ASTM guidelines and the *generally accepted environmental engineering standard of practice* which existed in Imperial County, California at the time that the report was prepared. No warranty, express or implied, is made.

- The sole purpose of the investigation and of this report is to assess the physical characteristics of the site with respect to the presence or absence in the environment of oil or hazardous materials and substances as defined in the applicable state and federal environmental laws and regulations and to gather information regarding current and past usages that may result in adverse environmental conditions at the site.

- GS Lyon Consultants, Inc. derived the data in this report primarily from visual inspections, examination of public records and information in the public domain, informal interviews with individuals, and readily available information about the site. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration of the site, analysis of the data, and reevaluation of the findings, observations, and conclusions expressed in the report.

- In preparing this report, GS Lyon Consultants, Inc. has relied upon and presumed accurate certain information (or the absence thereof) about the site and adjacent properties by governmental officials and agencies, the Client, and others identified herein. Except as otherwise stated in the report, GS Lyon Consultants has not attempted to verify the accuracy or completeness of any such information.

- The data report and the findings, observation, and conclusions expressed in the report are limited by the Scope of Services. The Scope of Services was defined by the requests of the Client, the time and budgetary constraints imposed by the Client, and the availability of access to the site.

- Because of the limitations stated above, the findings, observations, and conclusions expressed by GS Lyon Consultants in this report are not, and should not be considered, an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state or local law or regulation.

- No warranty or guarantee, express or implied, is made with respect to the data reported or findings, observations, and conclusions expressed in this report. Further, such data, findings, observations, and conclusions are based solely upon site conditions in existence at the time of investigation.

- This report has been prepared on behalf of and for the exclusive use of the Client for the particular site identified in this report, and is subject to and issued in connection with the referenced Agreement and the provisions thereof. This report should not be relied upon by any party other than the client and his legal counsel without the express permission of GS Lyon Consultants, Inc.

APPENDIX A

Photo 1: Looking south along the east side of the site.

Photo 2: View along the north side of the site.

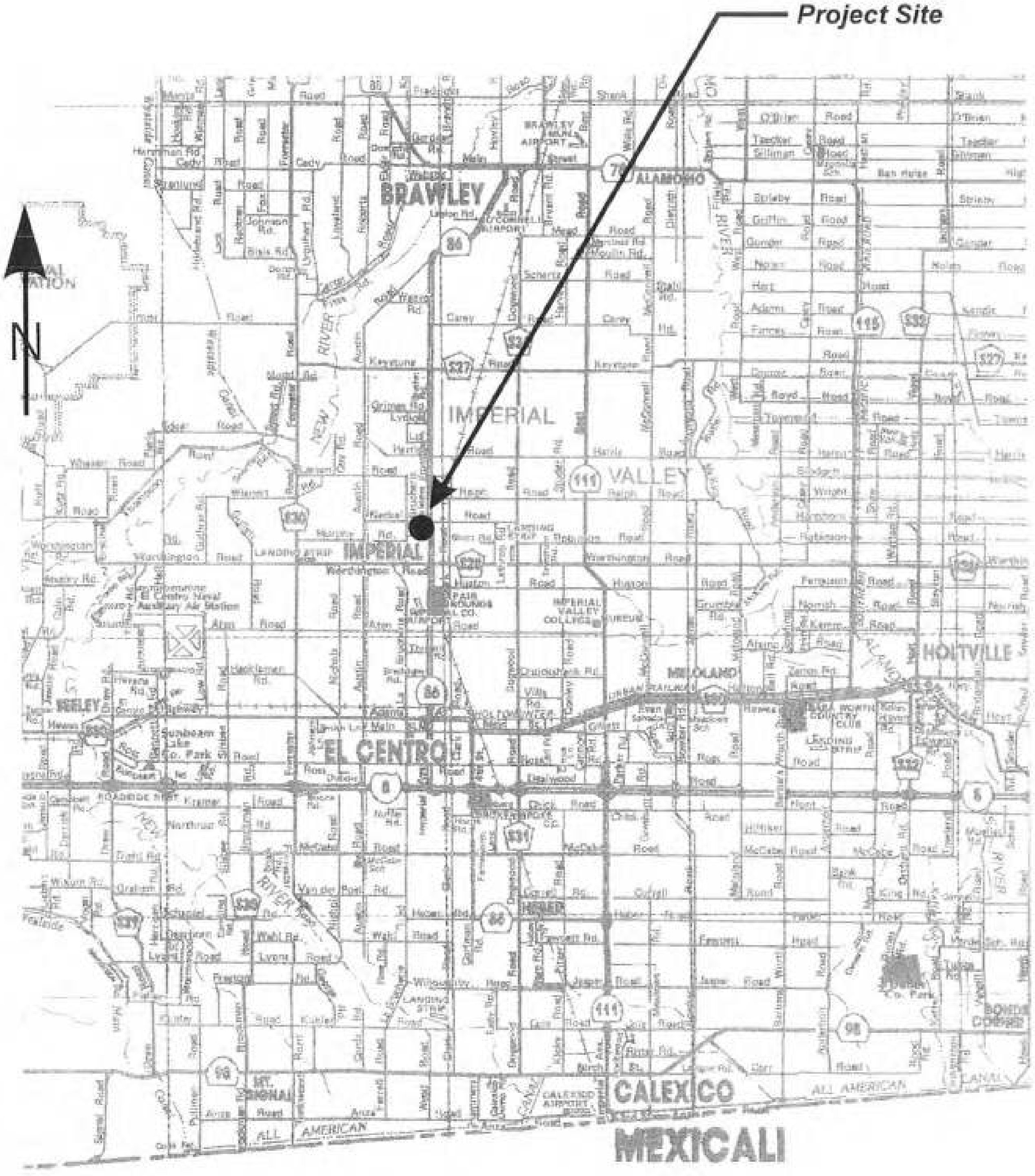
Photo 3: Rural residence (not include in site) located in the southwest corner of the property.

Photo 4: View to the north side of the rural residence.

Photo 5: Looking north along the west side of the site.

Photo 6: View across the site from the southwest corner.

APPENDIX B



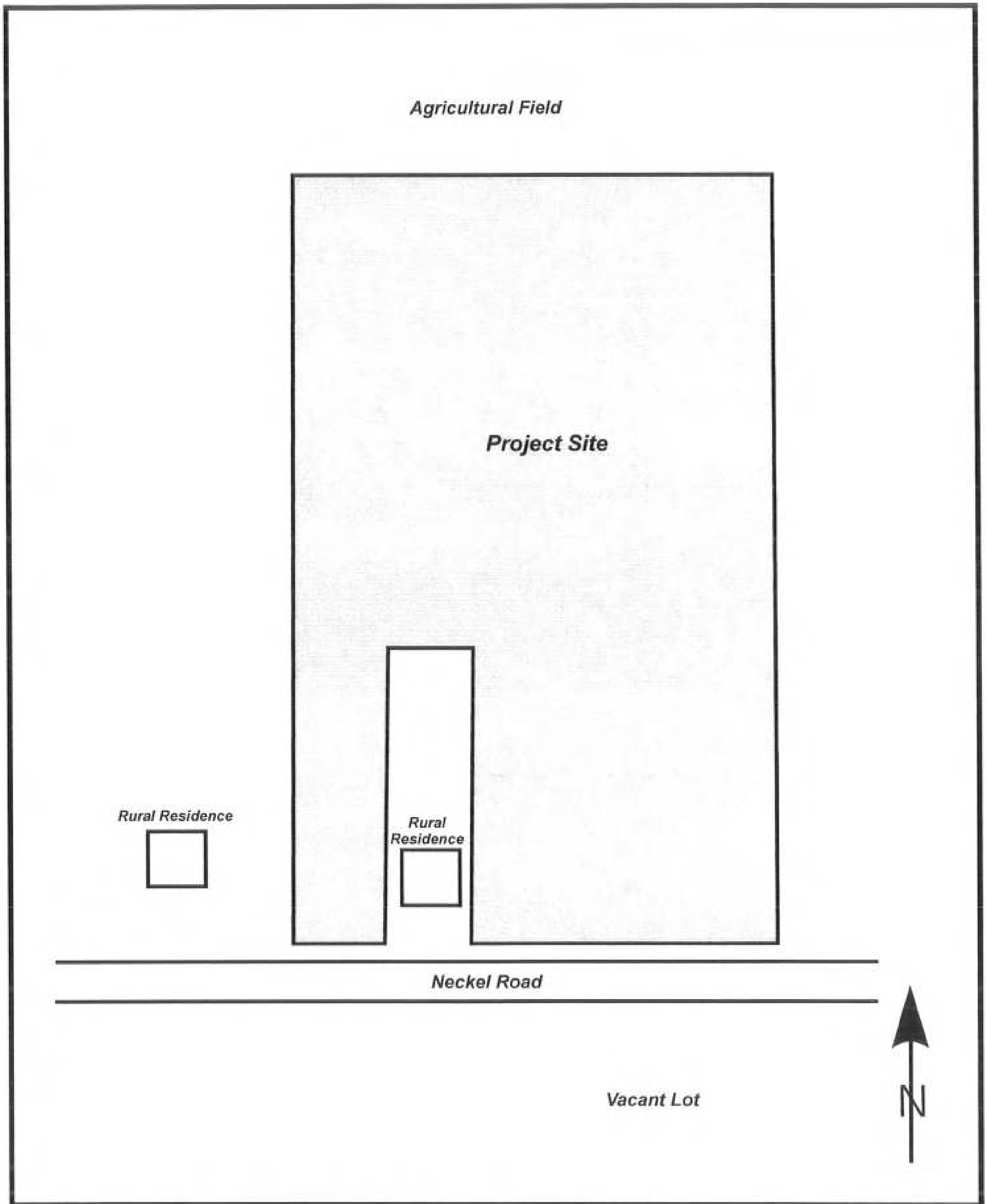
GS Lyon

Project No.: GS0373

Vicinity Map

Plate

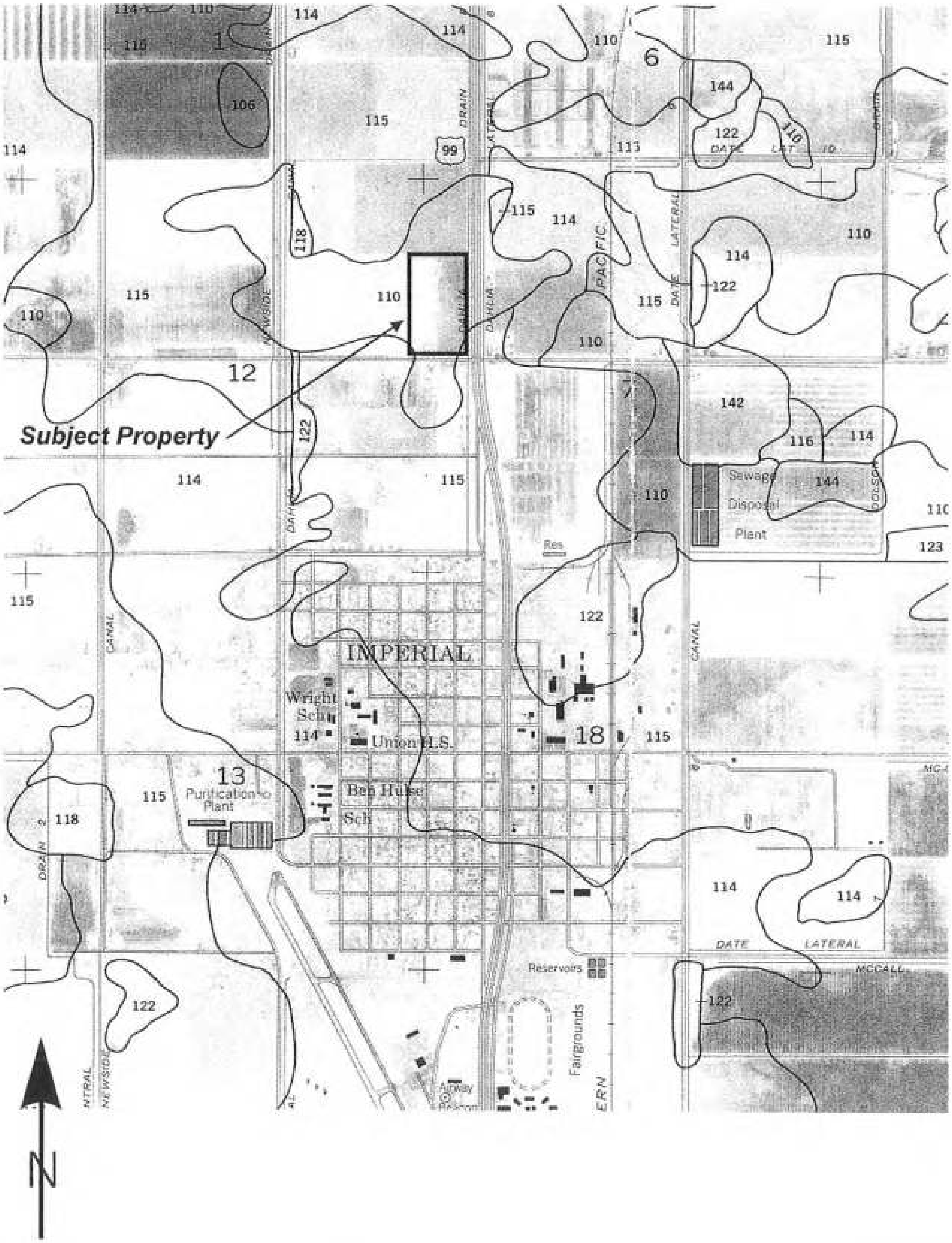
1



Project No.: GS0374

Site Map

Plate
2



GS Lyon

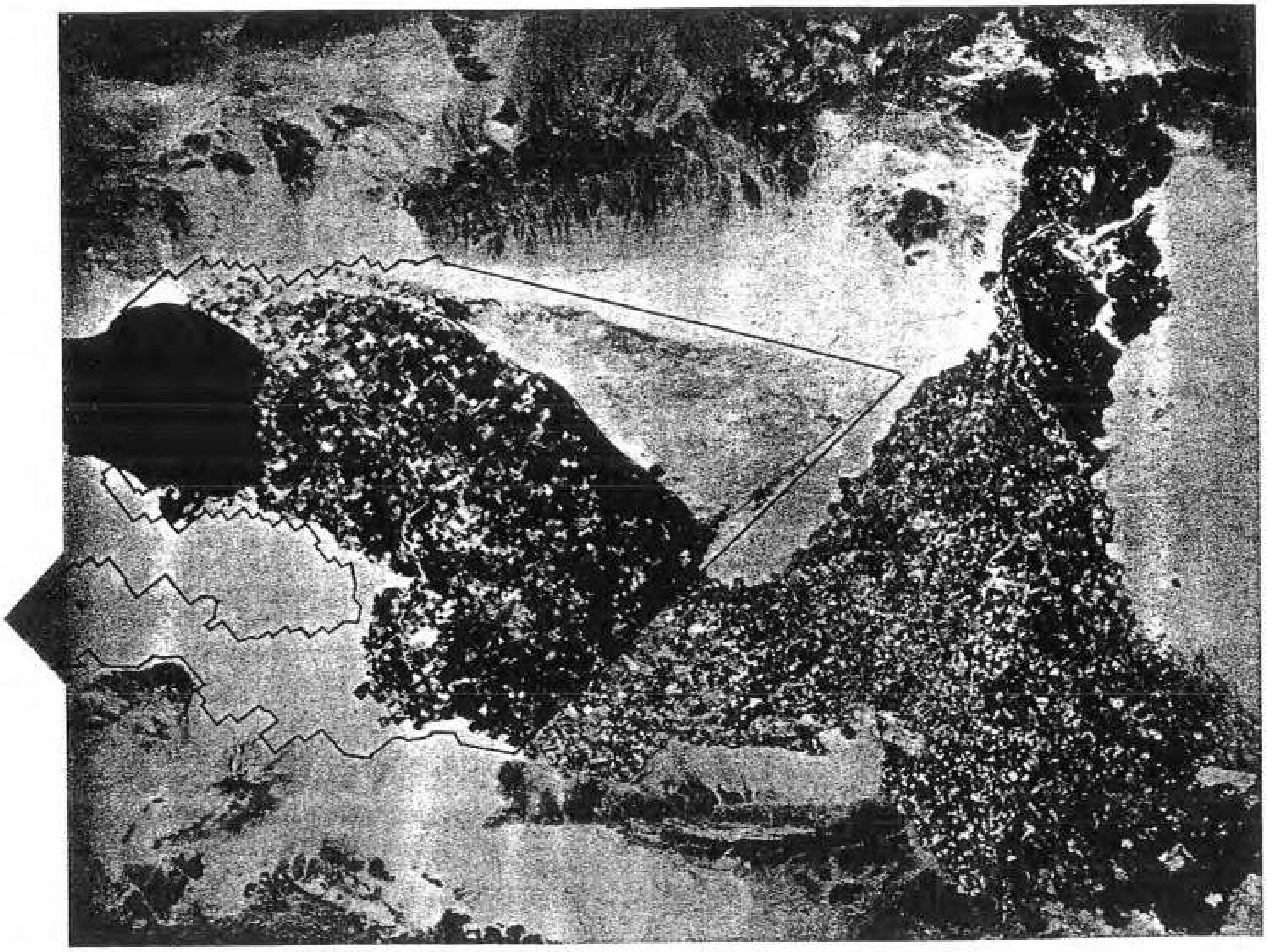
Project No.: GS0373

Soil Survey Map

Plate
3

Soil Survey of

IMPERIAL COUNTY CALIFORNIA IMPERIAL VALLEY AREA



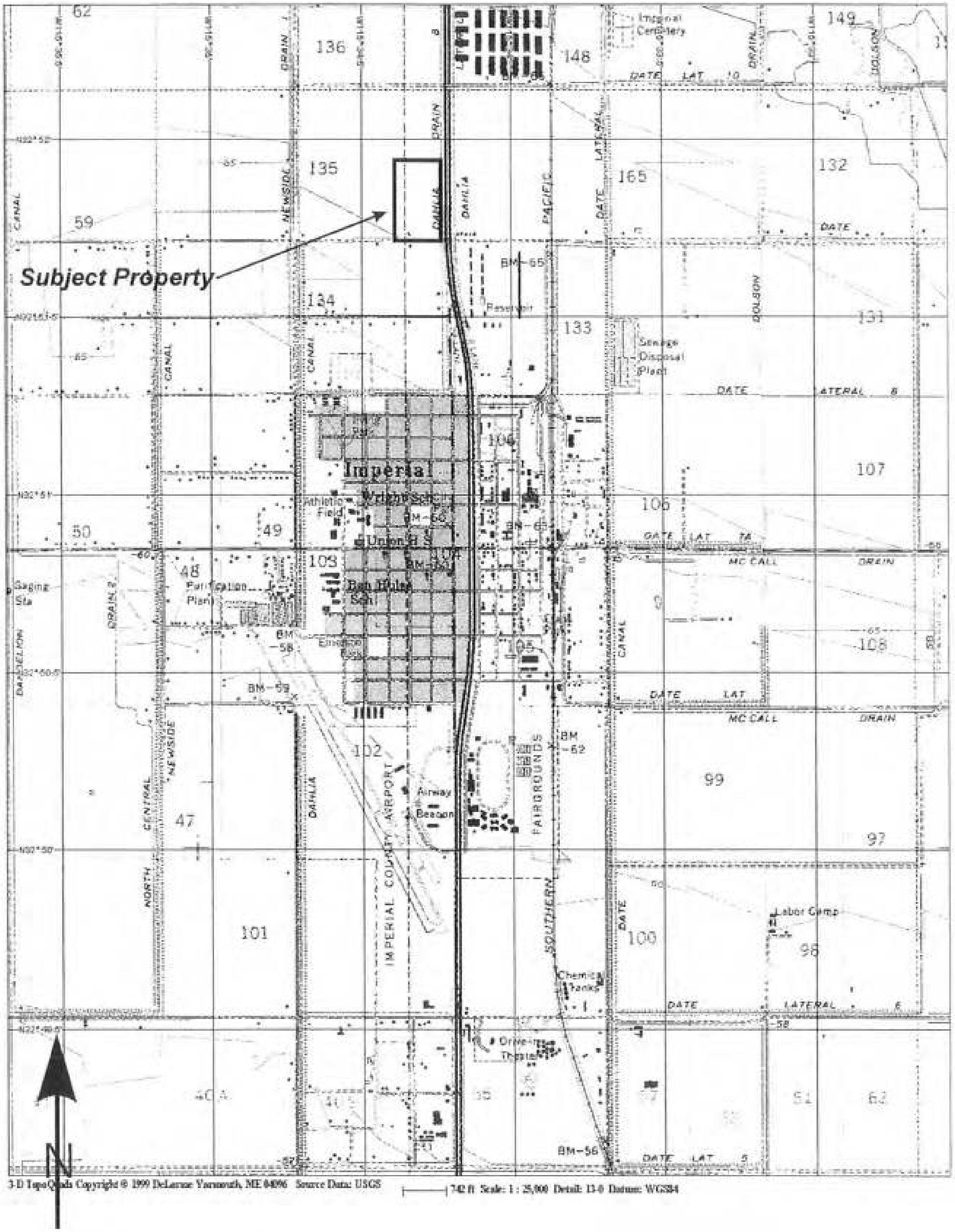
United States Department of Agriculture Soil Conservation Service
in cooperation with
University of California Agricultural Experiment Station
and
Imperial Irrigation District

TABLE 11.--ENGINEERING INDEX PROPERTIES

[The symbol > means more than. Absence of an entry indicates that data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
100----------------	0-13	Loamy fine sand	SM	A-2	0	100	100	75-85	10-30	---	NP
Antho	13-60	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	90-100	75-95	50-60	15-40	---	NP
101*:											
Antho--------------	0-8	Loamy fine sand	SM	A-2	0	100	100	75-85	10-30	---	NP
	8-60	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	90-100	75-95	50-60	15-40	---	NP
Superstition-------	0-6	Fine sand--------	SM	A-2	0	100	95-100	70-85	15-25	---	NP
	6-60	Loamy fine sand, fine sand, sand.	SM	A-2	0	100	95-100	70-85	15-25	---	NP
102*. Badland											
103----------------	0-10	Gravelly sand---	SP, SP-SM	A-1, A-2	0-5	60-90	50-85	30-55	0-10	---	NP
Carsitas	10-60	Gravelly sand, gravelly coarse sand, sand.	SP, SP-SM	A-1	0-5	60-90	50-85	25-50	0-10	---	NP
104* Fluvaquents											
105----------------	0-13	Clay loam--------	CL	A-6	0	100	100	90-100	70-95	35-45	15-30
Glenbar	13-60	Clay loam, silty clay loam.	CL	A-6	0	100	100	90-100	70-95	35-45	15-30
106----------------	0-13	Clay loam--------	CL	A-6, A-7	0	100	100	90-100	70-95	35-45	15-25
Glenbar	13-60	Clay loam, silty clay loam.	CL	A-6, A-7	0	100	100	90-100	70-95	35-45	15-25
107*--------------- Glenbar	0-13	Loam-------------	ML, CL-ML, CL	A-4	0	100	100	100	70-80	20-30	NP-10
	13-60	Clay loam, silty clay loam.	CL	A-6, A-7	0	100	100	95-100	75-95	35-45	15-30
108----------------	0-14	Loam-------------	ML	A-4	0	100	100	85-100	55-95	25-35	NP-10
Holtville	14-22	Clay, silty clay	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
	22-60	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	65-85	25-35	NP-10
109----------------	0-17	Silty clay-------	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
Holtville	17-24	Clay, silty clay	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
	24-35	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	65-85	25-35	NP-10
	35-60	Loamy very fine sand, loamy fine sand.	SM, ML	A-2, A-4	0	100	100	75-100	20-55	---	NP
110----------------	0-17	Silty clay-------	CH, CL	A-7	0	100	100	95-100	85-95	40-65	20-35
Holtville	17-24	Clay, silty clay	CH, CL	A-7	0	100	100	95-100	85-95	40-65	20-35
	24-35	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	55-85	25-35	NP-10
	35-60	Loamy very fine sand, loamy fine sand.	SM, ML	A-2, A-4	0	100	100	75-100	20-55	---	NP

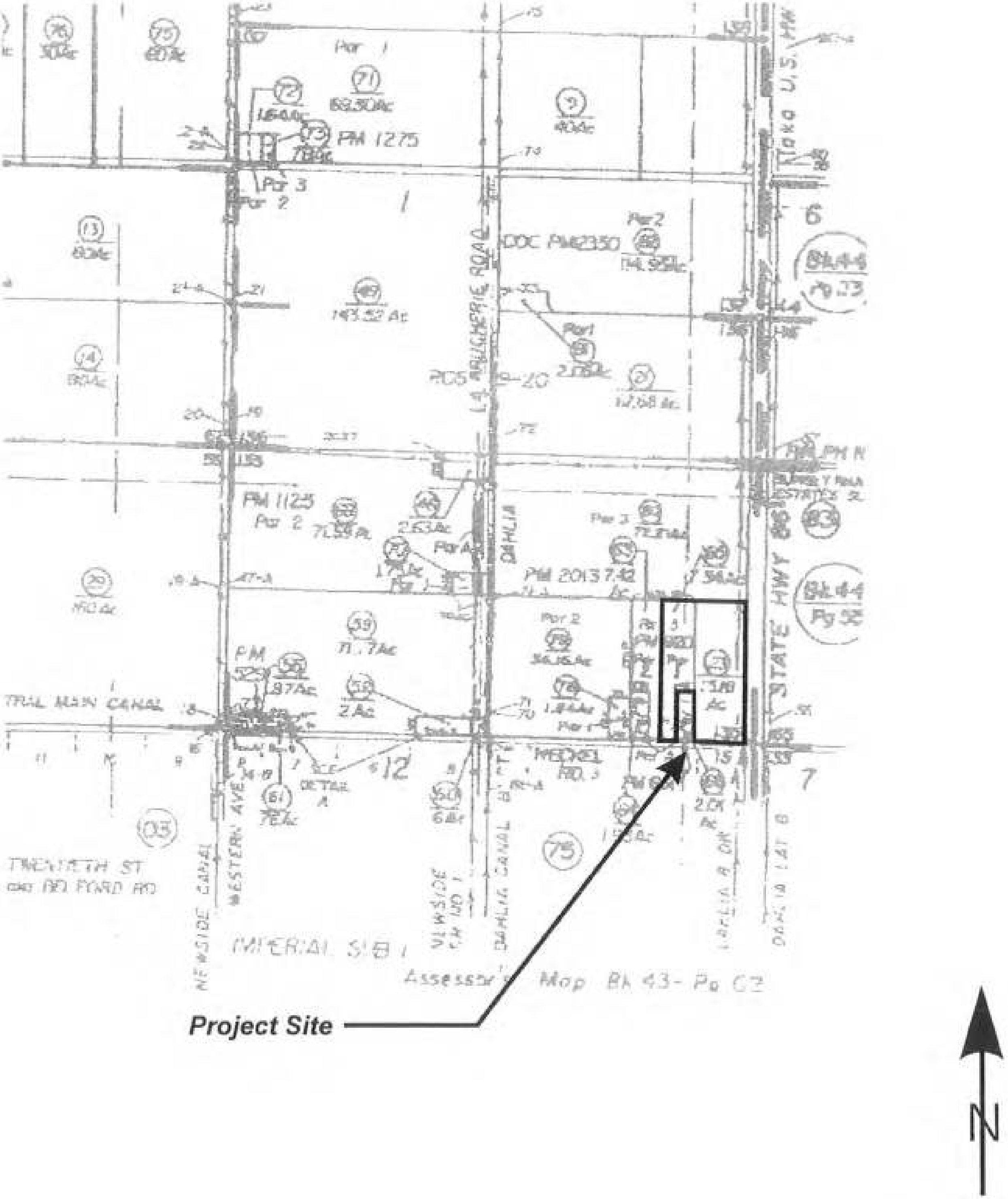
See footnote at end of table.



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

742 ft Scale: 1 : 25,000 Detail: 13-0 Datum: WGS84

GS Lyon Project No.: GS0373	Topographic Map	Plate 4



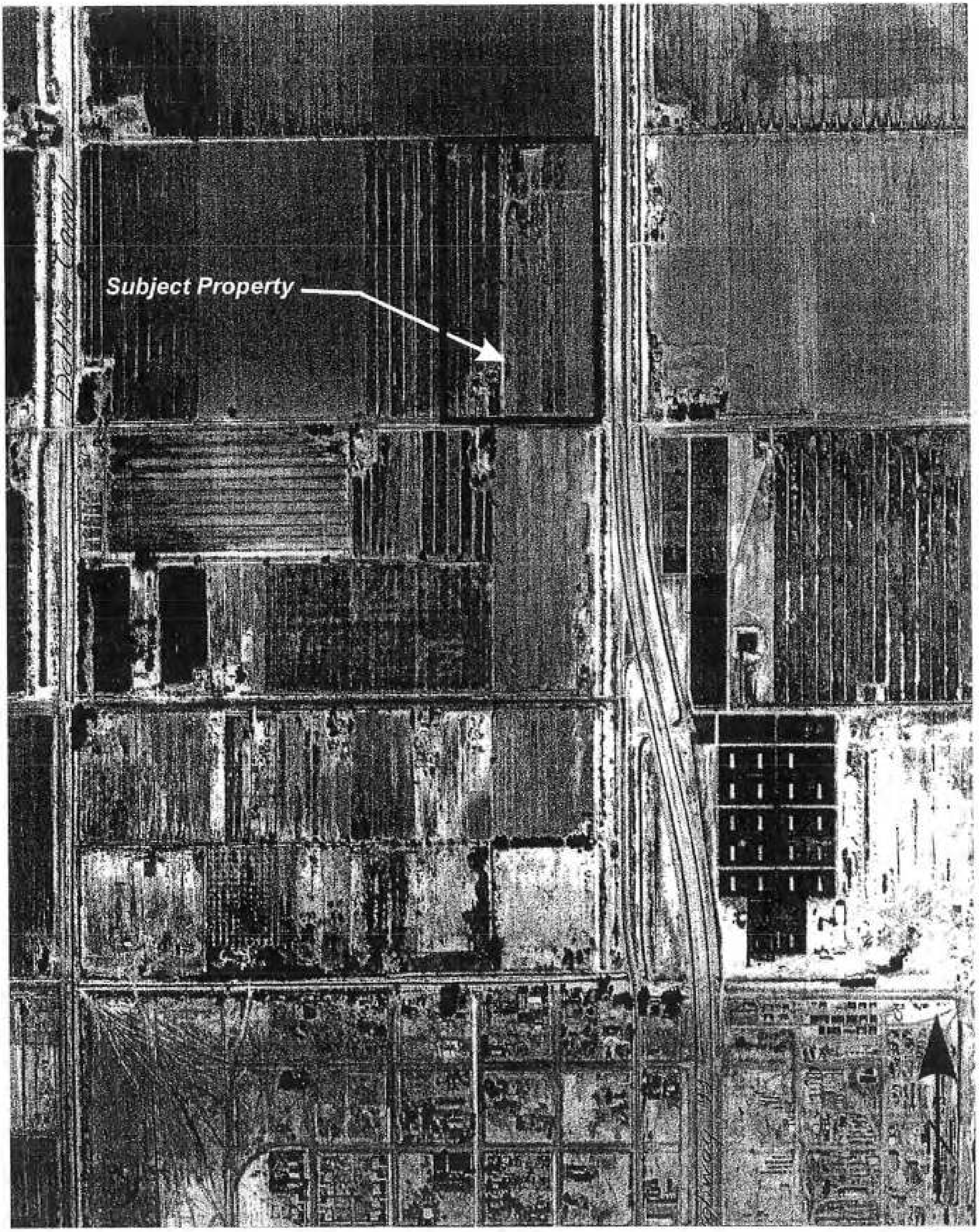
GS Lyon

Project No.: GS0374

Assessor's Map

Plate
5

APPENDIX C

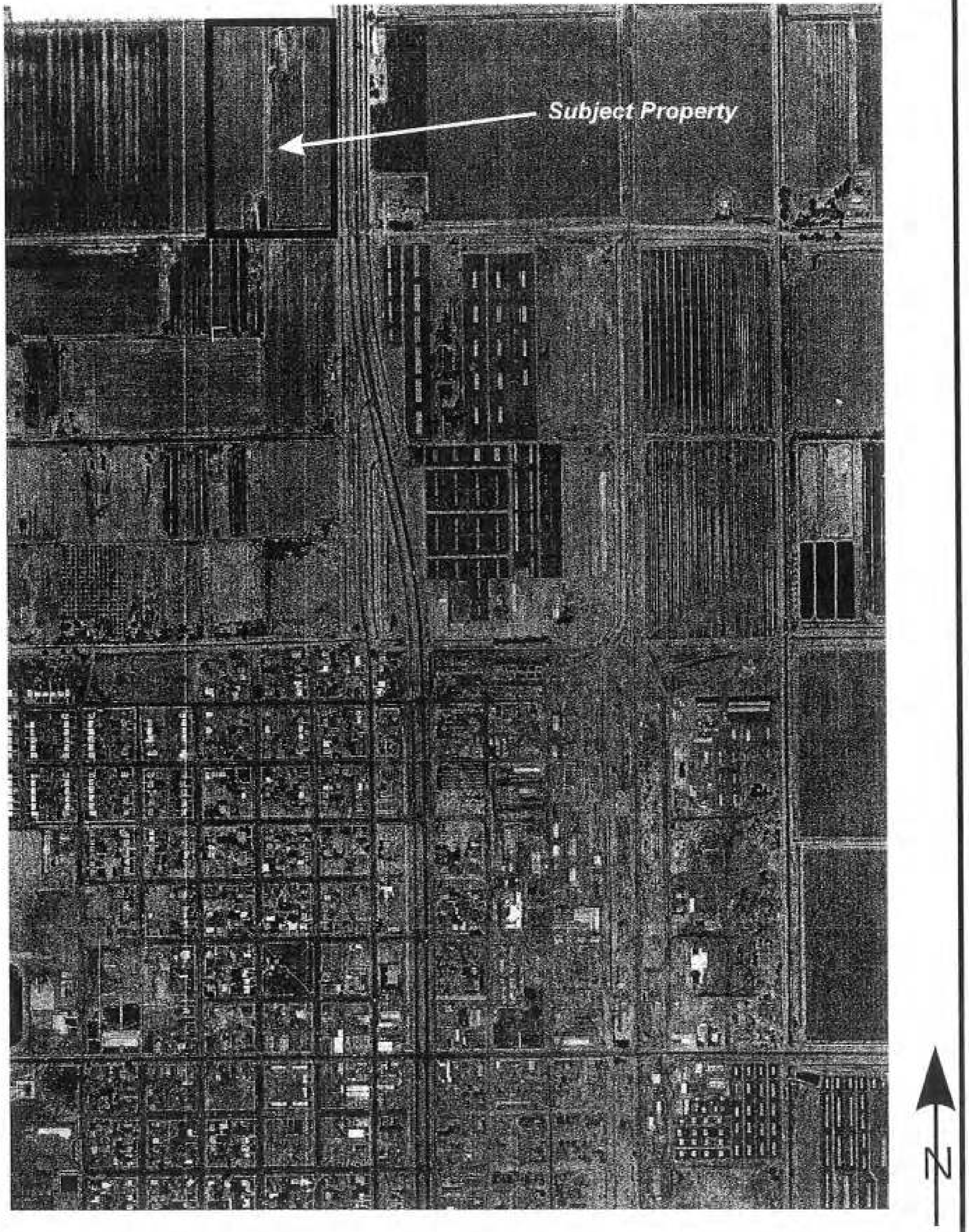


Project No.: GS0373

1949 Aerial Photograph

Plate

6

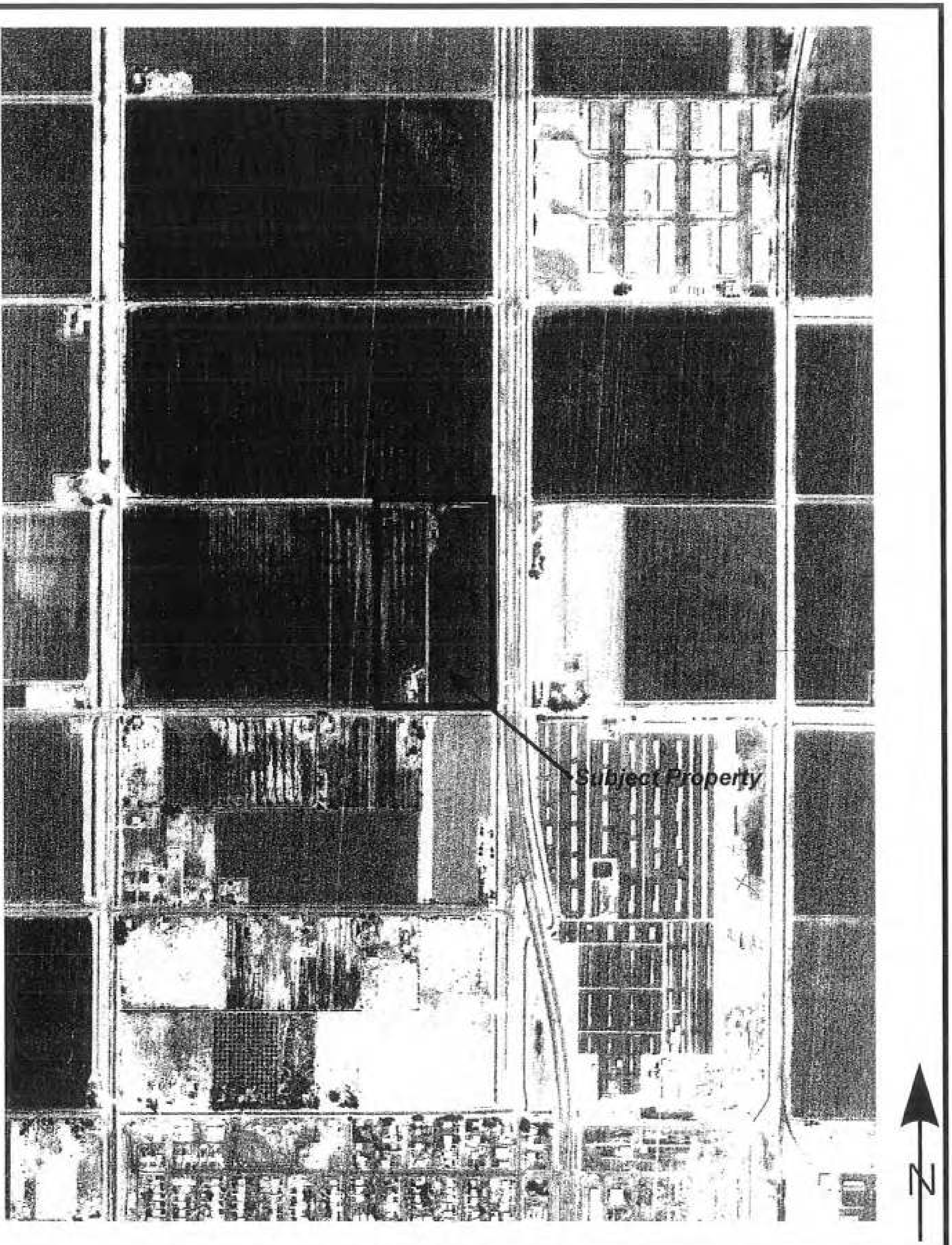


GS Lyon

Project No.: GS0373

1959 Aerial Photograph

Plate
7

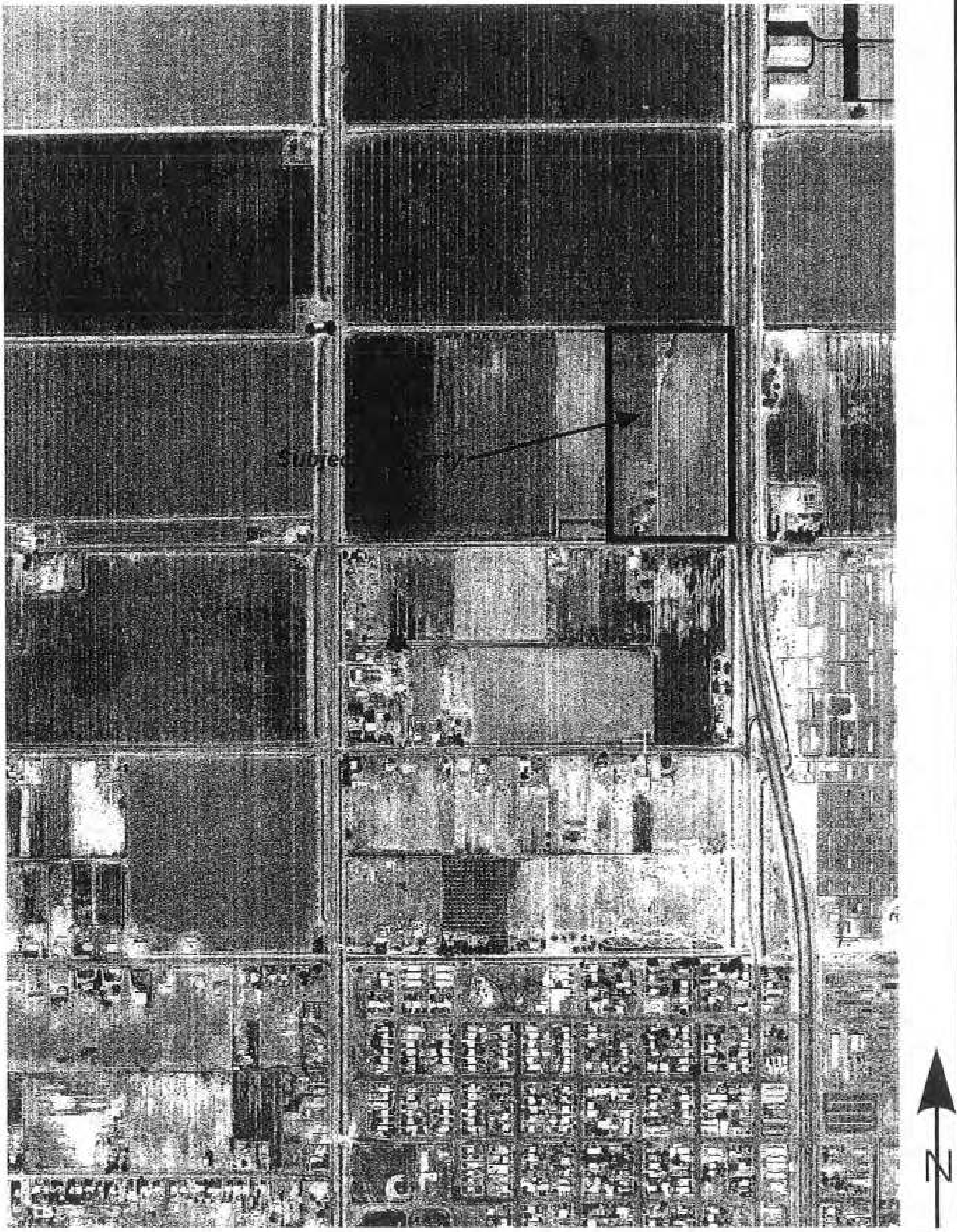


GS Lyon

Project No.: GS0373

1972 Aerial Photograph

Plate
8

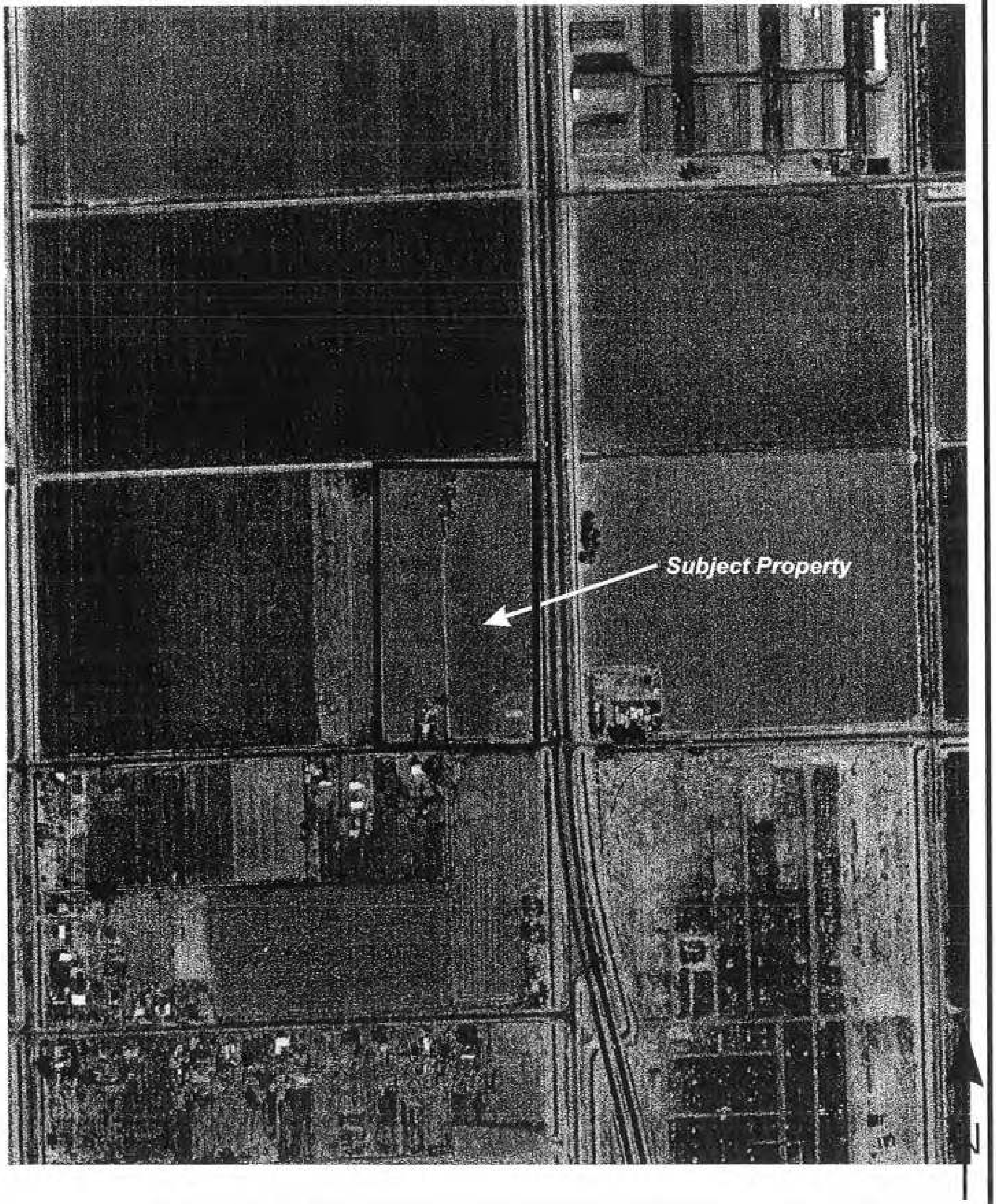


GS Lyon

Project No.: GS0373

1979 Aerial Photograph

Plate
9

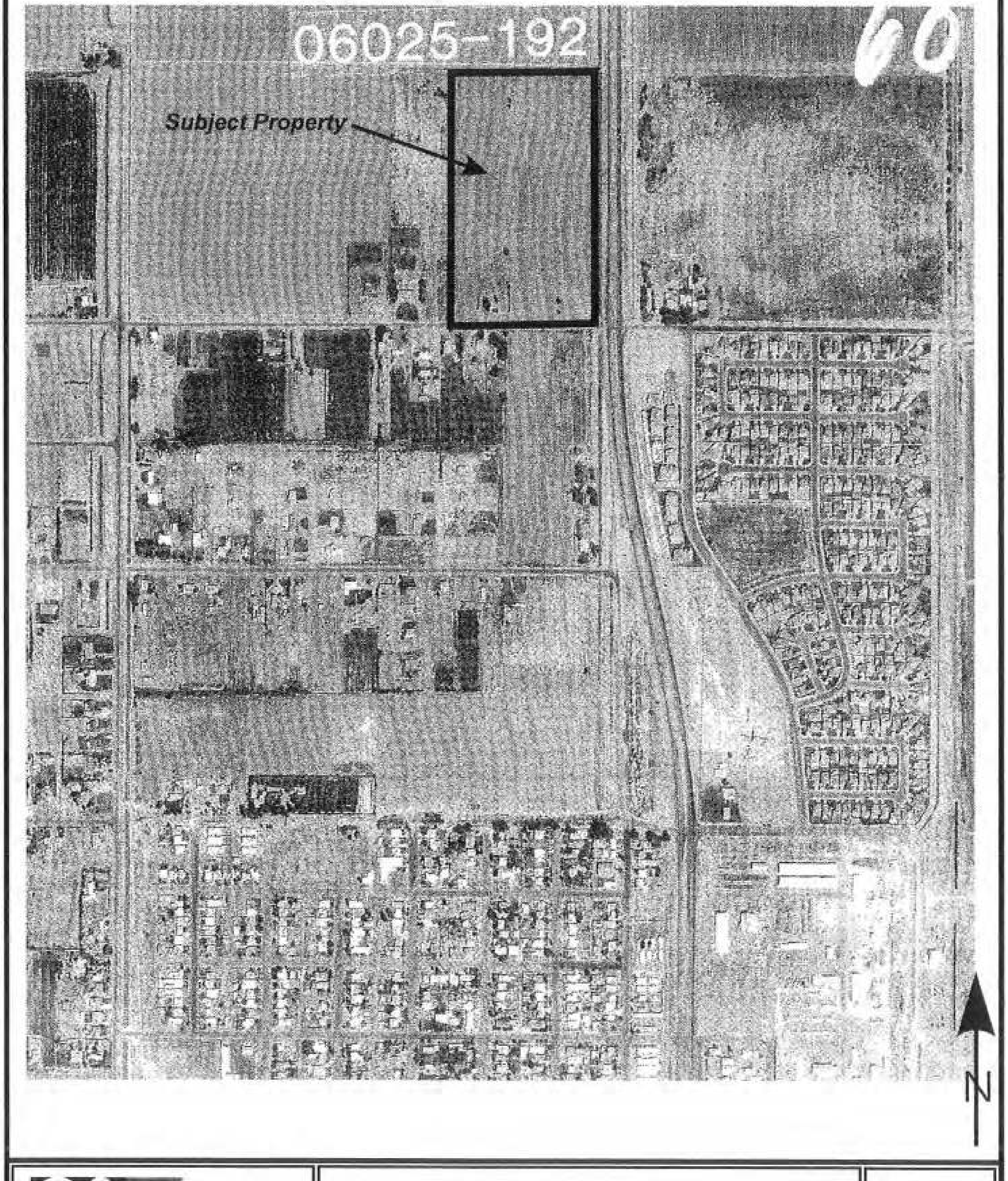


GS Lyon

Project No.: GS0373

1984 Aerial Photograph

Plate
10



GS Lyon

Project No.: GS0373

1992 Aerial Photograph

Plate

11

APPENDIX D

Environmental Data Resources, Inc.

"Linking Technology with Tradition"

Sanborn® Map Report

Ship To: Steven Williams
Southland Geotechnical
780 N. Fourth Street
El Centro, CA 92243

Order Date: 12/30/2003 **Completion Date:** 12/31/2003

Inquiry #: 1105407.2S

P.O. #: NA

Site Name: 26-Acre Vacant Parcel

Address: NWC Neckel Road and Hwy 86

City/State: Imperial, CA 92251

Cross Streets:

Customer Project: GS0373

5013515NIC 760-370-3000

This document reports that the largest and most complete collection of Sanborn fire insurance maps has been reviewed based on client supplied information, and fire insurance maps depicting the target property at the specified address were not identified.

NO COVERAGE

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APPENDIX E

Environmental Data Resources, Inc.

The EDR Radius Map
with GeoCheck®

26-Acre Vacant Parcel
NWC Neckel Road and Hwy 86
Imperial, CA 92251

Inquiry Number: 01105407.1r

December 30, 2003

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06890

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

GEOCHECK ADDENDUM

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

NWC NECKEL ROAD AND HWY 86
IMPERIAL, CA 92251

COORDINATES

Latitude (North):	32.862500 - 32˚ 51' 45.0"
Longitude (West):	115.571000 - 115˚ 34' 15.6"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	633706.6
UTM Y (Meters):	3636758.0
Elevation:	60 ft. below sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	32115-G5 EL CENTRO, CA
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
CORRACTS	Corrective Action Report
RCRIS-TSD	Resource Conservation and Recovery Information System
RCRIS-LQG	Resource Conservation and Recovery Information System
RCRIS-SQG	Resource Conservation and Recovery Information System
ERNS	Emergency Response Notification System

STATE ASTM STANDARD

AWP	Annual Workplan Sites

Cal-Sites	Calsites Database
Notify 65	Proposition 65 Records
Toxic Pits	Toxic Pits Cleanup Act Sites
SWF/LF	Solid Waste Information System
WMUDS/SWAT	Waste Management Unit Database
LUST	Leaking Underground Storage Tank Information System
CA BOND EXP. PLAN	Bond Expenditure Plan
UST	List of Underground Storage Tank Facilities
VCP	Voluntary Cleanup Program Properties
INDIAN UST	Underground Storage Tanks on Indian Land
CA FID UST	Facility Inventory Database
HIST UST	Hazardous Substance Storage Container Database

FEDERAL ASTM SUPPLEMENTAL

CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
Delisted NPL	National Priority List Deletions
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS	Hazardous Materials Information Reporting System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
NPL Liens	Federal Superfund Liens
PADS	PCB Activity Database System
DOD	Department of Defense Sites
US BROWNFIELDS	A Listing of Brownfields Sites
RAATS	RCRA Administrative Action Tracking System
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
SSTS	Section 7 Tracking Systems
FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST	Aboveground Petroleum Storage Tank Facilities
CLEANERS	Cleaner Facilities
CA WDS	Waste Discharge System
DEED	List of Deed Restrictions
NFA	No Further Action Determination
EMI	Emissions Inventory Data
REF	Unconfirmed Properties Referred to Another Agency
SCH	School Property Evaluation Program
NFE	Properties Needing Further Evaluation
CA SLIC	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
HAZNET	Hazardous Waste Information System

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas	Former Manufactured Gas (Coal Gas) Sites

BROWNFIELDS DATABASES

US BROWNFIELDS	A Listing of Brownfields Sites

EXECUTIVE SUMMARY

VCP........................ Voluntary Cleanup Program Properties

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STATE ASTM STANDARD

CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CHMIRS list, as provided by EDR, and dated 12/31/2002 has revealed that there is 1 CHMIRS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
Not reported	611 W. BELFORD RD.	1/2 - 1 WSW	3	8

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, has revealed that there are 2 Cortese sites within approximately 1 mile of the target property.

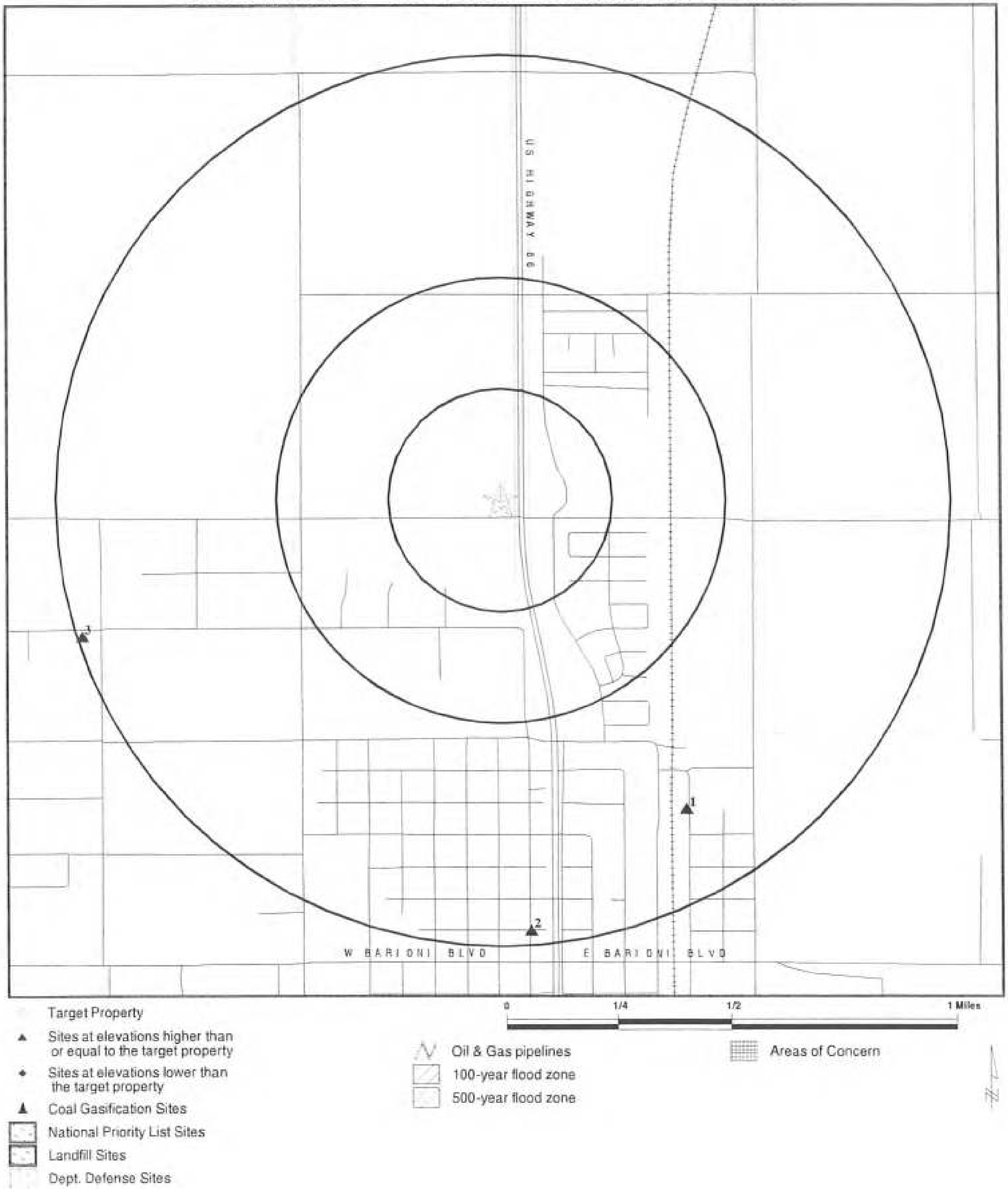
Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
CAL IDA WOOD	***602 NORTH 'N' STREET***	***1/2 - 1 SSE***	***1***	***6***
PACIFIC BELL	***108 EAST NINTH STREET***	***1/2 - 1 S***	***2***	***7***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

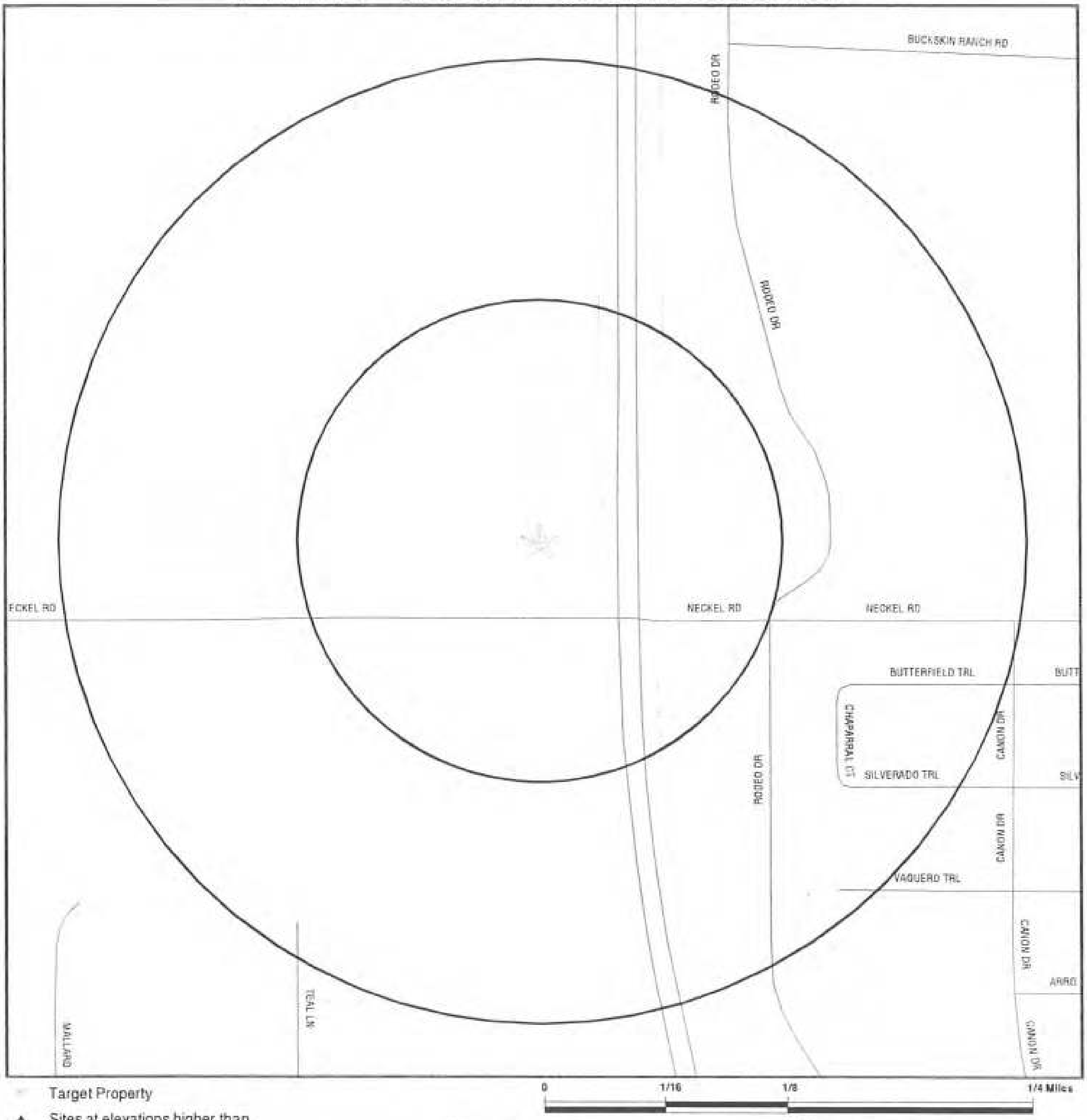
Site Name	Database(s)
345 ATEN ROAD	HAZNET, CHMIRS
EMPIRE SOUTHWEST COMPANY	LUST, Cortese
IMPERIAL MACHINERY	LUST, Cortese
ROGERS & ROGERS	LUST, Cortese
THOMAS MOTORS	LUST, Cortese
SW MRKT'G,COTTON SEED DELINT'G	Toxic Pits
QUECHAN LANDFILL	CERC-NFRAP
IMPERIAL RESOURCE RECOVERY FACILITY	SWF/LF
MEALEY, ED	SWF/LF
GLAMIS RADIO RELAY	HIST UST
RDO EQUIPMENT CO	RCRIS-SQG, FINDS, HIST UST
ROGER & ROGERS NISSAN	RCRIS-SQG, FINDS, HAZNET, HIST UST
MANUEL'S EXXON	HIST UST
CALIFORNIA HIGHWAY PATROL	HIST UST
45TH DISTRICT AGRICULTURAL ASS	HIST UST
CIRCLE K STORE #1443	RCRIS-SQG, FINDS, HIST UST
ROSS FLYING SERVICE 88-055	WMUDS/SWAT
IMPERIAL VALLEY RESOURCE RECOVERY CO LLC	HAZNET
RDO EQUIPMENT CO	HAZNET
NATIONSRENT WEST INC	HAZNET
TOSCO CORP	HAZNET
CU1 VENTURE	HAZNET
CHEMICAL LIME CO	HAZNET
SUN FEEDING CO INC	HAZNET
CIRCLE K STORES INC.#1443	HAZNET
CHEMGOLD INC, PICACHO MINE	HAZNET
NEW CHARLESTON POWER I LP	HAZNET
J T TOWING AUTO BODY REPAIR	HAZNET
HOUSEHOLD FINANCIAL SERVICES INC	HAZNET
CENTINELA STATE PRISON	RCRIS-SQG, FINDS
UNOCAL SVC STA #6228	RCRIS-SQG, FINDS
SHELL OIL CO IMPERIAL PLANT	RCRIS-SQG, FINDS
VAIL 7 - TRIFOLIUM RESERVOR PROJECT	CA SLIC
SANTA FE PACIFIC PIPELINE - IMPERIAL	CA SLIC
ROSS FLYING SERVICE	REF
IMPERIAL CUT AND FILL	REF
15TH STREET JUNIOR HIGH SCHOOL	SCH
WAGGONER SCHOOL SITE	SCH

OVERVIEW MAP - 01105407.1r - Southland Geotechnical



TARGET PROPERTY:	26-Acre Vacant Parcel	CUSTOMER:	Southland Geotechnical
ADDRESS:	NWC Neckel Road and Hwy 86	CONTACT:	Steven Williams
CITY/STATE/ZIP:	Imperial CA 92251	INQUIRY #:	01105407.1r
LAT/LONG:	32.8625 / 115.5710	DATE:	December 30, 2003 1:12 pm

DETAIL MAP - 01105407.1r - Southland Geotechnical



- Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Coal Gasification Sites
- Sensitive Receptors
- ☐ National Priority List Sites
- ▨ Landfill Sites
- Dept. Defense Sites

- Oil & Gas pipelines
- ▨ 100-year flood zone
- ▨ 500-year flood zone

- ▦ Areas of Concern

TARGET PROPERTY:	26-Acre Vacant Parcel	CUSTOMER:	Southland Geotechnical
ADDRESS:	NWC Neckel Road and Hwy 86	CONTACT:	Steven Williams
CITY/STATE/ZIP:	Imperial CA 92251	INQUIRY #:	01105407.1r
LAT/LONG:	32.8625 / 115.5710	DATE:	December 30, 2003 1:13 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
STATE ASTM STANDARD								
AWP		1.000	0	0	0	0	NR	0
Cal-Sites		1.000	0	0	0	0	NR	0
CHMIRS		1.000	0	0	0	1	NR	1
Cortese		1.000	0	0	0	2	NR	2
Notify 65		1.000	0	0	0	0	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
UST		0.250	0	0	NR	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
CA FID UST		0.250	0	0	NR	NR	NR	0
HIST UST		0.250	0	0	NR	NR	NR	0
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
AST		TP	NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CLEANERS		0.250	0	0	NR	NR	NR	0
CA WDS		TP	NR	NR	NR	NR	NR	0
DEED		TP	NR	NR	NR	NR	NR	0
NFA		0.250	0	0	NR	NR	NR	0
EMI		TP	NR	NR	NR	NR	NR	0
REF		0.250	0	0	NR	NR	NR	0
SCH		0.250	0	0	NR	NR	NR	0
NFE		0.250	0	0	NR	NR	NR	0
CA SLIC		0.500	0	0	0	NR	NR	0
HAZNET		0.250	0	0	NR	NR	NR	0
EDR PROPRIETARY HISTORICAL DATABASES								
Coal Gas		1.000	0	0	0	0	NR	0
BROWNFIELDS DATABASES								
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0

NOTES:

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

1
SSE
1/2-1
4251 ft.

CAL IDA WOOD
602 NORTH 'N' STREET
IMPERIAL, CA 92251

LUST
Cortese

S104816301
N/A

Relative:
Equal

Actual:
-60 ft.

State LUST:
Cross Street: Not reported
Qty Leaked: Not reported
Case Number 7T2251012
Reg Board: 7
Chemical: Gasoline
Lead Agency: Regional Board
Local Agency : 13000
Case Type: Soil only
Status: Case Closed
Review Date: Not reported
Workplan: Not reported
Pollution Char: Not reported
Confirm Leak: Not reported
Prelim Assess: Not reported
Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 04/23/1993
Release Date: 10/10/1991
Cleanup Fund Id : Not reported
Discover Date : 06/05/1991
Enforcement Dt : 1/1/65
Enf Type: None Taken
Enter Date : 06/06/1994
Funding: Not reported
Staff Initials: Not reported
How Discovered: OM
How Stopped: Not reported
Interim : Not reported
Leak Cause: Corrosion
Leak Source: UNK
MTBE Date : / /
Max MTBE GW : 0 Parts per Billion
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : GS
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: RB Lead Underground Storage Tank
Oversight Prgm : UST
Review Date : 04/23/1993
Stop Date : 06/05/1991
Work Suspended :Not reported
Responsible PartyJ R SIMPLOT COMPANY
RP Address: PO BOX 27, BOISE, ID 83707
Global Id: T0602500146
Org Name: Not reported

CAL IDA WOOD (Continued) **S104816301**

Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 7:
Lead Agency: Regional Board
Status: Case Closed
Region: 7
Case Num: 7T2251012

CORTESE:
Region: CORTESE
Fac Address 2: Not reported

2
South
1/2-1
5100 ft.

PACIFIC BELL
108 EAST NINTH STREET
IMPERIAL, CA 92251

LUST **S105024177**
Cortese **N/A**

Relative:
Higher

Actual:
-59 ft.

State LUST:
Cross Street: IMPERIAL AVENUE
Qty Leaked: Not reported
Case Number 7T2251010
Reg Board: 7
Chemical: Diesel
Lead Agency: Regional Board
Local Agency : 13000
Case Type: Soil only
Status: Case Closed
Review Date: Not reported
Workplan: Not reported
Pollution Char: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 04/23/1993
Release Date: 09/25/1991
Cleanup Fund Id : Not reported
Discover Date : 09/25/1991
Enforcement Dt : 1/1/65
Enf Type: None Taken
Enter Date : 06/06/1994
Funding: Not reported
Staff Initials: Not reported
How Discovered: OM
How Stopped: Not reported
Interim : Not reported
Leak Cause: UNK
Leak Source: UNK
MTBE Date : / /
Max MTBE GW : 0 Parts per Billion
MTBE Tested: Not Required to be Tested.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : GS

Confirm Leak: Not reported
Prelim Assess: Not reported
Remed Plan: Not reported

PACIFIC BELL (Continued) **S105024177**

GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: RB Lead Underground Storage Tank
Oversight Prgm : UST
Review Date : 04/23/1993
Stop Date : / /
Work Suspended :Not reported
Responsible PartyPACIFIC BELL
RP Address: 525 "B" STREET, SAN DIEGO, CA 92101
Global Id: T0602500144
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 0
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 7:
Lead Agency: Regional Board
Status: Case Closed
Region: 7
Case Num: 7T2251010

CORTESE:
Region: CORTESE
Fac Address 2: 108 EAST NINTH STREET

3
WSW
1/2-1
5212 ft.

611 W. BELFORD RD.
IMPERIAL, CA 92251

CHMIRS **S100278708**
N/A

Relative:
Higher

Actual:
-59 ft.

CHMIRS:
OES Control Number: 8800588
Chemical Name: Not reported
Extent of Release: Not reported
Property Use: Residential
Incident Date: 22-FEB-88
Date Completed: 22-FEB-88
Time Completed : 1943
Agency Id Number : 13025
Agency Incident Number : 882S060
OES Incident Number : 8800588
Time Notified : 1752
Surrounding Area : 400
Estimated Temperature : 82
Property Management : K
More Than Two Substances Involved? : N
Special Studies 1 : Not reported
Special Studies 2 : Not reported
Special Studies 3 : Not reported
Special Studies 4 : Not reported
Special Studies 5 : Not reported
Special Studies 6 : Not reported

(Continued) **S100278708**

Responding Agency Personel # Of Injuries : Not reported
Responding Agency Personel # Of Fatalities : Not reported
Resp Agncy Personel # Of Decontaminated : Not reported
Others Number Of Decontaminated : Not reported
Others Number Of Injuries : Not reported
Others Number Of Fatalities : Not reported
Vehicle Make/year : Not reported
Vehicle License Number : Not reported
Vehicle State : Not reported
Vehicle Id Number : Not reported
CA/DOT/PUC/ICC Number : Not reported
Company Name : Not reported
Reporting Officer Name/ID : LT. GEORGE NEVES / 2807
Report Date : 22-FEB-88
Comments : No
Facility Telephone Number : 619 355-1191
Waterway Involved : Not reported
Waterway : Not reported
Spill Site : Not reported
Cleanup By : Not reported
Containment : Not reported
What Happened : Not reported
Type : Not reported
Other : Not reported
Chemical 1 : Not Reported
Chemical 2 : Not Reported
Chemical 3 : Not Reported
Date/Time : Not reported
Evacuations : Not reported

City	EDR ID	Site Name	Site Address	Zip	Database(s)
GLAMIS	U001573986	GLAMIS RADIO RELAY	5925 W. LAS POSITAS BLVD., RM.	92251	HIST UST
IMPERAIL	S105838294	VAIL 7 - TRIFOLIUM RESERVOR PROJECT	1/4 MILES WEST OF INTERSECTION OF LACK ROAD / WE	92251	CA SLIC
IMPERIAL	S105964519	IMPERIAL RESOURCE RECOVERY FACILITY	3505 HWY 11		SWF/LF
IMPERIAL	S103969778	IMPERIAL VALLEY RESOURCE RECOVERY CO LLC	3505 HWY 111	92251	HAZNET
IMPERIAL	S105954490	15TH STREET JUNIOR HIGH SCHOOL	15TH STREET EXTENSION/HIGHWAY 86	92251	SCH
IMPERIAL	S105024176	EMPIRE SOUTHWEST COMPANY	3393 HIGHWAY 86	92251	LUST, Cortese
IMPERIAL	S105024175	IMPERIAL MACHINERY	3175 HIGHWAY 86	92251	LUST, Cortese
IMPERIAL	S105024174	ROGERS & ROGERS	2361 HIGHWAY 86	92251	LUST, Cortese
IMPERIAL	S105024173	THOMAS MOTORS	2329 HIGHWAY 86	92251	LUST, Cortese
IMPERIAL	S104574388	RDO EQUIPMENT CO	3275 HIGHWAY 86	92251	HAZNET
IMPERIAL	S103958486	NATIONSRENT WEST INC	2396 HWY 86	92251	HAZNET
IMPERIAL	1000215271	RDO EQUIPMENT CO	3275 HWY 86	92251	RCRIS-SQG, FINDS, HIST UST
IMPERIAL	1000209741	ROGER & ROGERS NISSAN	2361 HWY 86	92251	RCRIS-SQG, FINDS, HAZNET, HIST UST
IMPERIAL	S101480311	ROSS FLYING SERVICE	1095 AIRPORT RD (IMPERIAL AIRPORT)	92251	REF
IMPERIAL	S105756771	SANTA FE PACIFIC PIPELINE - IMPERIAL	345 ATEN ROAD	92251	CA SLIC
IMPERIAL	S103987485		345 ATEN ROAD	92251	HAZNET, CHMIRS
IMPERIAL	U001573998	MANUEL'S EXXON	100 BARONI	92251	HIST UST
IMPERIAL	S105088082	TOSCO CORP	115 EAST BARRIONI	92251	HAZNET
IMPERIAL	1000857483	CENTINELA STATE PRISON	2302 BROWN RD	92251	RCRIS-SQG, FINDS
IMPERIAL	S103678486	CU1 VENTURE	CORNER OF KEYSTONE RD / DOGWOOD RD		HAZNET
IMPERIAL	S103678545	CHEMICAL LIME CO	CRNR FORESTERRD/AYTON RD	92251	HAZNET
IMPERIAL	S102360265	MEALEY, ED	DOGWOOD LATERAL 6 / ROSE CNL W OF HWY111		SWF/LF
IMPERIAL	1003879889	QUECHAN LANDFILL	FORT YUMA INDIAN RESERVATION	92251	CERC-NFRAP
IMPERIAL	U001573981	CALIFORNIA HIGHWAY PATROL	2331 US HIGHWAY 86	92251	HIST UST
IMPERIAL	U001573977	45TH DISTRICT AGRICULTURAL ASS	HIWAY 86	92251	HIST UST
IMPERIAL	S103443244	ROSS FLYING SERVICE 88-055	IMPERIAL COUNTY AIRPORT		WMUDS/SWAT
IMPERIAL	S100676251	SW MRKT'G,COTTON SEED DELINT'G	IMPERIAL COUNTY FAIRGROUNDS	92251	Toxic Pits
IMPERIAL	1000166695	UNOCAL SVC STA #6228	9093 IMPERIAL HWY	92251	RCRIS-SQG, FINDS
IMPERIAL	1000288003	SHELL OIL CO IMPERIAL PLANT	IRA ATEN ROAD	92251	RCRIS-SQG, FINDS
IMPERIAL	S104549037	WAGGONER SCHOOL SITE	JOSHUA TREE STREET	92251	SCH
IMPERIAL	S104575250	SUN FEEDING CO INC	601 E MAIN ST/PO BOX 1025	92251	HAZNET
IMPERIAL	S100858606	CIRCLE K STORES INC.#1443	115 E MAIN	92251	HAZNET
IMPERIAL	1000174110	CIRCLE K STORE #1443	115 E MAIN	92251	RCRIS-SQG, FINDS, HIST UST
IMPERIAL	S104576526	CHEMGOLD INC, PICACHO MINE	20 MILES NORTH OF WINTERHAVEN	92251	HAZNET
IMPERIAL	S104574592	NEW CHARLESTON POWER I LP	1/2 MI S KEYSTONE RD HWY 111	92251	HAZNET
IMPERIAL	S105725872	J T TOWING AUTO BODY REPAIR	467 W SATEN RD	92251	HAZNET
IMPERIAL	S103968276	HOUSEHOLD FINANCIAL SERVICES INC	723 F ST	92251	HAZNET
IMPERIAL	S100180364	IMPERIAL CUT AND FILL	WORTHINGTON RD. / NEW RIVER	92251	REF

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List
Source: EPA
Telephone: N/A
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/21/03
Date Made Active at EDR: 12/08/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 11/03/03
Elapsed ASTM days: 35
Date of Last EDR Contact: 11/03/03

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 6
Telephone: 214-655-6659

EPA Region 8
Telephone: 303-312-6774

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: N/A

Date of Government Version: 10/14/03
Date Made Active at EDR: 12/08/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 7
Date of Last EDR Contact: 11/03/03

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-413-0223
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 09/11/03
Date Made Active at EDR: 10/29/03
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 09/24/03
Elapsed ASTM days: 35
Date of Last EDR Contact: 09/24/03

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 09/11/03
Date Made Active at EDR: 10/29/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 09/24/03
Elapsed ASTM days: 35
Date of Last EDR Contact: 09/24/03

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/17/03
Date Made Active at EDR: 11/11/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 10/01/03
Elapsed ASTM days: 41
Date of Last EDR Contact: 09/08/03

RCRIS: Resource Conservation and Recovery Information System
Source: EPA
Telephone: 800-424-9346
Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs): generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs): generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs): generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/10/03
Date Made Active at EDR: 10/01/03
Database Release Frequency: Varies

Date of Data Arrival at EDR: 09/11/03
Elapsed ASTM days: 20
Date of Last EDR Contact: 11/18/03

ERNS: Emergency Response Notification System
Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/02
Date Made Active at EDR: 02/03/03
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/27/03
Elapsed ASTM days: 7
Date of Last EDR Contact: 10/27/03

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/01/01
Database Release Frequency: Biennially

Date of Last EDR Contact: 10/01/03
Date of Next Scheduled EDR Contact: 12/15/03

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: N/A
Database Release Frequency: Varies

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ROD: Records Of Decision
Source: EPA
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/09/03
Database Release Frequency: Annually
Date of Last EDR Contact: 10/08/03
Date of Next Scheduled EDR Contact: 01/05/04

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: N/A
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/21/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 11/03/03
Date of Next Scheduled EDR Contact: 02/02/04

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report
Source: EPA
Telephone: N/A
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/23/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/07/03
Date of Next Scheduled EDR Contact: 01/05/04

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 08/11/03
Database Release Frequency: Annually
Date of Last EDR Contact: 10/23/03
Date of Next Scheduled EDR Contact: 01/19/04

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/16/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/07/03
Date of Next Scheduled EDR Contact: 01/05/04

MINES: Mines Master Index File
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 08/27/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 10/01/03
Date of Next Scheduled EDR Contact: 12/29/03

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 202-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 11/21/03
Date of Next Scheduled EDR Contact: 02/23/04

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-564-3887
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/30/03
Database Release Frequency: Annually
Date of Last EDR Contact: 11/12/03
Date of Next Scheduled EDR Contact: 02/09/04

DOD: Department of Defense Sites
Source: USGS
Telephone: 703-648-5920
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 11/12/03
Date of Next Scheduled EDR Contact: 02/09/04

STORMWATER: Storm Water General Permits
Source: Environmental Protection Agency
Telephone: 202 564-0746
A listing of all facilities with Storm Water General Permits.

Date of Government Version: N/A
Database Release Frequency: Quarterly
Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

US BROWNFIELDS: A Listing of Brownfields Sites
Source: Environmental Protection Agency
Telephone: 202-566-2777
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become BCRLF cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 07/15/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 09/15/03
Date of Next Scheduled EDR Contact: 12/15/03

RMP: Risk Management Plans
Source: Environmental Protection Agency
Telephone: 202-564-8600
When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: N/A
Database Release Frequency: N/A

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 09/08/03
Date of Next Scheduled EDR Contact: 12/08/03

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-260-1531
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/01
Database Release Frequency: Annually

Date of Last EDR Contact: 09/23/03
Date of Next Scheduled EDR Contact: 12/22/03

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/19/04

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-564-2501

Date of Government Version: 10/16/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/23/03
Date of Next Scheduled EDR Contact: 12/22/03

SSTS: Section 7 Tracking Systems
Source: EPA
Telephone: 202-564-5008
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/01
Database Release Frequency: Annually

Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/19/04

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-564-2501
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/16/03	Date of Last EDR Contact: 09/23/03
Database Release Frequency: Quarterly	Date of Next Scheduled EDR Contact: 12/22/03

STATE OF CALIFORNIA ASTM STANDARD RECORDS

AWP: Annual Workplan Sites
Source: California Environmental Protection Agency
Telephone: 916-323-3400
Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 08/31/03	Date of Data Arrival at EDR: 09/02/03
Date Made Active at EDR: 09/17/03	Elapsed ASTM days: 15
Database Release Frequency: Annually	Date of Last EDR Contact: 09/02/03

CAL-SITES: Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 08/31/03	Date of Data Arrival at EDR: 09/02/03
Date Made Active at EDR: 09/17/03	Elapsed ASTM days: 15
Database Release Frequency: Quarterly	Date of Last EDR Contact: 09/02/03

CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/02	Date of Data Arrival at EDR: 07/11/03
Date Made Active at EDR: 08/07/03	Elapsed ASTM days: 27
Database Release Frequency: Varies	Date of Last EDR Contact: 11/24/03

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-9100
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 04/01/01	Date of Data Arrival at EDR: 05/29/01
Date Made Active at EDR: 07/26/01	Elapsed ASTM days: 58
Database Release Frequency: No Update Planned	Date of Last EDR Contact: 10/27/03

NOTIFY 65: Proposition 65 Records
Source: State Water Resources Control Board
Telephone: 916-445-3846
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93	Date of Data Arrival at EDR: 11/01/93
Date Made Active at EDR: 11/19/93	Elapsed ASTM days: 18
Database Release Frequency: No Update Planned	Date of Last EDR Contact: 10/20/03

TOXIC PITS: Toxic Pits Cleanup Act Sites
Source: State Water Resources Control Board
Telephone: 916-227-4364
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/95	Date of Data Arrival at EDR: 08/30/95
Date Made Active at EDR: 09/26/95	Elapsed ASTM days: 27
Database Release Frequency: No Update Planned	Date of Last EDR Contact: 11/03/03

SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-341-6320
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/12/03	Date of Data Arrival at EDR: 09/15/03
Date Made Active at EDR: 10/16/03	Elapsed ASTM days: 31
Database Release Frequency: Quarterly	Date of Last EDR Contact: 09/15/03

WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/00	Date of Data Arrival at EDR: 04/10/00
Date Made Active at EDR: 05/10/00	Elapsed ASTM days: 30
Database Release Frequency: Quarterly	Date of Last EDR Contact: 09/12/03

LUST: Leaking Underground Storage Tank Information System
Source: State Water Resources Control Board
Telephone: 916-341-5740
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 04/02/03	Date of Data Arrival at EDR: 04/16/03
Date Made Active at EDR: 04/25/03	Elapsed ASTM days: 9
Database Release Frequency: Quarterly	Date of Last EDR Contact: 10/14/03

CA BOND EXP. PLAN: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89	Date of Data Arrival at EDR: 07/27/94
Date Made Active at EDR: 08/02/94	Elapsed ASTM days: 6
Database Release Frequency: No Update Planned	Date of Last EDR Contact: 05/31/94

CA UST:

UST: Active UST Facilities
Source: SWRCB
Telephone: 916-341-5700
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 04/02/03	Date of Data Arrival at EDR: 04/16/03
Date Made Active at EDR: 04/30/03	Elapsed ASTM days: 14
Database Release Frequency: Semi-Annually	Date of Last EDR Contact: 10/14/03

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/30/03
Date Made Active at EDR: 12/23/03
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 22
Date of Last EDR Contact: 12/01/03

INDIAN UST: Underground Storage Tanks on Indian Land
Source: EPA Region 9
Telephone: 415-972-3368

Date of Government Version: 03/01/03
Date Made Active at EDR: 04/11/03
Database Release Frequency: Varies
Date of Data Arrival at EDR: 03/31/03
Elapsed ASTM days: 11
Date of Last EDR Contact: 11/24/03

CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-445-6532
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94
Date Made Active at EDR: 09/29/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 09/05/95
Elapsed ASTM days: 24
Date of Last EDR Contact: 12/28/98

HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5700
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90
Date Made Active at EDR: 02/12/91
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 01/25/91
Elapsed ASTM days: 18
Date of Last EDR Contact: 07/26/01

STATE OF CALIFORNIA ASTM SUPPLEMENTAL RECORDS

AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-341-5712
Registered Aboveground Storage Tanks.

Date of Government Version: 07/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 11/03/03
Date of Next Scheduled EDR Contact: 02/02/04

CLEANERS: Cleaner Facilities
Source: Department of Toxic Substance Control
Telephone: 916-225-0873
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 03/11/03
Database Release Frequency: Annually
Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/05/04

CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-657-1571
Sites which have been issued waste discharge requirements.

Date of Government Version: 09/22/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 09/24/03
Date of Next Scheduled EDR Contact: 12/22/03

DEED: List of Deed Restrictions
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes.

Date of Government Version: 10/07/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 10/08/03
Date of Next Scheduled EDR Contact: 01/05/04

NFA: No Further Action Determination
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

EMI: Emissions Inventory Data
Source: California Air Resources Board
Telephone: 916-322-2990
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/01
Database Release Frequency: Varies
Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/19/04

REF: Unconfirmed Properties Referred to Another Agency
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

NFE: Properties Needing Further Evaluation
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process. PEA in Progress indicates properties where DTSC is currently conducting a PEA. PEA Required indicates properties where DTSC has determined a PEA is required, but not currently underway.

Date of Government Version: 11/30/03 Date of Last EDR Contact: 12/01/03
Database Release Frequency: Quarterly Date of Next Scheduled EDR Contact: 03/01/04

HAZNET: Hazardous Waste Information System
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/01 Date of Last EDR Contact: 11/11/03
Database Release Frequency: Annually Date of Next Scheduled EDR Contact: 02/09/04

LOCAL RECORDS

ALAMEDA COUNTY:

Local Oversight Program Listing of UGT Cleanup Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 12/09/03 Date of Last EDR Contact: 10/27/03
Database Release Frequency: Semi-Annually Date of Next Scheduled EDR Contact: 01/26/04

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 07/03/03 Date of Last EDR Contact: 10/27/03
Database Release Frequency: Semi-Annually Date of Next Scheduled EDR Contact: 01/26/04

CONTRA COSTA COUNTY:

Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 12/01/03 Date of Last EDR Contact: 12/01/03
Database Release Frequency: Semi-Annually Date of Next Scheduled EDR Contact: 03/01/04

FRESNO COUNTY:

CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/07/03 Date of Last EDR Contact: 10/08/03
Database Release Frequency: Semi-Annually Date of Next Scheduled EDR Contact: 02/09/04

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Kern County Sites and Tanks Listing.

Date of Government Version: 07/25/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 09/08/03
Date of Next Scheduled EDR Contact: 12/08/03

LOS ANGELES COUNTY:

List of Solid Waste Facilities
Source: La County Department of Public Works
Telephone: 818-458-5185

Date of Government Version: 06/03/03
Database Release Frequency: Varies
Date of Last EDR Contact: 11/21/03
Date of Next Scheduled EDR Contact: 02/16/04

City of El Segundo Underground Storage Tank
Source: City of El Segundo Fire Department
Telephone: 310-524-2236

Date of Government Version: 09/11/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 11/17/03
Date of Next Scheduled EDR Contact: 02/16/04

City of Long Beach Underground Storage Tank
Source: City of Long Beach Fire Department
Telephone: 562-570-2543

Date of Government Version: 03/28/03
Database Release Frequency: Annually
Date of Last EDR Contact: 11/24/03
Date of Next Scheduled EDR Contact: 02/23/04

City of Torrance Underground Storage Tank
Source: City of Torrance Fire Department
Telephone: 310-618-2973

Date of Government Version: 09/03/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 11/17/03
Date of Next Scheduled EDR Contact: 02/16/04

City of Los Angeles Landfills
Source: Engineering & Construction Division
Telephone: 213-473-7869

Date of Government Version: 03/01/02
Database Release Frequency: Varies
Date of Last EDR Contact: 09/15/03
Date of Next Scheduled EDR Contact: 12/15/03

HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/30/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 11/17/03
Date of Next Scheduled EDR Contact: 02/16/04

Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/07/03
Database Release Frequency: Annually

Date of Last EDR Contact: 11/17/03
Date of Next Scheduled EDR Contact: 02/16/04

San Gabriel Valley Areas of Concern
Source: EPA Region 9
Telephone: 415-972-3178
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 07/06/99
Date of Next Scheduled EDR Contact: N/A

MARIN COUNTY:

Underground Storage Tank Sites
Source: Public Works Department Waste Management
Telephone: 415-499-6647
Currently permitted USTs in Marin County.

Date of Government Version: 08/19/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 11/03/03
Date of Next Scheduled EDR Contact: 02/02/04

NAPA COUNTY:

Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 10/02/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 09/30/03
Date of Next Scheduled EDR Contact: 12/29/03

Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 10/02/03
Database Release Frequency: Annually

Date of Last EDR Contact: 09/30/03
Date of Next Scheduled EDR Contact: 12/29/03

ORANGE COUNTY:

List of Underground Storage Tank Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 07/01/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/11/03
Date of Next Scheduled EDR Contact: 12/08/03

List of Underground Storage Tank Facilities
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 09/02/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/11/03
Date of Next Scheduled EDR Contact: 12/08/03

List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 10/24/00
Database Release Frequency: Annually

Date of Last EDR Contact: 09/11/03
Date of Next Scheduled EDR Contact: 12/08/03

PLACER COUNTY:

Master List of Facilities
Source: Placer County Health and Human Services
Telephone: 530-889-7312
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 10/16/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 09/23/03
Date of Next Scheduled EDR Contact: 12/22/03

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Source: Department of Public Health
Telephone: 909-358-5055
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/03/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/19/04

Underground Storage Tank Tank List
Source: Health Services Agency
Telephone: 909-358-5055

Date of Government Version: 05/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/19/04

SACRAMENTO COUNTY:

CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406

Date of Government Version: 07/17/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/03/03
Date of Next Scheduled EDR Contact: 02/02/04

ML - Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 07/17/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/03/03
Date of Next Scheduled EDR Contact: 02/02/04

SAN BERNARDINO COUNTY:

Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 09/30/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 09/09/03
Date of Next Scheduled EDR Contact: 12/08/03

SAN DIEGO COUNTY:

Solid Waste Facilities
Source: Department of Health Services
Telephone: 619-338-2209
San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00
Database Release Frequency: Varies
Date of Last EDR Contact: 11/21/03
Date of Next Scheduled EDR Contact: 02/23/04

Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 10/31/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/07/03
Date of Next Scheduled EDR Contact: 01/05/04

SAN FRANCISCO COUNTY:

Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 09/11/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 09/08/03
Date of Next Scheduled EDR Contact: 12/08/03

Underground Storage Tank Information
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 09/11/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 09/08/03
Date of Next Scheduled EDR Contact: 12/08/03

SAN MATEO COUNTY:

Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921

Date of Government Version: 11/24/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 10/27/03
Date of Next Scheduled EDR Contact: 01/26/04

Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 11/13/03
Database Release Frequency: Annually

Date of Last EDR Contact: 10/13/03
Date of Next Scheduled EDR Contact: 01/12/04

SANTA CLARA COUNTY:

Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600

Date of Government Version: 07/02/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 09/30/03
Date of Next Scheduled EDR Contact: 12/29/03

Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659

Date of Government Version: 10/01/03
Database Release Frequency: Annually

Date of Last EDR Contact: 09/08/03
Date of Next Scheduled EDR Contact: 12/08/03

SOLANO COUNTY:

Leaking Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 08/21/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/15/03
Date of Next Scheduled EDR Contact: 12/15/03

Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 08/21/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/15/03
Date of Next Scheduled EDR Contact: 12/15/03

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
Source: Department of Health Services
Telephone: 707-565-6565

Date of Government Version: 10/01/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/27/03
Date of Next Scheduled EDR Contact: 01/26/04

SUTTER COUNTY:

Underground Storage Tanks
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500

Date of Government Version: 07/01/01
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/27/03
Date of Next Scheduled EDR Contact: 01/05/04

VENTURA COUNTY:

Inventory of Illegal Abandoned and Inactive Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 09/01/02
Database Release Frequency: Annually
Date of Last EDR Contact: 11/26/03
Date of Next Scheduled EDR Contact: 02/23/04

Listing of Underground Tank Cleanup Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 09/26/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 09/15/03
Date of Next Scheduled EDR Contact: 12/15/03

Underground Tank Closed Sites List
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 07/30/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/16/03
Date of Next Scheduled EDR Contact: 01/12/04

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/02/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 09/15/03
Date of Next Scheduled EDR Contact: 12/15/03

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Source: Yolo County Department of Health
Telephone: 530-666-8646

Date of Government Version: 10/29/03
Database Release Frequency: Annually
Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/19/04

California Regional Water Quality Control Board (RWQCB) LUST Records

LUST REG 1: Active Toxic Site Investigation
Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 11/21/03
Date of Next Scheduled EDR Contact: 02/23/04

LUST REG 2: Fuel Leak List
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457

Date of Government Version: 03/28/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/14/03
Date of Next Scheduled EDR Contact: 01/12/04

LUST REG 3: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147

Date of Government Version: 05/19/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 11/17/03
Date of Next Scheduled EDR Contact: 02/16/04

LUST REG 4: Underground Storage Tank Leak List
Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 08/09/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 09/30/03
Date of Next Scheduled EDR Contact: 12/29/03

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-255-3125

Date of Government Version: 07/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/16/03
Date of Next Scheduled EDR Contact: 01/05/04

LUST REG 6L: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/03
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 09/08/03
Date of Next Scheduled EDR Contact: 12/08/03

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491

Date of Government Version: 11/13/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 10/07/03
Date of Next Scheduled EDR Contact: 01/05/04

LUST REG 7: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-346-7491

Date of Government Version: 07/02/02
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 09/30/03
Date of Next Scheduled EDR Contact: 12/29/03

LUST REG 8: Leaking Underground Storage Tanks
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4498
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/16/03
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 11/12/03
Date of Next Scheduled EDR Contact: 02/09/04

LUST REG 9: Leaking Underground Storage Tank Report
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/01	Date of Last EDR Contact: 10/20/03
Database Release Frequency: No Update Planned	Date of Next Scheduled EDR Contact: 01/19/04

California Regional Water Quality Control Board (RWQCB) SLIC Records

SLIC REG 1: Active Toxic Site Investigations
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220

Date of Government Version: 04/03/03	Date of Last EDR Contact: 11/21/03
Database Release Frequency: Semi-Annually	Date of Next Scheduled EDR Contact: 02/23/04

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 03/28/03	Date of Last EDR Contact: 10/14/03
Database Release Frequency: Quarterly	Date of Next Scheduled EDR Contact: 01/12/04

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 09/16/03	Date of Last EDR Contact: 11/17/03
Database Release Frequency: Semi-Annually	Date of Next Scheduled EDR Contact: 02/16/04

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 10/01/03	Date of Last EDR Contact: 10/27/03
Database Release Frequency: Quarterly	Date of Next Scheduled EDR Contact: 01/26/04

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-855-3075
Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 10/20/03	Date of Last EDR Contact: 10/07/03
Database Release Frequency: Semi-Annually	Date of Next Scheduled EDR Contact: 01/05/04

SLIC REG 6L: SLIC Sites
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574

Date of Government Version: 09/09/03	Date of Last EDR Contact: 09/08/03
Database Release Frequency: Varies	Date of Next Scheduled EDR Contact: 12/08/03

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583

Date of Government Version: 05/08/03	Date of Last EDR Contact: 10/07/03
Database Release Frequency: Semi-Annually	Date of Next Scheduled EDR Contact: 01/05/04

SLIC REG 7: SLIC List
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491

Date of Government Version: 05/29/03
Database Release Frequency: Varies

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 02/23/04

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-3298

Date of Government Version: 04/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/20/03
Date of Next Scheduled EDR Contact: 01/05/04

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980

Date of Government Version: 12/01/03
Database Release Frequency: Annually

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/04/04

EDR PROPRIETARY HISTORICAL DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

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BROWNFIELDS DATABASES

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

US BROWNFIELDS: A Listing of Brownfields Sites
Source: Environmental Protection Agency
Telephone: 202-566-2777
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become BCRLF cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: N/A
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

26-ACRE VACANT PARCEL
NWC NECKEL ROAD AND HWY 86
IMPERIAL, CA 92251

TARGET PROPERTY COORDINATES

Latitude (North):	32.862499 - 32˚ 51' 45.0"
Longitude (West):	115.570999 - 115˚ 34' 15.6"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	633706.6
UTM Y (Meters):	3636758.0
Elevation:	60 ft. below sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

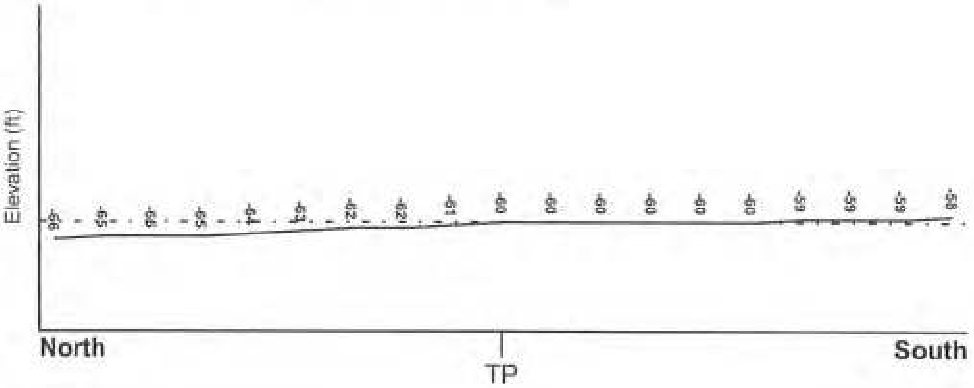
TOPOGRAPHIC INFORMATION

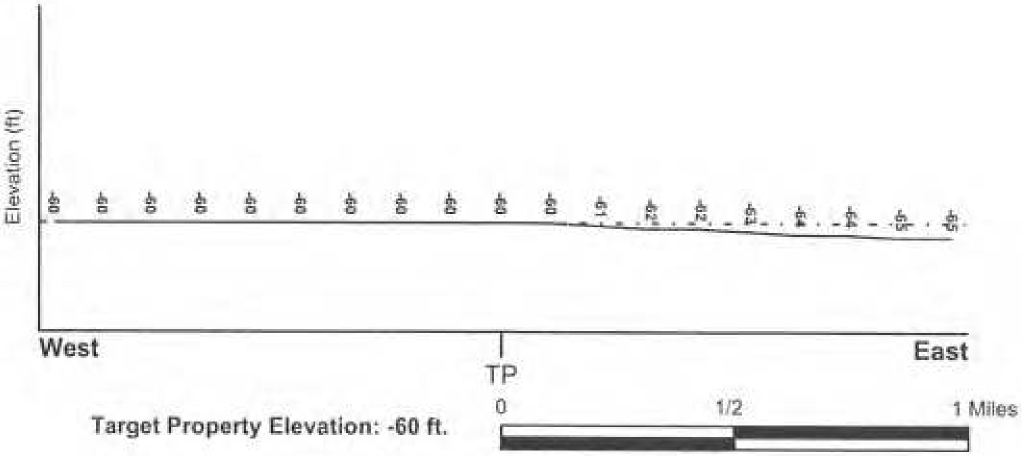
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map:	32115-G5 EL CENTRO, CA
General Topographic Gradient:	General NE
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
IMPERIAL, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0600650800B

Additional Panels in search area: 0600710800B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
EL CENTRO	Not Available

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles

Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

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* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT **GEOLOGIC AGE IDENTIFICATION**

Era:	Cenozoic	Category:	Stratifed Sequence
System:	Quaternary		
Series:	Quaternary		
Code:	Q *(decoded above as Era, System & Series)*		

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	IMPERIAL
Soil Surface Texture:	silty clay loam
Hydrologic Group:	Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.
Soil Drainage Class:	Not reported

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min:	> 60 inches
Depth to Bedrock Max:	> 60 inches

Soil Layer Information

	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	12 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.20 Min: 0.06	Max: 8.40 Min: 7.90

Soil Layer Information

	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
2	12 inches	60 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.20 Min: 0.06	Max: 8.40 Min: 7.90

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures:	loam loamy fine sand silty clay silt loam gravelly - sand loamy very fine sand very fine sandy loam sand fine sandy loam
Surficial Soil Types:	loam loamy fine sand silty clay silt loam gravelly - sand loamy very fine sand very fine sandy loam sand fine sandy loam
Shallow Soil Types:	No Other Soil Types
Deeper Soil Types:	clay loam loam very gravelly - coarse sand sandy clay loam clay sand stratified silty clay loamy fine sand

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS0127621	1/2 - 1 Mile SSE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

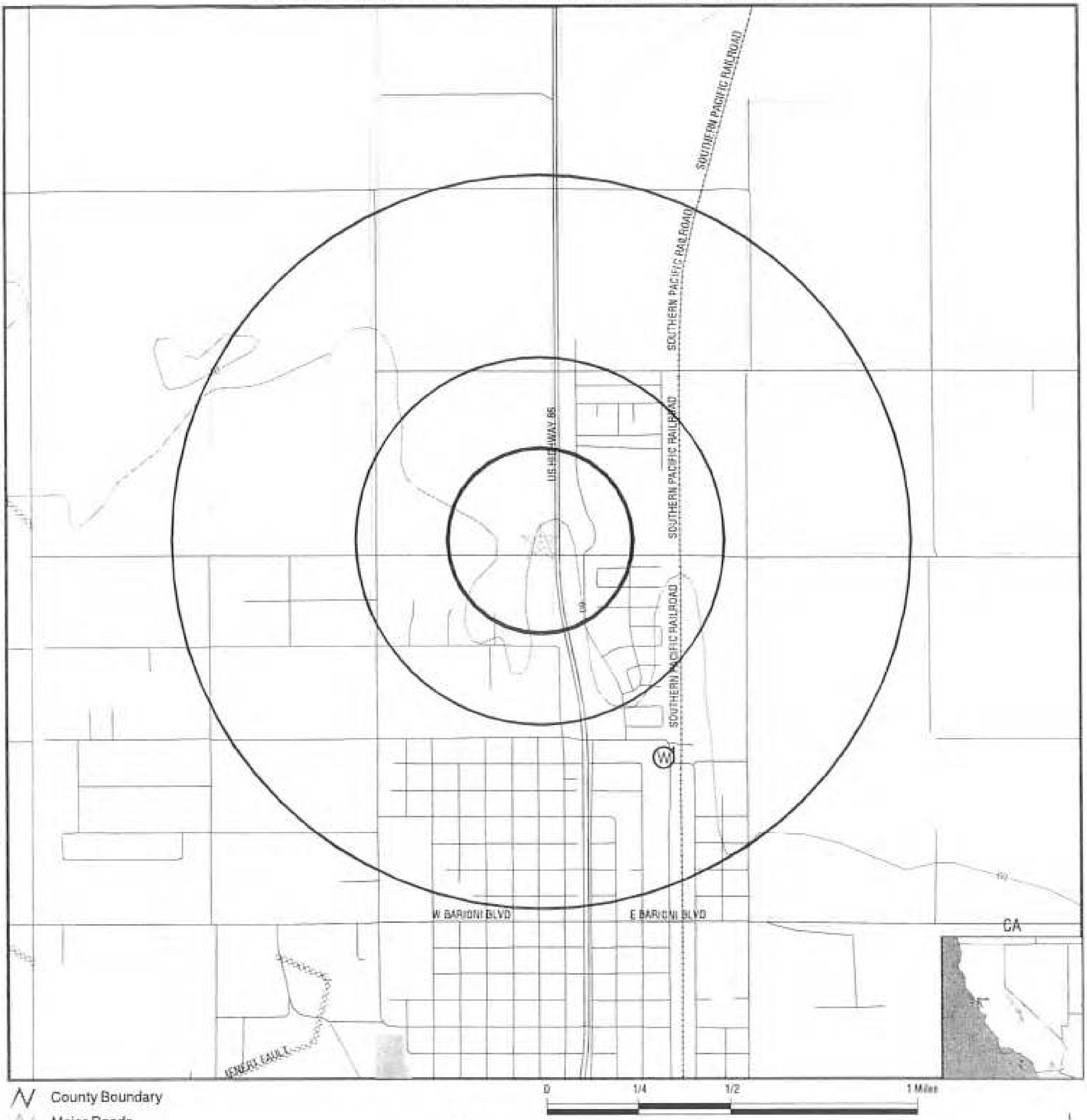
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 01105407.1r



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- ◎ Earthquake epicenter, Richter 5 or greater
- Ⓦ Water Wells
- Ⓟ Public Water Supply Wells
- ● Cluster of Multiple Icons

- Groundwater Flow Direction
- (C I) Indeterminate Groundwater Flow at Location
- (G V) Groundwater Flow Varies at Location
- (H D) Closest Hydrogeological Data
- ● Oil, gas or related wells

No contour lines were detected within this map area.

TARGET PROPERTY: 26-Acre Vacant Parcel
ADDRESS: NWC Neckel Road and Hwy 86
CITY/STATE/ZIP: Imperial CA 92251
LAT/LONG: 32.8625 / 115.5710

CUSTOMER: Southland Geotechnical
CONTACT: Steven Williams
INQUIRY #: 01105407.1r
DATE: December 30, 2003 1:13 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation	Database	EDR ID Number
1 **SSE** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS0127621**

Agency: USGS
Site ID: 325114115335201
Site Name: 015S014E18C001S
Dec. Latitude: 32.85394
Dec. Longitude: -115.56527
Coord Sys: NAD83
State: CA
County: Imperial County
Altitude: -64.97
Hydrologic code: 18100200
Topographic: Flat surface
Site Type: Ground-water other than Spring
Const Date: 19580425
Inven Date: Not Reported
Well Type: Single well, other than collector or Ranney type
Primary Aquifer: Not Reported
Aquifer type: Not Reported
Well depth: 379
Hole depth: 500
Source: Not Reported
Project no: Not Reported

Ground-water levels, Number of Measurements: 134

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2002-10-30	8.67		2002-03-13	8.72	
2001-10-23	8.57		2001-03-27	8.52	
2000-10-25	8.24		2000-03-29	8.02	
1999-10-25	8.00		1999-03-23	8.13	
1998-10-27	7.81		1998-03-23	7.88	
1997-10-21	7.69		1997-03-18	8.01	
1996-10-17	7.81		1996-03-20	7.99	
1995-10-17	7.76		1995-03-30	7.83	
1994-10-26	7.49		1994-03-14	8.11	
1993-10-19	7.92		1993-04-12	8.07	
1992-09-22	8.15		1992-03-16	8.14	
1991-10-02	7.69		1991-03-13	8.01	
1990-10-31	7.99		1990-03-20	8.24	
1989-11-02	8.20		1985-09-30	7.73	
1985-07-24	7.77		1985-06-20	7.68	
1985-05-19	7.56		1985-04-19	7.59	
1985-03-19	7.63		1985-02-19	7.66	
1985-01-17	7.70		1984-12-18	7.62	
1984-11-20	7.48		1984-10-16	7.45	
1984-09-14	7.51		1984-08-16	7.58	
1984-07-19	7.59		1984-06-27	7.50	
1984-05-29	7.41		1984-05-01	7.36	
1984-04-03	7.50		1984-03-06	7.56	
1984-02-07	7.61		1984-01-09	7.70	
1983-12-16	7.60		1983-11-09	7.51	
1983-10-14	7.45		1983-09-15	7.50	
1983-08-17	7.49		1983-07-19	7.52	
1983-06-22	7.42		1983-06-16	7.40	
1983-05-19	7.36		1983-04-20	7.37	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1983-03-15	7.47		1983-02-17	7.46	
1983-01-18	7.44		1982-12-22	7.33	
1982-11-22	7.48		1982-10-20	7.50	
1982-09-20	7.54		1982-08-24	7.70	
1982-07-23	7.85		1982-06-22	7.78	
1982-05-25	7.57		1982-04-28	7.52	
1982-03-31	7.62		1982-03-19	7.57	
1982-03-05	7.61		1982-02-04	7.64	
1982-02-03	7.66		1982-01-07	7.64	
1981-12-07	7.51		1981-11-12	7.44	
1981-10-14	7.28		1981-09-17	7.32	
1981-08-17	7.31		1981-07-22	7.38	
1981-06-22	7.29		1981-05-28	7.19	
1981-04-29	7.27		1981-04-07	7.24	
1981-03-10	7.32		1981-02-12	7.32	
1981-01-16	7.19		1980-12-17	7.09	
1980-11-19	6.99		1980-10-17	6.90	
1980-09-19	6.93		1980-08-21	7.03	
1980-07-24	6.94		1980-06-22	6.76	
1980-05-27	6.60		1980-04-29	6.38	
1980-04-02	6.47		1980-03-06	6.60	
1980-02-06	6.45		1980-01-10	6.30	
1979-12-13	5.99		1979-11-14	5.39	
1979-10-22	4.15		1979-10-16	2.61	
1979-09-19	7.60		1979-08-23	7.70	
1979-07-24	7.65		1979-06-27	7.69	
1979-06-12	7.69		1979-06-01	7.64	
1979-05-03	7.63		1979-04-06	7.78	
1979-03-07	7.96		1979-02-08	7.93	
1979-01-17	7.74		1978-12-19	7.67	
1978-11-21	7.59		1978-10-24	7.57	
1978-09-26	7.56		1978-08-29	7.54	
1978-08-02	7.54		1978-07-05	7.50	
1978-06-06	7.37		1978-05-08	7.35	
1978-04-20	7.48		1978-04-12	7.48	
1978-03-14	7.62		1978-02-13	7.57	
1961-06-16	6.29		1961-02-16	6.29	
1958-05-09	6.50		1958-04-25	6.30	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zip	Total Sites	> 4 Pci/L	Pct. > 4 Pci/L
92251	2	0	0.00

Federal EPA Radon Zone for IMPERIAL County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for IMPERIAL COUNTY, CA

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.450 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations for District 2, 3, 5 and 6
Source: Department of Conservation
Telephone: 916-323-1779

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

APPENDIX F

GS Lyon

Steven K. Williams, CEG
Project Engineering Geologist

Education

M.S. Geology
University of Utah, 1993
B.S. Geology
University of Utah, 1989

Registration

Registered Geologist	
Arizona	3759
California	6975
Certified Engineering Geologist	
California	2261

Professional Experience

2000 – Present	Project Geologist GS Lyon Consultants, Inc.
1994 - 2000	Staff Geologist GS Lyon Consultants, Inc.
1994	Field Geologist Bureau of Land Management
1991 - 1992	Exploration Geologist Kennecott Corporation

Summary of Experience

Mr. Williams has performed geotechnical investigations in southern California and southwestern Arizona. His field experience includes logging of soil borings and exploratory trenches, collection and documentation of soil samples, collection of field geotechnical data, and monitoring pile driving operations. Mr. Williams is also responsible for preparing computer generated data and figures, drafting and subsequent writing of geotechnical reports for a variety of projects including road improvements, fault studies, liquefaction potential evaluation, foundation preparation, seepage studies, structural distress, and soil investigations. He has performed geotechnical, geologic, and environmental studies for a wide variety of projects including correctional facilities, water and wastewater facilities, schools, residential subdivisions, commercial developments, and landfills throughout southern California and southwestern Arizona.

Mr. Williams also performs Phase I Environmental Site Assessments throughout the Imperial and Coachella Valleys. The scope of work for these projects typically include a site reconnaissance, review of government records pertaining to previous site uses, and preparation of a report identifying potential environmental risks. He also conducts investigations for the potential of asbestos-containing materials and lead-based paint in old building projects and potential for soil contamination by hydrocarbons, pesticides, and other hazardous materials.

Professional Affiliations

Geological Society of America, Member

Selected Project Experience

- **El Centro Seniors Apartments, El Centro, CA**
Performed Phase I and Phase II environmental site assessments for apartment complex at old school district office site with underground storage tanks.
- **Central Main Canal Seepage Study, Imperial, CA**
Conducted 6-month groundwater seepage study for Imperial Irrigation District to evaluate high groundwater levels in Sandalwood Glen Subdivision
- **Gateway to the Americas, Calexico, CA**
Conducted Phase I ESA, geologic hazards study and geotechnical investigation including liquefaction evaluation for 1,700 acre development associated with new Port of Entry east of Calexico
- **El Centro Magistrate Court, El Centro, CA**
Conducted geotechnical investigation and Phase I ESA for new Federal Magistrate Court building at site with soft soil conditions requiring foundation settlement analysis
- **El Centro Regional Medical Center, El Centro, CA**
Conducted Phase I ESA and geotechnical investigation for 50,000 sf, 2-story addition to the medical center's emergency room, operating rooms, and recovery rooms.
- **Brawley Union High School, Brawley, CA**
Conducted Phase II investigation for PCB and lead contamination of surficial soil and hydrocarbon contamination of subsurface soil of a property proposed for purchase.
- **Cal Energy Geothermal Plants, Calipatria, CA**
Conducted geotechnical investigation using CPT and hollow-stem auger methods for proposed geothermal power plant, mineral extraction facilities, and pipelines
- **EW Corporation Site, Westmorland, CA**
Conducted Phase II investigation for hydrocarbon contamination of subsurface soil of a service station site with leaking underground storage tanks prior to property purchase
- **Various Apartment Complexes, Imperial County, CA**
Conducted Phase I environmental investigation at numerous proposed apartment complex site within the Imperial Valley

APPENDIX F

Noise Analysis

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UltraSystems
environmental management planning

NOISE ANALYSIS
FOR
HOLIDAY INN HOTEL & RESORT
CITY OF IMPERIAL, CALIFORNIA

Prepared For:

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2275 Huntington Drive #534
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16431 Scientific Way
Irvine, California 92618-4355

Project No. 5778

Updated September 2012

This noise analysis was prepared in accordance with Section 15063(d)(3) and Appendix G of the *State CEQA Guidelines* to determine the potential significant noise effects on the physical environment that could result from the implementation of the proposed project.

Report Preparers:

Name & Title: MICHAEL ROGOZEN, Senior Principal Engineer

Signature: ____________________ Date: ____________

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1.0 INTRODUCTION

Oasis Growth Partners, LLC (San Marino, California) is proposing to develop the "Alliance Regional Center" on a 25-acre site at the northwest corner of the intersection of Neckel Road and State Highway 86 (North Imperial Avenue) in Imperial, California.[1] The project will include a Holiday Inn hotel, two restaurants, and an office building. **Figure 1** (Regional Location) shows the site in relation to the surrounding area. The immediate vicinity of the project is shown in **Figure 2** (Project Vicinity).

The objective of this report is to assess the impacts of noise from and on the project. The following analysis provides a discussion of the fundamentals of sound; an examination of federal, state, and local noise guidelines and policies; a review of existing conditions; an evaluation of potential noise impacts associated with the proposed project; and the mitigation for all identified significant or potentially significant impacts.

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[1] "Alliance Regional Center." ARC Booklet EN 20100525. Oasis Growth Partners, LLC, San Marino, California.

UltraSystems

Source: Google Earth, 2010

Figure 1. Regional Location
Holiday Inn

UltraSystems

Source: Google Earth, 2010

Figure 2. Project Vicinity
Holiday Inn

🟥 Study Area Boundary
🟦 Approximate Limits of Drainage

2.0 BACKGROUND INFORMATION

2.1 Characteristics of Sound

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The decibel (dB) scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Because the human ear is not equally sensitive to all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against upper and lower frequencies in a manner approximating the sensitivity of the human ear. The scale is based on a reference pressure level of 20 micropascals (zero dBA). The scale ranges from zero (for the average least perceptible sound) to about 130 (for the average human pain level).

The normal range of conversation is between 34 and 66 dBA. Between 70 and 90 dBA, sound is distracting and presents an obstacle to conversation, thinking, or learning. Above 90 dBA, sound can cause permanent hearing loss. Examples of various sound levels in different environments are shown in **Table 1** (Typical Sound Levels).

Table 1 - Typical Sound Levels

Common Sounds	A-Weighted Sound Level in Decibels	Subjective Impression
Oxygen Torch	120	Pain Threshold
Rock Band	110	
Pile Driver at 50 feet	100	Very Loud
Ambulance Siren at 100 feet	90	
Garbage disposal	80	Moderately Loud
Vacuum Cleaner at 10 feet	70	
Air Conditioner at 100 feet	60	
Quiet Urban Daytime	50	Quiet
Quiet Urban Nighttime	40	
Bedroom at Night	30	
Recording Studio	20	Just Audible
	10	Threshold of Hearing
	0	

Sources: Aviation Planning Associates. 1978. Calculations of Maximum A-weighted Sound Levels (dBA) Resulting from Civil Aircraft Operations.

A noise environment consists of a base of steady “background” noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway.

To the human ear, a sound 10 dBA higher than another is judged to be twice as loud; 20 dBA higher is four times as loud; and so forth. According to the U.S. Environmental Protection Agency (USEPA), a difference of more than 3 dBA is a perceptible change in environmental noise, while a 5 dBA difference typically causes a change in community reaction, and an increase of 10 dBA is perceived by people as doubling of loudness.[4]

2.2 Noise Measurement Scales

Several rating scales have been developed to analyze adverse effects of community noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise on people depends largely upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. Those that are applicable to this analysis are as follows:

- L_{eq}, the equivalent noise level, is an average of sound level over a defined time period (such as 1 minute, 15 minutes, 1 hour or 24 hours). Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure.
- L_{90} is a noise level that is exceeded 90 percent of the time at a given location; it is often used as a measure of “background” noise.
- CNEL, the Community Noise Equivalent Level, is a 24-hour average L_{eq} with a 5 dBA “penalty” added to noise during the hours of 7:00 p.m. to 10:00 p.m., and a 10 dBA penalty added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a calculation of 66.7 dBA CNEL.
- L_{dn}, the day-night average noise, is a 24-hour average L_{eq} with an additional 10 dBA “penalty” added to noise that occurs between 10 p.m. and 7 a.m. The L_{dn} metric yields similar values (within 1 dBA) as do the CNEL metric. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

2.3 Noise Attenuation

The noise level from a particular source generally declines as the distance to the receptor increases. Other factors such as the weather and reflecting or shielding also intensify or reduce the noise level at any given location. Typically, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA. The U.S. Department of Housing and Urban Development (HUD) has stated that exterior noise levels can normally be reduced by 15 dBA inside buildings constructed with no special noise insulation.[5] The USEPA estimates that

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[4] *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. U.S. Environmental Protection Agency (USEPA). (March 1974).

[5] *Noise Guidebook.* U.S. Department of Housing and Urban Development (HUD) (1985).

residences in "warm" climates provide at least 12 dBA of exterior-to-interior noise attenuation with windows open and 24 dBA with windows closed.[6]

Noise from traffic on roads depends on the volume and speed of traffic, and the distance from the traffic. A commonly used rule of thumb for traffic noise is that for every doubling of distance from the road, atmospheric spreading over "hard" or "soft" sites reduces the noise level by about 3 or 4.5 dBA, respectively. For a stationary source, the noise is reduced by at least 6 dBA for each doubling of distance. Further, because of the logarithmic nature of the decibel scale, a doubling of traffic on any given roadway or doubling a stationary source would cause a noise increase of approximately 3 dBA.

3.0 PROJECT SETTING

3.1 Project Description

The proposed project site is located on a 25-acre, commercially zoned site at the northwest corner of Neckel Road and State Route 86 in the City of Imperial. The land adjacent to the project site on the north is in agricultural use. A development consisting of residences, a school and a park (the "Morningstar" project) is planned for an area immediately to the west that is also currently in agriculture. Across State Route 86 on the east is a residential neighborhood. An approximately 6-foot-high wall is between the highway and the residential neighborhood. Another residential neighborhood is at the southeast corner of Neckel Road and State Route 86. The land immediately south of the Project, across Neckel Road, is vacant. To the west of the vacant parcel, also along the south side of Neckel Road, are residential homes.

Planned elements of Phase I of the Alliance Regional Center[7] are shown in **Figure 3** (Site Plan). Phase I of the Project will develop 8 acres. The project will include development of a 108-room, 4-story hotel, a fast food restaurant with a drive-through, a quality restaurant, and one 10,000-square foot office building. In addition, tunneling will occur below State Route 86 to extend utility lines as well as adding a new lift station. Access to the Phase I development will be via a new north-south street (called "A Street"), which will form a tee intersection with Neckel Road. UltraSystems assumed that construction would start in January 2012 and that the Project would be operational by December 1, 2012.

3.2 Sensitive Land Uses

The nearest sensitive land use is the residential neighborhood on the east side of Neckel Road. The residence closest to the Project boundary is about 295 feet away. The nearest non-residential sensitive receptor in the area is the Frank M. Wright Middle School, (885 North Imperial Avenue), which is about 2,200 feet south of the Project's southern boundary.

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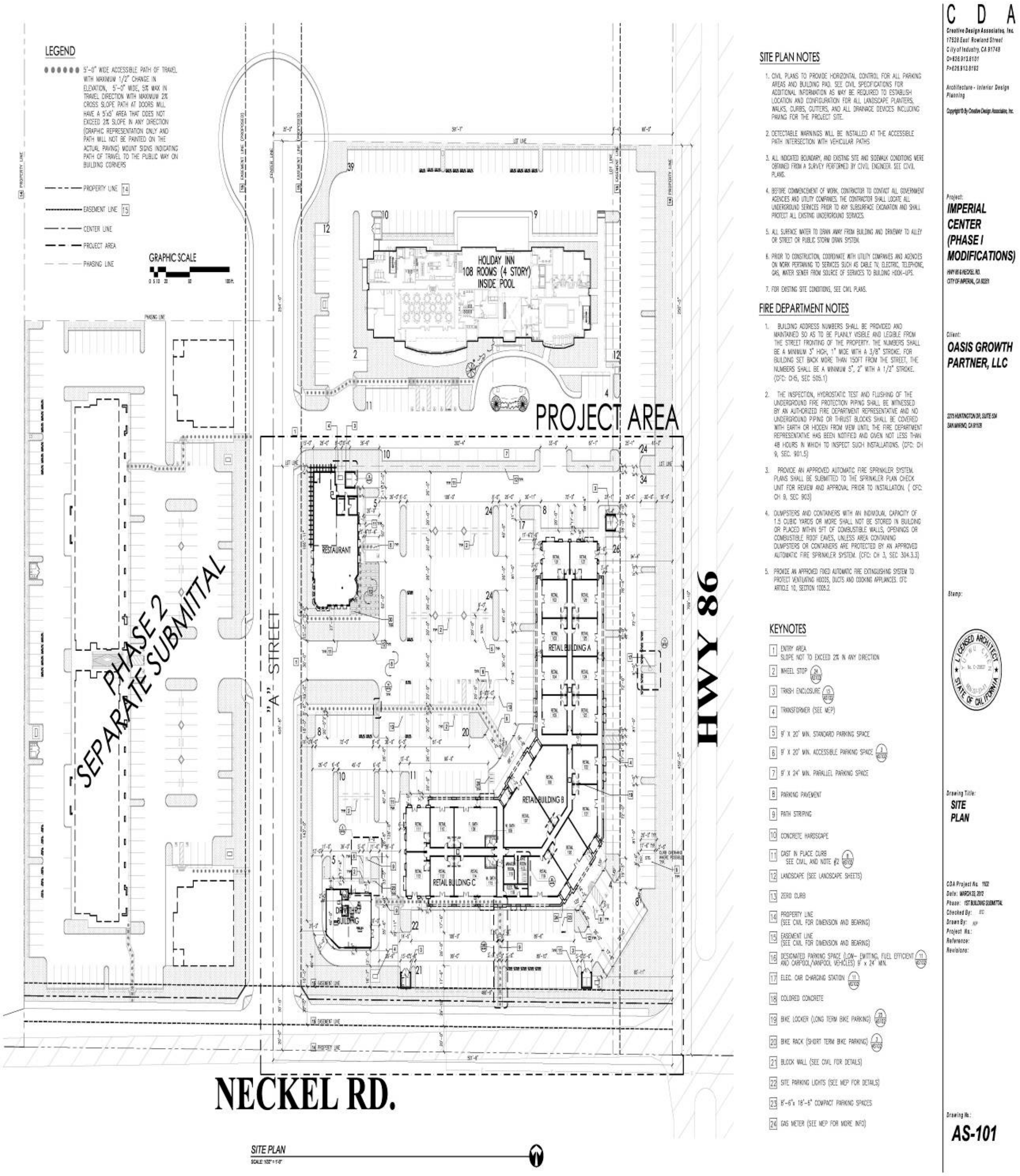
[6] *Protective Noise Levels. Condensed Version of EPA Levels Document*. U.S. Environmental Protection Agency, Office of Noise Abatement and Control, Washington, DC, EPA-550/9-79-100 (November 1978).

[7] Phase II is outside the scope of this report.

Figure 3 – Site Plan



3.3 Existing Noise Environment

The main source of noise near the proposed site is automobile and truck traffic on surrounding roads. State Route 86 (Imperial Avenue) is classified as a principal arterial in the City of Imperial Circulation Element.[8] It is currently a four-lane divided highway, providing two travel lanes per direction (north and south). The speed limit varies between 50 and 65 miles per hour in the vicinity of the Project. Neckel Road is an undivided two-lane road between State Route 86 and La Brucherie Road. The speed limit is not posted.[9]

The *City of Imperial General Plan, Noise Element* contains calculated estimates of noise contours on either side of State Route 86 throughout the city.[10] When the level of service (LOS) of the highway is C, the approximate distances to the CNEL contours are as shown in **Table 2** (Estimated Noise Exposures from State Route 86 Traffic).

Table 2 – Estimated Noise Exposures from State Route 86 Traffic

CNEL (dBA)	Distance from Centerline to CNEL Contour (feet)
60	500
65	230
70	115
75	70

A BNSF Railroad branch line runs north-south, at about 1900 feet east of the Project site. The *City of Imperial General Plan, Noise Element* estimates that the CNEL at 2,000 feet is about 51 dBA.[11] This level is lower than the CNEL due to State Route 86, and would not be noticeable at the Project site.

The proposed hotel site is approximately 1.5 miles northeast of the northwestern terminus of Runway 14-32 of the Imperial County Airport, which is owned and operated by Imperial County, and is the only airport in the County that has scheduled commercial airline service (County of Imperial, 1996).[12] The site lies outside the airport's 55-dBA CNEL contour.[13]

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[8] The *City of Imperial General Plan, Circulation Element* designates SR 86 both as a "major arterial" (p. 35) and as a "Freeway" (p. 49).

[9] *Holiday Inn Hotel Traffic Impact Study. Draft Report.* Prepared by ADVANTEC Consulting Engineers, Inc., Diamond Bar, California for the City of Imperial, California (September 2, 2010).

[10] *City of Imperial General Plan, Noise Element*, p. 261.

[11] Ibid., p. 242.

[12] *Airport Land Use Compatibility Plan, Imperial County Airports.* Imperial County Land Use Commission and Imperial County Planning/Building Department. (Revised June 19, 1996), p. 4-35.

[13] Ibid., Figure 4S.

3.4 Ambient Noise Monitoring

On August 30, 2010 UltraSystems conducted ambient noise sampling at three locations in the general project area. Two samples were taken at each measurement site, one during the day and one during the night. In doing so, data was collected that represented a fuller spectrum of noise occurrences. The sites are numbered 1, 2 and 3, with a letter suffix of A or B to indicate day or night, respectively. The sampling locations were chosen to provide an exposure baseline for evaluation of construction and operational impacts. Two of the sampling sites were close to residences that are located near the proposed project. **Table 3** (Characteristics of Ambient Noise Measurement Locations) lists the measurement sites, sampling dates and times, and why each site was chosen. These locations are shown in **Figure 4** (Ambient Noise Measurement Locations).

Table 3 – Characteristics of Ambient Noise Measurement Locations

Site	Sampling Location	Date	Time Interval	Purpose of Selection
1A	Northeast corner of Neckel Road and State Route 86, 10 feet from corner	08-30-10	1656-1711	Residences near project site
1B		08-30-10	1859-1914	
2A	Southeast corner of Ralph Road and State Route 86, 25 feet from corner	08-30-10	1730-1745	Residences near project site
2B		08-30-10	1934-1949	
3A	Northwest corner of Neckel Road and State Route 86, 15 feet from corner.	08-30-10	1806-1821	Project site
3B		08-30-10	1958-2027	

Source: Bing Maps2009 - Microsoft Corporation and its data suppliers; UltraSystems Environmental, Inc., 2010

October 19, 2010

Holiday Inn Project

Figure 4
Ambient Noise Measurement Locations

A Quest SoundPro Model DL-1-1/3 sound level meter was used in the “slow” mode at each site to obtain a 15-minute average sound level (L_{eq}), as well as other metrics. The meter’s microphone was maintained 5 feet above ground. All measurement locations were unobstructed by sound walls or buildings that could attenuate the readings. This allowed unmitigated exposures to be characterized. Noise meter output records are found in **Appendix A.**

Table 4 (Measured Ambient Noise Levels) shows the results of the ambient noise sampling. The 15-minute L_{eq} values for all the sites around the project ranged from about 67 to 75 dBA, with maxima ranging from about 78 to 87 dBA. This relatively high maximum value occurred due to large trucks passing by on State Route 86. The L_{90} values, which approximate the noise levels without major noise sources, such as individual trucks, were about 51 to 59 dBA. Site number 1 is near the closest residence to the proposed Project. Its 15-minute L_{eq} during the day was 74.9 dBA.

Table 4 – Measured Ambient Noise Levels

Site	**Measurement Results (dBA)**		
	15-Minute L_{eq}	**L_{max}**	**L_{90}**
1A	74.9	85.9	56.7
1B	72.6	86.5	51.4
2A	73.5	82.1	58.4
2B	69.3	81.6	51.9
3A	69.0	78.2	57.7
3B	67.4	81.3	51.4

4.0 APPLICABLE REGULATIONS

To limit population exposure to noise levels that are physically and/or psychologically damaging or intrusive, the federal government, the State of California, various county governments, and most municipalities in the State have established noise policies, standards and ordinances.

4.1 Federal

The U.S. Department of Housing and Urban Development has set a goal of 45 dBA L_{dn} as a desirable maximum interior standard for residential units developed under HUD funding (HUD, 1985). While HUD does not specify acceptable exterior noise levels, standard construction of residential dwellings constructed under Title 24 of the California Code of Regulations typically provide 20 dBA of acoustical attenuation with the windows closed and 10 dBA with the windows open. Based on this assumption, the exterior L_{dn} or CNEL should not exceed 65 dBA under normal conditions.

4.2 State of California

The California Department of Health Services (DHS) Office of Noise Control has studied the correlation of noise levels with effects on various land uses. (The Office of Noise Control no longer exists.) The most current guidelines prepared by the state noise officer are contained in the "General Plan Guidelines" issued by the Governor's Office of Planning and Research in 2003.[12] These guidelines establish four categories for judging the severity of noise intrusion on specified land uses:

- **Normally Acceptable**: Is generally acceptable, with no mitigation necessary.
- **Conditionally Acceptable**: May require some mitigation, as established through a noise study.
- **Normally Unacceptable**: Requires substantial mitigation.
- **Clearly unacceptable**: Probably cannot be mitigated to a less-than-significant level.

The types of land uses addressed by the state standards, and the acceptable noise categories for each are presented in **Table 5** (Land Use Compatibility for Community Noise Sources). There is some overlap between categories, which indicates that some judgment is required in determining the applicability of the numbers in every situation.

Title 24 of the California Code of Regulations requires performing acoustical studies before constructing dwelling units in areas that exceed 60 dBA L_{dn}. In addition, the California Noise Insulation Standards identify an interior noise standard of 45 dBA CNEL for new multi-family residential units. (Local governments frequently extend this requirement to single-family housing.)

4.3 Local Standards

4.3.1 City of Imperial

The primary regulatory documents that establish noise standards in the City of Imperial are the City's General Plan Noise Element and the Zoning Ordinance.[13]

Sensitive Receptors

The City of Imperial General Plan Noise Element does not explicitly define sensitive noise receptors. However, in setting acceptable noise exposure levels[14] it implicitly defines several types of "noise-sensitive uses." These include residences, schools, churches, hospitals, nursing homes, parks and recreation areas.

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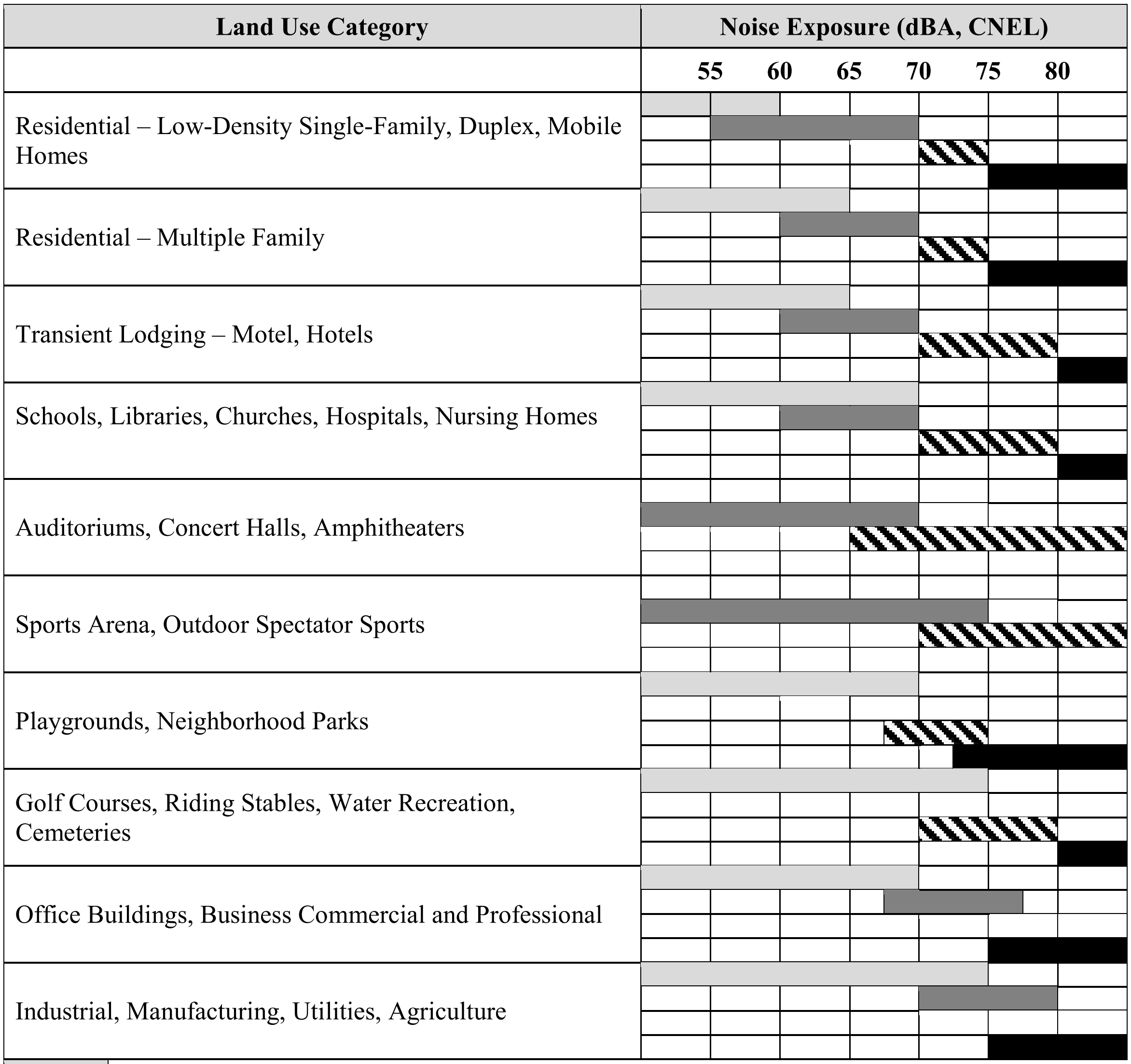
[12] State of California, *General Plan Guidelines*. Governor's Office of Planning and Research, Sacramento, California (2003).

[13] *City of Imperial Zoning Ordinance*, §24.03.130.

[14] *City of Imperial General Plan, Noise Element*, p. 252.

Table 5 - Land Use Compatibility for Community Noise Sources



░ **Normally Acceptable**: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

▒ **Conditionally Acceptable**: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditioning will normally suffice.

▨ **Normally Unacceptable**: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

■ **Clearly Unacceptable**: New construction or development should generally not be undertaken.

Source: State of California, 2003.

Construction Noise

Neither the City of Imperial General Plan Noise Element nor the Zoning Ordinance limits construction noise levels. However, Policy 5 of the Noise Element requires that the City adopt an ordinance to prohibit construction activities between 8:00 p.m. and 7 a.m.

Operation Noise

Table 6 (City of Imperial Noise Standards) lists the acceptable outdoor and indoor noise exposure levels prescribed by the General Plan Noise Element and the Zoning Ordinance.

Table 6 – City of Imperial Noise Standards

Type of Receptor	Acceptable Exposure Level dBA CNEL	
	Outdoor	Indoor
Rural Residential Single-Family Residential	60	45[a]
Multiple-Family Residential	65	45[a]
Schools Libraries Churches Hospitals Nursing Homes Parks and Recreation	70	40

[a]This standard applies only if acceptable outdoor noise levels cannot be attained by noise mitigation measures.

The General Plan Noise Element also includes provisions for reducing potential exposure to noise. These include the following:[15]

- Setbacks beyond the acceptable noise levels;
- Location of uses that are compatible with higher noise levels to act as buffers for noise-sensitive uses;
- Clustering of commercial, office, or multi-family uses to reduce interior open space noise levels;
- Noise-minimizing architectural design features, including:
    - Appropriate entrance and window locations
    - Appropriate patio and balcony locations
    - Building projections and height
    - Internal arrangement of rooms

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[15] Ibid., pp. 256-257.

    - ➢ Location of air conditioning units at ground level; and

- Noise-reducing construction techniques, including:
    - ➢ Acoustical wall design
    - ➢ Use of dense building materials
    - ➢ Acoustical windows (double glazed, double paned, thick and non-operable windows)
    - ➢ Noise-tight doors, ceilings and floors

Where other attenuation measures fail to reduce adverse noise levels, the General Plan Noise Element prescribes noise barrier walls and berms.

4.3.2 Right-to-Farm Ordinance

In recognition of the role of agriculture in the county, Imperial County has adopted a right-to-farm ordinance.[16] A "right-to-farm" ordinance creates a legal presumption that ongoing, standard farming practices are not a nuisance to adjoining residences. It requires a disclosure to land owners near agricultural land operations, or areas zoned for agricultural purposes. The disclosure advises persons that discomfort and inconvenience from machinery resulting from conforming and accepted agricultural operations are a normal and necessary aspect of living in the agricultural areas of the county.

4.4 Thresholds of Significance

There are two criteria for judging noise impacts. First, noise levels generated by the proposed project must comply with all relevant federal, state, and local standards and regulations. Noise impacts on the surrounding community are limited by local noise ordinances, which are implemented through investigations in response to nuisance complaints. It is assumed that all existing regulations for the construction and operation of the proposed project would be enforced. In addition, the proposed project should not produce noise levels that are incompatible with adjacent noise sensitive land uses as defined in the General Plan.

The second measure of impact used in this analysis is the significant increase in noise levels above existing ambient noise levels as a result of the introduction of a new noise source. An increase in noise level due to a new noise source has a potential to adversely impact people.

Based on the applicable noise regulations stated above, the proposed project would have a significant noise impact if it would:

- Conflict with applicable noise restrictions or standards imposed by regulatory agencies.

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[16] County of Imperial Codified Ordinances, Division 2, Title 6: Right to Farm, §62950-62955.

- Result in a substantial permanent increase in ambient noise levels in the project vicinity; a "substantial noise increase" is defined as a 5-dBA CNEL increase at noise-sensitive receptors where applicable standards are not currently exceeded, or a 3-dBA CNEL increase at noise-sensitive receptors where applicable standards currently are exceeded.

- Result in a substantial temporary increase in ambient noise levels in the project vicinity due to construction activities; a "substantial temporary noise increase" is defined as exposure to a noise level of 75 dBA or greater for 8 hours within a 24-hour period at the property line of property used for residential purposes.

- Result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project at sensitive receptor locations.

- Contribute to a significant cumulative noise impact.

5.0 PROJECT IMPACTS

Noise impacts associated with land use development projects include short-term and long-term impacts. Construction activities, especially heavy equipment operation, would create noise effects on and adjacent to the construction site. Noise impacts could be significant when one phase is under construction adjacent to a completed and occupied phase.

Long-term noise impacts include project-generated on-site and off-site operational noise sources. On-site (stationary) noise sources would include operation of mechanical equipment and other industrial processes, landscape and building maintenance, and other commercial and industrial activities. Off-site noise would be attributable to project-induced traffic, which would cause an incremental increase in noise levels within and near the project vicinity.

This section also evaluates potential groundborne vibration that would be generated from the construction or operation of the proposed project.

5.1 Short-Term Noise Impacts

Construction of a development project could generate noise levels in excess of standards adopted in local ordinances. Noise impacts from construction activities would be a function of the noise generated by the operation of construction equipment, the location of equipment, and the timing and duration of the noise-generating activities. The types and number of pieces of equipment to be used in construction were assumed to be the default equipment complement generated by the CalEEMod model used for the air quality assessment.[17] **Table 7** (Construction Equipment Noise Characteristics) lists the equipment expected to be used. For each equipment type, the table shows an average noise emission level (in dB at 50 feet) and a "usage factor," which is an estimated percentage of operating time that the equipment would be producing noise at the stated level.[18] The aforementioned CalEEMod model identified the date intervals during which each

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[17] Rogozen, M. M. Lindsay, and L. Luu. 2012. *Revised Air Quality Analysis for Holiday Inn Hotel & Resort, City Of Imperial, California*. Prepared by UltraSystems Environmental Incorporated for Oasis Growth Partners, LLCARC-I Limited Partnership, San Marino, California (September).

[18] Equipment noise emissions and usage factors are from Knauer, H. et al., 2006. *FHWA Highway Construction*

type of equipment would be used. Noise exposures at a hypothetical, 50-foot-distant receptor were calculated for each month of construction. The maximum exposure would occur during paving, which will occur during the last three months.

Table 7 – Construction Equipment Noise Characteristics

Equipment Type	Maximum Sound Level (dBA @ 50 feet)	Usage Factor (%)
Air Compressors	78	40
Excavator	81	40
Flatbed Boom Truck	75	20
Forklift	65	50
Paver	85	50
Paving Equipment	85	50
Pickup Trucks	75	40
Portable Generators	81	50
Road Grader	85	40
Roller	85	20
Rubber Tired Dozer	82	50
Tractor	84	40
Water Truck	74	40

Using the construction equipment noise emission characteristics given in **Table 7**, and methods suggested by the Federal Transit Administration (FTA),[19] UltraSystems estimated composite hourly L_{eq} values at two sensitive receiver points. **Table 8** (Estimated Construction Noise Exposures) summarizes maximum noise that would be anticipated from Project construction.

Table 8 - Estimated Construction Noise Exposures

Sensitive Receiver	Distance (Feet)	Maximum One-Hour L_{eq} (dBA)
Nearest Residence	295	73.4
Frank M. Wright Middle School	1,925	57.1

Noise Handbook. U.S. Department of Transportation, Research and Innovative Technology, Administration, Cambridge, Massachusetts, FHWA-HEP-06-015 (August 2006), except where otherwise noted.

[19] *Transit Noise and Vibration Impact Assessment*, FTA-VA-90-1003-06. U.S. Department of Transportation, Federal Transit Administration (May 2006).

Please note that these estimated construction noise levels represent a conservative (worst-case) scenario, in which the loudest type of construction equipment would be operating on the same schedule and in the same area on the construction site. These worst-case values would not be continuous, nor would they be typical of noise levels throughout the construction period.

Impact to Existing Sensitive Receptors

The existing sensitive receptors nearest the project site are residential dwellings to the east and the Frank M. Wright Middle School to the south. In accordance with *Policy 5 of the General Plan, Noise Element* the construction activities would be exempted from the noise limits provided that the associated construction activities do not occur between 8 p.m. and 7 a.m. Furthermore, neither sensitive receptor would be exposed to a noise level of 75 dBA or greater for 8 hours within a 24-hour period. The only other significance criterion is whether the project would "result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project at sensitive receptor locations." The existing exposure at the nearest residential receptor can be characterized by the measurement that UltraSystems made at Location 1. (See **Table 4.)** During the day, the ambient noise level was 74.9 dBA. Noise from construction would increase the exposure at Location 1 by a maximum of 0.6 dBA, which is not noticeable to the human ear. Impacts from construction are less than significant, and no mitigation is necessary.

5.2 Long-Term Noise Impacts

5.2.1 Noise from On-Site Sources

The commercial land uses on the project site (hotel, restaurants and office buildings) would generate noises associated mainly with traffic entry and egress. These noise-generating activities are frequently sited adjacent to residential neighborhoods, and would not be considered significant noise sources.

5.2.2 Roadway Noise

The principal noise source in the project area is traffic on local roadways. The project may contribute to a permanent increase in ambient noise levels in the project vicinity due to project-generated vehicle traffic on neighborhood roadways and at intersections. A noise impact would occur if the project contributes to a permanent increase in ambient noise levels affecting sensitive receptors along roadways that would carry project-generated traffic.

To quantify project off-site noise impacts, peak-hour traffic noise levels were estimated using the Federal Highway Administration (FHWA) Traffic Noise Model®, Version 2.5 (TNM). This model is widely accepted, and is required by the FHWA for analyses of new transportation projects. The model calculates the L_{eq} noise level for a particular combination of site-specific road configurations, traffic volumes, distances, speeds and noise barriers.

For purposes of analysis, the average peak-hour volumes were calculated by UltraSystems using the baseline and projected average daily traffic trips (ADT) from the project traffic study[20] and input into the model to estimate existing and future traffic noise levels on roadway segments in the project vicinity where sensitive receptors are or would be located. Current roadway characteristics, such as the number of lanes, were determined from field observations, aerial photographs of the project site, and the project traffic study. For roadway segments in the project vicinity, the vehicle classification mix (percentages of automobiles, light-duty trucks and heavy-duty trucks) was obtained from the CalEEMod emissions model used for the project's air quality report.[21] An at-grade source/receiver configuration was assumed for all studied roadway segments. Noise levels were estimated at measured distances of sensitive receptors from the edge of the roadway.

Traffic noise impacts were modeled for four cases:

- Current traffic levels;
- Traffic levels at build-out without the proposed project, but with normal growth in the area; and
- Traffic levels in the build-out year with the proposed project and normal growth in the area.
- Traffic levels in the horizon year (2035) with the proposed project and normal growth in the area.

The projected worst-case peak hour noise levels are summarized in **Table 9** (Projected Peak Hour Noise Levels). Note that the values predicted take into account the effect of existing noise barriers that may affect ambient noise levels, but do not consider any potential future roadway improvements or changes in speed limits on these roadway segments. Noise modeling output files are attached in **Appendix B**.

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[20] Lau, S. 2010. *Holiday Inn Hotel Traffic Impact Study. Draft Report*. Prepared by ADVANTEC Consulting Engineers, Diamond Bar, California for City of Imperial, California (September 2).

[21] Rogozen, M. and M. Lindsay, 2010. *Draft Air Quality Analysis for Holiday Inn Hotel & Resort, City Of Imperial, California*. Prepared by UltraSystems Environmental Incorporated for Oasis Growth Partners, LLCARC-I Limited Partnership, San Marino, California (October).

Table 9 - Projected Peak Hour Noise Levels

Roadway Segment		Sound Level at Receptor Nearest the Roadway dBA (Peak Hour L_{eq})			
	Existing	Future No Project	Future with Project in 2012	Future with Project in 2035	Project Impact in 2035
State Route 86					
Ralph Road to Neckel Road	63.8	63.9	60.4	62.6	-1.2
Neckel Road to E. 15th Street	62.9	63.1	59.9	61.3	-1.6
Neckel Road					
State Route 86 to Canon Drive	70.5	70.3	67.1	68.1	-2.4
La Brucherie Road to State Route 86	65.9	66.2	67.5	68.8	2.9

As shown in **Table 9**, the proposed project would not result in peak hour noise level increases greater than 5 dBA at the nearest sensitive receptors off of Neckel Road and State Route 86, between the year 2035 and existing noise levels. However, future noise levels for 2035 will be greater than existing noise levels off of Neckel Road between La Brucherie Road and State Route 86. Mitigation measures are presented in **Section 7.2**.

Noise modeling output files are attached in **Appendix B**.

5.3 Vibration Impacts

Vibration is sound radiated through the ground. Groundborne noise is the rumbling sound caused by the vibration of building interior surfaces. The ground motion caused by vibration is measured as peak particle velocity (PPV) in inches per second and is referenced as vibration decibels (VdB). Typical outdoor sources of perceptible groundborne vibration are construction equipment and traffic on rough roads.

The American National Standards Institute (ANSI) indicates that vibration levels in critical care areas, such as hospital surgical rooms and laboratories, should not exceed 0.2 inch per second of PPV.[22] The FTA also uses a PPV of 0.2 inch per second as a vibration damage threshold for fragile buildings and a PPV of 0.12 inch per second for extremely fragile historic buildings. The FTA criteria for infrequent groundborne vibration events (less than 30 events per day) that may cause annoyance are 80 VdB for residences and buildings where people normally sleep, and 83 VdB for institutional land uses with primarily daytime use.[23]

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[22] American National Standards Institute (ANSI). 1983. *"Guide to the Evaluation of Human Exposure to Vibration in Buildings"*, ANSI S.329-1983.

[23] *Transit Noise and Vibration Impact Assessment*, FTA-VA-90-1003-06. U.S. Department of Transportation,

5.3.1 Construction Vibration

It is expected that groundborne vibration from project construction activities would cause only intermittent, localized intrusion. The proposed project's construction activities most likely to cause vibration impacts are:

- Heavy Construction Equipment: Although all heavy, mobile construction equipment has the potential of causing at least some perceptible vibration while operating close to buildings, the vibration is usually short-term and is not of sufficient magnitude to cause building damage. It is not expected that heavy equipment such as large bulldozers would operate close enough to any sensitive receptors to cause vibration impact.

- Trucks: Trucks hauling building materials to construction sites can be sources of vibration intrusion if the haul routes pass through residential neighborhoods on streets with bumps or potholes. Repairing the bumps and potholes almost always eliminates the problem.

The FTA has published standard vibration levels for construction equipment operations, at a distance of 25 feet.[24] The calculated vibration levels expressed in VdB and PPV for construction equipment at distances of 50, 100, and 150 feet are listed in **Table 10** (Vibration Levels of Construction Equipment).

Table 10 - Vibration Levels of Construction Equipment

Equipment	PPV at 50 ft (in/sec)	Vibration Decibels at 50 ft (VdB)	PPV at 100 ft (in/sec)	Vibration Decibels at 100 ft (VdB)	PPV at 150 ft (in/sec)	Vibration Decibels at 150 ft (VdB)
Large Bulldozer	0.0315	78	0.0111	69	0.0061	64
Loaded Truck	0.0269	77	0.0095	68	0.0052	63
Jackhammer	0.0124	70	0.0044	61	0.0024	56
Small Bulldozer	0.0011	49	0.0004	40	0.0002	35

Source: Calculated by UltraSystems from FTA data.

As shown in **Table 10**, the vibration level of construction equipment at a distance of 50 feet is less than the FTA damage threshold of 0.12 inch per second PPV for fragile historic buildings. In addition, since it is not expected that heavy equipment such as large bulldozers would operate close enough to any sensitive land uses, construction activities would not generate groundborne vibrations that cause human annoyance. Therefore, groundborne vibration or groundborne noise impacts from the project's construction activities are not expected to be significant.

Federal Transit Administration (May 2006).

[24] Ibid., p. 12-12.

5.3.2 Operational Vibration

Operation of the proposed project would not involve significant sources of groundborne vibration or groundborne noise. Thus, operation of the proposed project would result in no impact.

5.4 Noise Exposure for Hotel Guests

To estimate the impacts of future traffic noise on guests at the proposed Holiday Inn, peak-hour L_{eq} levels at the hotel's exterior wall closest to State Route 86 and Neckel Road were modeled using TNM. The results are summarized in **Table 11** and **Table 12** (Noise Exposure for Hotel Guests).

Table 11 – Noise Exposure for Hotel Guests along State Route 86

Floor	Projected Noise Level (dBA CNEL)			
	2010 (Existing)	2012 (No Project)	2012 (With Project)	2035 (With Project)
Ground	74.3	74.4	65.9	68.2
Second	73.6	73.7	65.2	67.5
Third	74.0	74.0	65.6	67.9
Fourth	73.8	73.9	65.5	67.7

Table 12 – Noise Exposure for Hotel Guests along Neckel Road

Floor	Projected Noise Level (dBA CNEL)			
	2010 (Existing)	2012 (No Project)	2012 (With Project)	2035 (With Project)
Ground	62.7	62.9	64.2	65.6
Second	62.1	62.3	63.6	65.1
Third	61.6	61.8	63.1	64.6
Fourth	61.5	61.7	63.0	64.5

As shown in **Table 11**, traffic noise exposure at the hotel exterior facing State Route 86 would be about 65 dBA in 2012 and 67 dBA in 2035. As shown in **Table 12**, traffic noise exposure at the hotel exterior facing Neckel Road would be roughly 63 dBA for 2012 and 64 dBA for 2035. According to the State of California guidelines in **Table 5**, these levels are considered "conditionally acceptable," for hotels.

6.0 CUMULATIVE IMPACTS

The project traffic study assumed that there would be no other planned future projects in the project vicinity during the buildout year; instead it used a growth factor to project 2010 traffic levels to 2012 and to 2035. Therefore, predicted future noise levels at the studied intersections are equivalent to the cumulative traffic noise effects of these projects, and the cumulative impacts are less than significant.

7.0 MITIGATION MEASURES

7.1 Construction

Construction noise impacts will be less than significant. Therefore no mitigation measures are necessary. However, the following *optional* measures would reduce noise impacts from construction of the proposed project:

M1 The construction contractor shall ensure that all construction equipment, fixed or mobile, is properly operating (tuned-up) and that mufflers are working adequately.

M2 The construction contractor shall ensure that all construction equipment is located so that emitted noise is directed away from sensitive noise receivers.

M3 The construction contractor shall ensure that stockpiling and vehicle-staging areas are located as far as practical from noise-sensitive receptors during construction activities.

M4 The developer shall route heavily loaded trucks away from neighboring residential dwelling units.

M5 Two weeks prior to the construction, the construction contractor shall provide notification in writing to adjacent residences if they would be located within 150 feet of the active construction activity.

7.2 Off-Site Impacts of Project Operations.

The following mitigation measure will reduce noise exposures along the south side of Neckel Road between La Brucherie Road and State Route 86 to less than significant levels.

M6 Construct a 6-foot high soundwall on the south side of Neckel Road wherever residential properties would otherwise be exposed to project-induced traffic.

7.3 Impacts on Hotel Guests.

The final site design and design of the hotel must ensure that interior exposures in guest rooms are below 45 dBA CNEL. The following mitigation measures should be considered in final project design.

M7 Use acoustical (soundproof) glass for guest room windows and sliding doors (if applicable); the windows and door would each consist of two panes of glass, separated by at least 2 inches of air space.

M8 Use dense building materials and/or increase exterior wall thickness on the highway side of the hotel.

M9 Design an air gap between the exterior and interior panels so that sound is not transmitted directly from the exterior wall to the interior wall of the guest room.

M10 Use sound-absorbing carpeting, furniture, and other room furnishings.

M11 Design a central heating and cooling system instead of using wall-penetrating individual room units.

M12 Use compressible neoprene weather-stripping rather than felt or other fibrous types for sound insulation.

8.0 IMPACTS AFTER MITIGATION

Mitigation measures **M1** through **M5** will ensure that exposures during construction remain less than significant.

Mitigation measure **M6** will ensure that project-generated traffic would not result in a significant increase in ambient noise levels existing with the proposed project at project build-out.

Mitigation measures **M7** through **M12** should be considered in the detailed design of the hotel to ensure that hotel guests are not exposed to significant noise levels.

APPENDIX G

Traffic Impact Analysis

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Holiday Inn Hotel
Traffic Impact Study

Draft Report

Prepared for:

City of Imperial

Prepared by:

ADVANTEC Consulting Engineers

September 2, 2010

TRAFFIC IMPACT STUDY REPORT

September 2, 2010

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RELEASE VERSION:

Release Date	Version	Prepared by:	Reviewed by:
08/31/2010	1. Draft issue	SCL	SCL

1. Executive Summary

ADVANTEC Consulting Engineers (ADVANTEC) prepared this report to document the traffic study findings for the proposed Holiday inn Hotel with commercial uses on the northwest corner of SR-86 and Neckel Road intersection in the City of Imperial.

The following sections evaluate the potential impacts of the proposed hotel project during the weekday morning and evening peak hour operations at the following study intersections:

- SR-86 and Larsen Road (Stop-Controlled)
- SR-86 and Ralph Road (Stop-Controlled)
- Neckel Road and La Brucherie Road (Stop-Controlled)
- SR-86 and Neckel Road (Stop-Controlled)
- Neckel Road and Canon Drive (Stop-Controlled)
- Neckel Road and Dogwood Road (Stop-Controlled), and
- SR-86 and 15th St, (Signalized)

In addition, following driveway was evaluated in this traffic impact study:

- Neckel Road and 'A' Street (for future conditions only)

The scope and methodologies used for this traffic study were developed in consultation with the City of Imperial staff. Tasks undertaken for this traffic analysis include definition of study approach, determination of existing and future traffic conditions, assignment of traffic to be routed due to the proposed project, and evaluation of the impact of the proposed project at the study intersections. This report follows the approach and methodology provided in *Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002).*

The study scenarios included:

- ➢ Existing Year (2010)
- ➢ Opening Year (2012) Without Project
- ➢ Opening Year (2012) With Project Phase I
- ➢ Opening Year (2017) Without Project
- ➢ Opening Year (2017) With Project Phases I + II
- ➢ Opening Year (2017) With Project Phases I + II + Morningstar Project (Cumulative)
- ➢ Horizon Year (2035) Without Project
- ➢ Horizon Year (2035) With Project (Phase I + II)
- ➢ Horizon Year (2035) With Project (Phase I + II) + Morningstar Project (Cumulative)

The proposed project contains six land uses: retail (or gas station with convenience market), restaurants, fast food restaurants, coffee shop with drive-through, hotel and office buildings. Land use quantities include an 108 room hotel building, 10,000 square feet of retail (or gas station with convenience market), 3,000 square feet of Starbucks Coffee shop and drive-through, 5,000 square feet of restaurant, 5,000 square feet of fast food restaurant and two 20,000 square feet office buildings. A proposed street ("A" Street) will provide access to/from the project from Neckel Road.

Findings are summarized in **Table 1.1** and **Table 1.2**.

Findings: Table 1.1 shows a summary of the LOS service for each studied scenario.

Table 1.1 Level of Service Summary

Intersection	Existing 2010				Op Yr 2012 - No Project				Op Yr 2012 - Phase I				Op Yr 2017 - No Project				Op Yr 2017 - Phase I & II				Op Yr 2017 - Phase I & II & Cumulative				2035 - No Project				2035 - PhaseI & II				2035 - Phase I & II & Cumulative			
	AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR-86 and Larsen Road*	16.0	C	17.4	C	16.4	C	17.9	C	17.7	C	19.5	C	17.8	C	19.3	C	21.1	C	22.0	C	21.1	C	-	F	25.0	D	31.4	D	31.0	D	37.6	E	30.8	D	-	F
SR-86 and Ralph Road*	19.1	C	22.6	C	20.1	C	23.9	C	22.4	C	26.9	D	23.1	C	27.8	D	30.2	D	34.3	D	-	F	-	F	-	F	-	F	-	F	-	F	-	F	-	F
Neckel Rd and La Brucherie Rd*	9.4	A	9.3	A	9.4	A	9.3	A	9.9	A	9.8	A	9.4	A	9.4	A	10.6	B	10.3	B	10.6	B	13.9	B	9.7	A	9.7	A	11.0	B	10.7	B	11.0	B	10.6	B
SR-86 and Neckel Rd*	21.4	C	29.6	D	22.6	C	31.9	D	-	F	-	F	27.4	D	40.7	E	-	F	-	F	-	F	-	F	-	F	-	F	-	F	-	F	-	F	-	F
Neckel Rd and Canon Dr*	9.6	A	10.4	B	9.7	A	10.5	B	10.1	B	10.7	B	9.9	A	10.8	B	10.7	B	11.3	B	10.7	B	11.3	B	10.7	B	12.2	B	11.7	B	13.0	B	11.7	B	13.0	B
Neckel Rd and Dogwood Rd*	10.0	A	10.0	A	10.1	B	10.0	B	11.5	B	12.6	B	10.3	B	10.3	B	12.2	B	13.4	B	12.3	B	13.4	B	11.7	B	11.7	B	14.2	B	16.6	C	14.2	B	16.6	C
SR-86 and 15th St	6.8	A	8.8	A	6.8	A	9.0	A	6.6	A	9.1	A	7.5	A	9.8	A	7.4	A	9.9	A	7.4	A	9.9	A	8.5	A	13.5	B	8.7	A	13.7	B	8.7	A	13.7	B
Neckel Rd and "A" St	-	-	-	-	-	-	-	-	9.5	A	9.8	A	-	-	-	-	17.1	C	13.4	B	17.6	C	13.4	B	-	-	-	-	18.9	C	13.9	B	18.9	C	13.9	B

* Unsignalized

Recommendations: **Table 1.2** shows a summary of the LOS improvements with mitigation measures. the LOS improvements with mitigation measures by implementing signals at the following intersections, while maintaining existing lane configurations at the intersections. With implementing signalization at the two intersections, LOS will improve significantly from LOS F to LOS B or better.

Table 1.2 Level of Service Summary - Mitigation Measure

Intersection	Op Yr 2012 - Phase I				Op Yr 2017 - No Project				Op Yr 2017 - Phase I & II				Op Yr 2017 - Phase I & II & Cumulative				2035 - No Project				2035 - Phase I & II				2035 - Phase I & II & Cumulative			
	AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR-86 and Ralph Road*	-	-	-	-	-	-	-	-	-	-	-	-	6.3	A	5.0	A	7.0	A	4.8	A	5.7	A	3.9	A	7.4	A	6.6	A
SR-86 and Neckel Rd*	5.5	A	5.3	A	-	-	3.2	A	8.4	A	6.8	A	33.4	D	6.8	A	5.8	A	3.7	A	10.7	B	7.7	A	53.5	D	7.7	A

2. Introduction, Project Description & Methodology

2.1 Introduction

Oasis Growth partners, LLC (Developer) retained ADVANTEC Consulting Engineers to prepare a traffic impact study to evaluate the traffic impacts of the proposed Holiday Inn Hotel project with commercial uses (in the City of Imperial) on the City's transportation network. The study was conducted with compliance to the latest edition of *Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002).*

For this traffic analysis, seven studied locations were identified in consultation with the City of Imperial and Caltrans District 11 staff. One of the seven studied locations are controlled by traffic signals. The remaining six locations are operating as 2 way stop controlled intersections:

- SR-86 and Larsen Road (2 Way Stop Controlled)
- SR-86 and Ralph Road (2 Way Stop Controlled)
- Neckel Road and La Brucherie Road (2 Way Stop Controlled)
- SR-86 and Neckel Road (2 Way Stop Controlled)
- Neckel Road and Canon Drive (2 Way Stop Controlled)
- Neckel Road and Dogwood Road (2 Way Stop Controlled)
- SR-86 and 15th St (Signalized)

In addition, following is the future project access intersection that was included and evaluated in this traffic impact study:

- Neckel Road and 'A' Street (for opening and future year only)

The study scenarios for traffic impact analysis included:

- Existing Year (2010)
- Opening Year (2012) Without Project
- Opening Year (2012) With Project Phase I
- Opening Year (2017) Without Project
- Opening Year (2017) With Project Phases I + II
- Opening Year (2017) With Project Phases I + II + Morningstar Project (Cumulative)
- Horizon Year (2035) Without Project
- Horizon Year (2035) With Project (Phase I + II)
- Horizon Year (2035) With Project (Phase I + II) + Morningstar Project (Cumulative)

Figure 2.1 illustrated the project vicinity map.

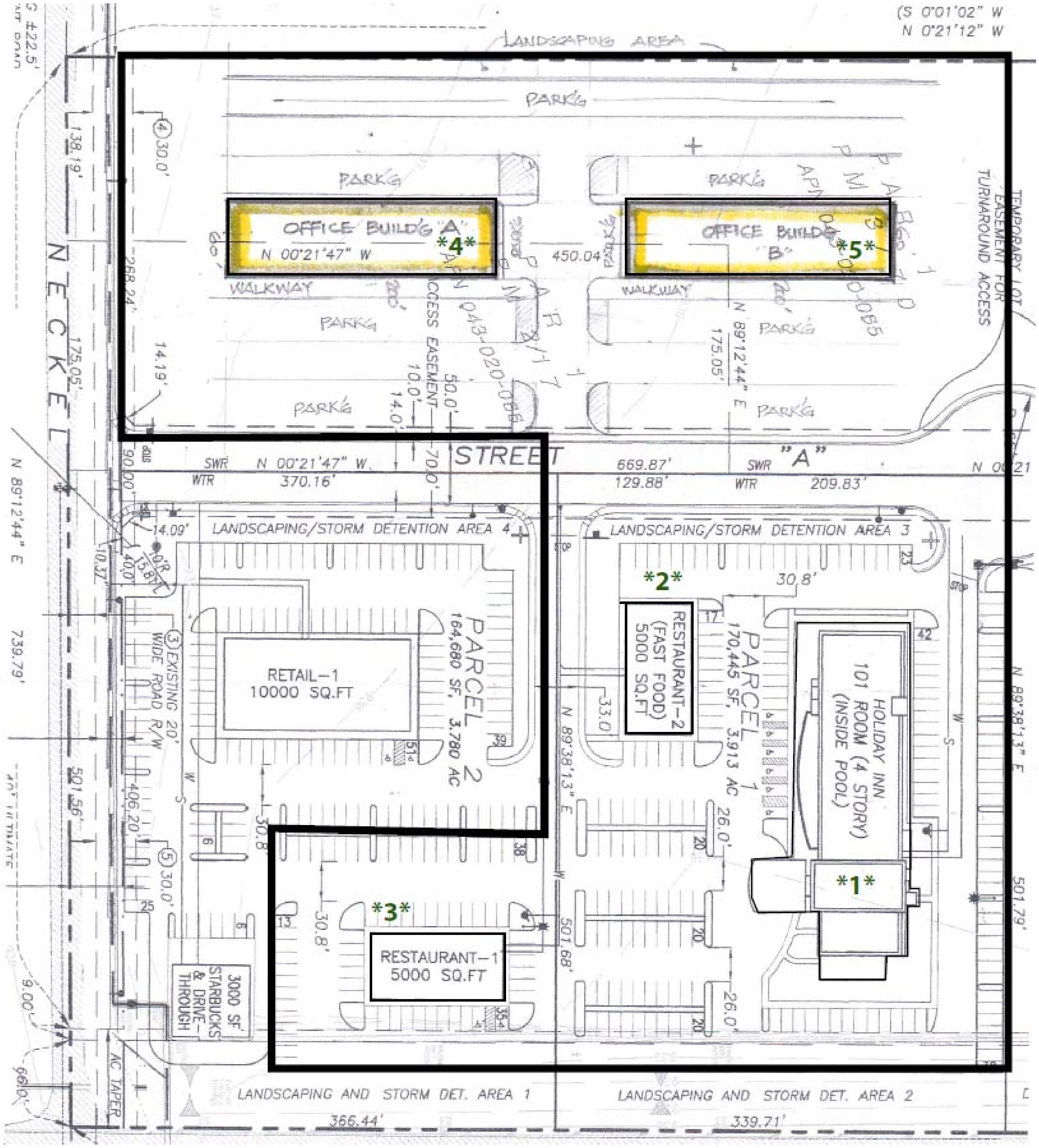
Figure 2.1 Vicinity MapC "Figure 2.1 Vicinity Map" \f F \l "1" **}**

2.2 Project Description

The proposed project is located on the northwest corner of SR-86 and Neckel Road, approximately 1.0 miles north of County Highway S28, in the City of Imperial. **Figure 2.2** shows the project site plan. Two 30-foot-wide driveways are proposed which would provide access to/from Neckel Road through a proposed "A" Street.

The development project would be grouped into six primary areas: retail (or gas station with convenience market), restaurant, fast food restaurant, coffee shop and hotel land uses. Land use quantities include a 108 room hotel building, 10,000 square feet of retail (or gas station with convenience market), 3,000 square feet of Starbucks Coffee shop & drive-through, and 5,000 square feet of restaurant, 5,000 square feet of fast food restaurant and two office buildings with 20,000 square feet each. Since the 10,000 square feet of retail may also be converted into a gas station with convenience market, therefore ADVANTEC has conducted an evaluation of project trips generated by retail and gas station (with convenience market and an average of 8 gas pumps) using the latest ITE generation. It is determined that the land use of 'gas station with convenience market' was used and assumed for the analysis due to a higher project trips generated.

Figure 2.2 Proposed Project Site Plan



2.3 Methodology

ADVANTEC prepared this report based on the discussions with City of Imperial staff in determining the approach and methodology to be applied in this study.

Study Scenarios

SYNCHRO 7.0 software was used to evaluate Level of Service (LOS) at all study intersections and proposed project access intersection (A Street) for both AM and PM peak periods for each of the following scenarios:

- Existing Year (2010)
- Opening Year (2012) Without Project
- Opening Year (2012) With Project Phase I
- Opening Year (2017) Without Project
- Opening Year (2017) With Project Phases I + II
- Horizon Year (2035) Without Project
- Horizon Year (2035) With Project (Phase I + II)

Level of Service Methodology

The Highway Capacity Manual 2000 (HCM 2000) methodology was used to determine the level of service for signalized and unsignalized intersections.

LOS quantitatively measures traffic conditions and drivers and passengers perception of these conditions. Level of service (LOS) values range from LOS A to LOS F. LOS A indicates excellent operating conditions with little delay to motorists, whereas LOS F represents congested conditions with excessive vehicle delay. LOS D is typically recognized as the minimum satisfactory service level in urban areas and . However, the minimum acceptable level of service for a signalized intersection is LOS 'C' for State Highway signalized intersection as per the *Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002).*

LOS ratings are based on Average Delay per Vehicle(sec) as shown in **Table 2.1**.

Table 2.1 HCM Level of Service Definitions

Level of Service	**Control Delay Per Vehicle (sec)**		**Definition**
	Signalized Intersection Average Delay per vehicle(sec)	**Two-Way or All-Way Stop Controlled Intersection Average Delay per Vehicle (sec)**	
A	<10	<10	EXCELLENT. No vehicle wait is longer than one red light, and no approach phase is fully used.
B	>10 and <20	>10 and <15	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles
C	>20 and <35	>15 and <25	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	>35 and <55	>25 and <35	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	>55 and <80	>35 and <50	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	>80 or a V/C ratio equal to greater than 1	>50	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays

Level of Service Analysis and Impacts

Weekday AM and PM peak hour traffic impacts at the seven study locations were quantitatively assessed based on the LOS methodology discussed above. As defined by the *Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002)*, significant impacts of the proposed hotel project with commercial land uses at study intersections must be mitigated to a level of insignificance if feasible.

3. Existing Conditions (Year 2010)

This section describes the existing transportation network and presents the results of the Existing (2010) without Project scenario.

3.1 Existing Roadway System

The discussion presented here is the description of the roadways in the project study area. **Figure 3.1** depicts the lane geometries and traffic control at the study intersections. The following are the roadway characteristics that form the study intersections.

State Route 86 (Imperial Avenue) - is classified as a Principal Arterial on the City of El Centro Circulation Element. It is currently constructed as a four-lane divided highway, providing two travel lanes per direction. This facility runs north-south within the project area and curbside parking is prohibited along both sides of the roadway. Bike lanes are provided along the roadway, however there are no bus stops available. The speed limit varies between 50 mph and 65 mph in the vicinity of project.

Larsen Road - Larsen Road is a east-west street providing one travel lane in each direction and quick access (stop-controlled) to SR-86.

Ralph Road - is an unclassified road. Ralph Road is currently constructed as an undivided two-laneroad east of SR 86. There are no bike lanes or bus stops provided and parking is not permitted along the roadway. The speed limit is not posted.. The west-leg of the intersection is currently a dirt road.

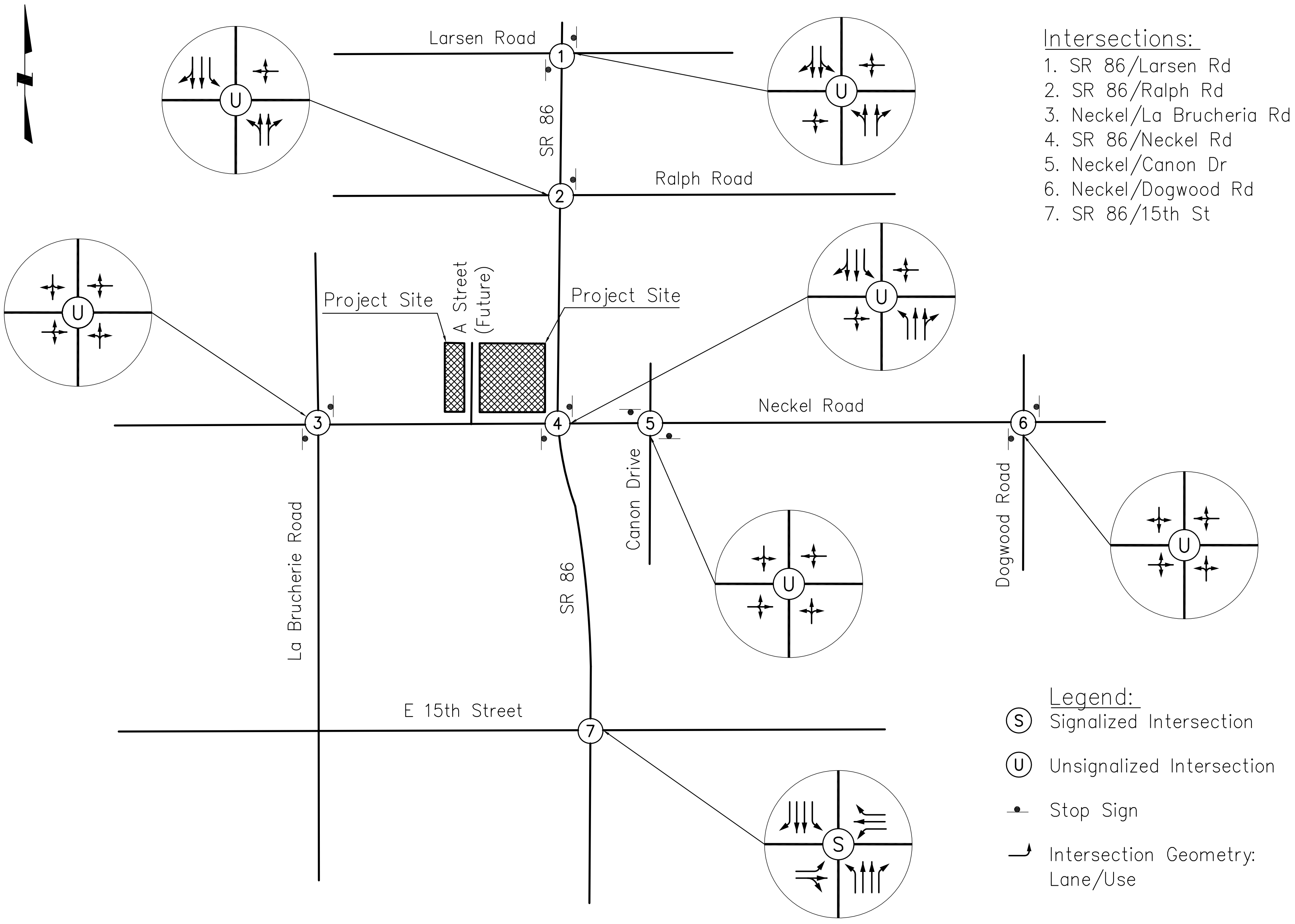
Neckel Road - is an unclassified road. Neckel Road is currently constructed as an undivided two-lane road between SR 86 and La Brucherie Road. There are no bike lanes or bus stops provided and parking is not permitted along the roadway. The speed limit is not posted.

15th Street - 15th Street is a east-west residential street providing one travel lane in each direction and providing signalized access to SR-86.

La Brucherie Road - In the project vicinity, La Brucherie Road is a north-south street providing one travel lane in each direction.

Canon Drive - Canon Drive is a north-south residential street providing one travel lane in each direction.

Dogwood Road - Dogwood Road is a north-south road parallel to SR-86 and provides one travel lane in each direction.



Intersections:
1. SR 86/Larsen Rd
2. SR 86/Ralph Rd
3. Neckel/La Brucheria Rd
4. SR 86/Neckel Rd
5. Neckel/Canon Dr
6. Neckel/Dogwood Rd
7. SR 86/15th St

Legend:
Ⓢ Signalized Intersection
Ⓤ Unsignalized Intersection
Stop Sign
Intersection Geometry: Lane/Use

ADVANTEC Consulting Engineers
Traffic • ITS • Civil • Electrical

Drawn by: VS
Checked by: SL

Project Name:
Holiday Inn Hotel – Traffic Impact Study

Existing Lane Configurations and Traffic Control

Project No.: 9801–0414

Figure 3.1

3.2 Existing Peak Hour Traffic Volumes

In order to define existing traffic conditions at the study intersections, peak hour turning movement counts were collected at the study intersections on a weekday during the hours of 7:00 AM to 9:00 AM, and 4:00 PM to 6:00 PM on Tuesday, July 13, 2010, intersections are listed as follows:

- SR-86 and Larsen Road (2 Way Stop Controlled)
- SR-86 and Ralph Road (2 Way Stop Controlled)
- Neckel Road and La Brucherie Road (2 Way Stop Controlled)
- SR-86 and Neckel Road (2 Way Stop Controlled)
- Neckel Road and Canon Drive (2 Way Stop Controlled)
- Neckel Road and Dogwood Road (2 Way Stop Controlled)
- SR-86 and 15th St (Signalized)

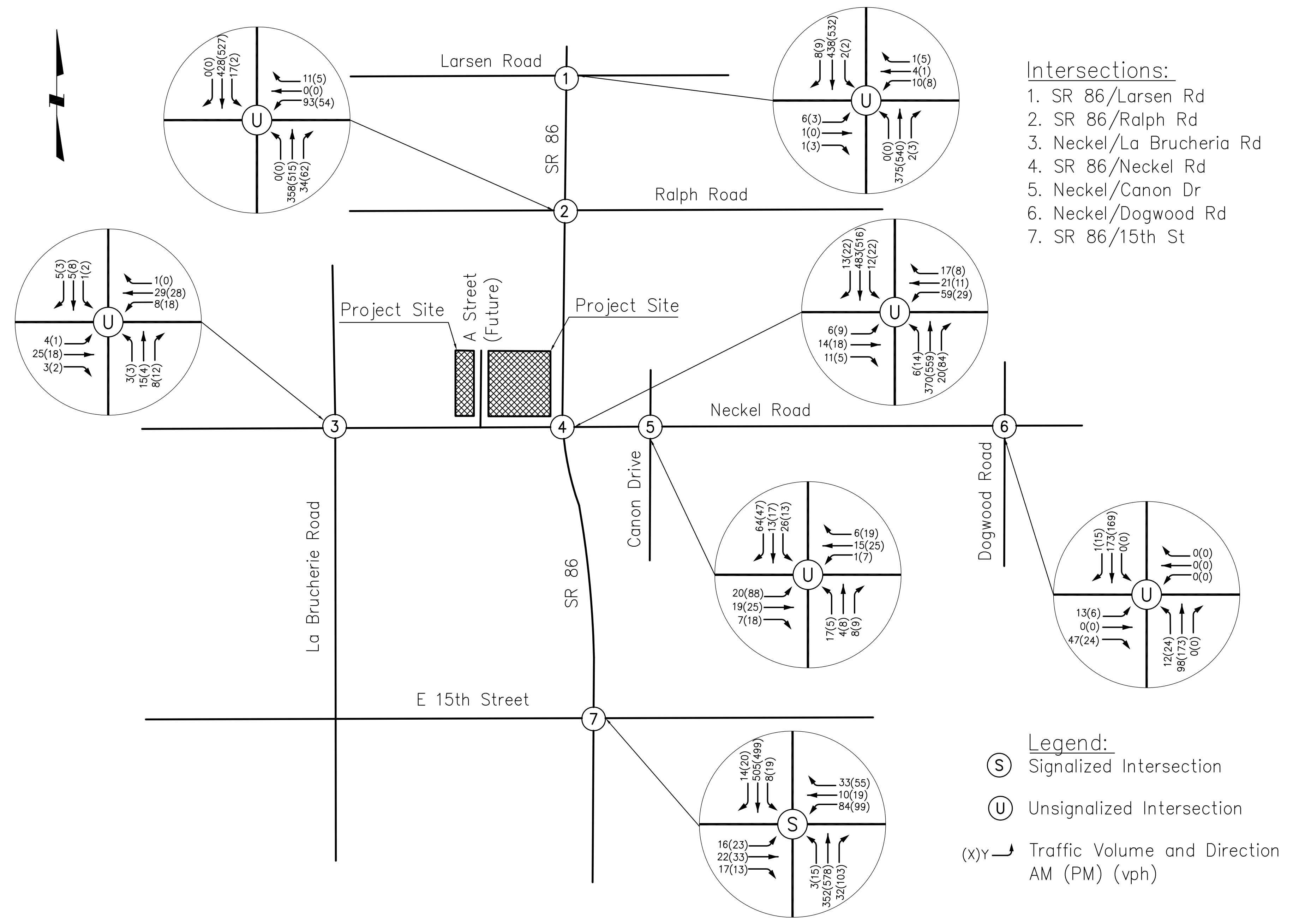
In addition, one day 24-hour ADT counts were also collected on the same day at the following four locations in consultation with the City staff:

i. Neckel Road - Between SR-86 and La Brucherie Road
ii. Neckel Road - Between SR-86 and Canal Road
iii. SR-86 - Between Neckel Road and 15th Street, and
iv. SR-86 - Between Neckel Road and Ralph Road

Figure 3.2 illustrates existing AM and PM peak hour traffic volumes. The detailed peak hour raw data traffic counts are provided in **Appendix A**.

3.3 Existing Level of Service Condition

Utilizing the traffic counts summarized in **Figure 3.2**, vehicle delay and corresponding level of service (LOS) was calculated for all of the study intersections utilizing the Highway Capacity manual 2000 (HCM 2000) methodologies for signalized and unsignalized intersections. **Table 3.1** and **Table 3.2** summarizes the vehicle delay, and LOS values for each study intersection under existing condition scenario. The SYNCHRO traffic analysis output files for existing conditions are provided in **Appendix B** of this report.



Intersections:

1. SR 86/Larsen Rd
2. SR 86/Ralph Rd
3. Neckel/La Brucheria Rd
4. SR 86/Neckel Rd
5. Neckel/Canon Dr
6. Neckel/Dogwood Rd
7. SR 86/15th St

Legend:

Ⓢ Signalized Intersection

Ⓤ Unsignalized Intersection

(X)Y ↗ Traffic Volume and Direction AM (PM) (vph)

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Checked by: SL	**Existing Volumes (AM and PM Peak Hour)**	**Figure 3.2**

Table 3.1 Existing Year 2010 - Level of Service Conditions – AM Peak

Existing 2010 Traffic Volumes - AM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	375	2	2	438	8	6	1	1	10	4	1	16.0	C
SR-86 and Ralph Road*	0	358	34	17	428	0	0	0	0	93	0	11	19.1	C
Neckel Rd and La Brucherie Rd*	3	15	8	1	5	5	4	25	3	8	29	1	9.4	A
SR-86 and Neckel Rd*	6	370	20	12	483	13	6	14	11	59	21	17	21.4	C
Neckel Rd and Canon Dr*	17	4	8	26	13	64	20	19	7	1	15	6	9.6	A
Neckel Rd and Dogwood Rd*	12	98	0	0	173	1	13	0	47	0	0	0	10.0	A
SR-86 and 15th St	3	352	32	8	505	14	16	22	17	84	10	33	6.7	A

**unsignalized intersections*

Table 3.1 Existing Year 2010 - Level of Service Conditions – PM Peak

Existing 2010 Traffic Volumes - PM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	540	3	2	532	9	3	0	3	8	1	5	17.4	C
SR-86 and Ralph Road*	0	515	62	2	527	0	0	0	0	54	0	5	22.6	C
Neckel Rd and La Brucherie Rd*	3	4	12	2	8	3	1	18	2	18	28	0	9.3	A
SR-86 and Neckel Rd*	14	559	84	22	516	22	9	18	5	29	11	8	29.6	D
Neckel Rd and Canon Dr*	5	8	9	13	17	47	88	25	18	7	25	19	10.4	B
Neckel Rd and Dogwood Rd*	24	173	0	0	169	15	6	0	24	0	0	0	10.0	A
SR-86 and 15th St	15	578	103	19	499	20	23	33	13	99	19	55	8.8	A

**unsignalized intersections*

4 Project Trip Calculation

4.1 Trip Generation

The proposed project generates vehicle trips impacting the transportation network. The study calculates individual project trips by each land use using the latest edition of Institute of Transportation Engineers (ITE) *Trip Generation Handbook, Seventh Edition (2003).* The project generates 128 (72 in, 56 out) AM and 165 (94 in, 71 out) PM peak hour trips.

The project consists of two separate phases. Phase I consists of Holiday Inn Hotel, fast food restaurant, restaurant and two office buildings. Phase II of the project consists of a gas station with convenience market and a starbucks coffee shop with drive through service. Trip generation results are summarized in **Table 4.1** and **Table 4.2**.

Table 4.1 Project Trip Generation - AM

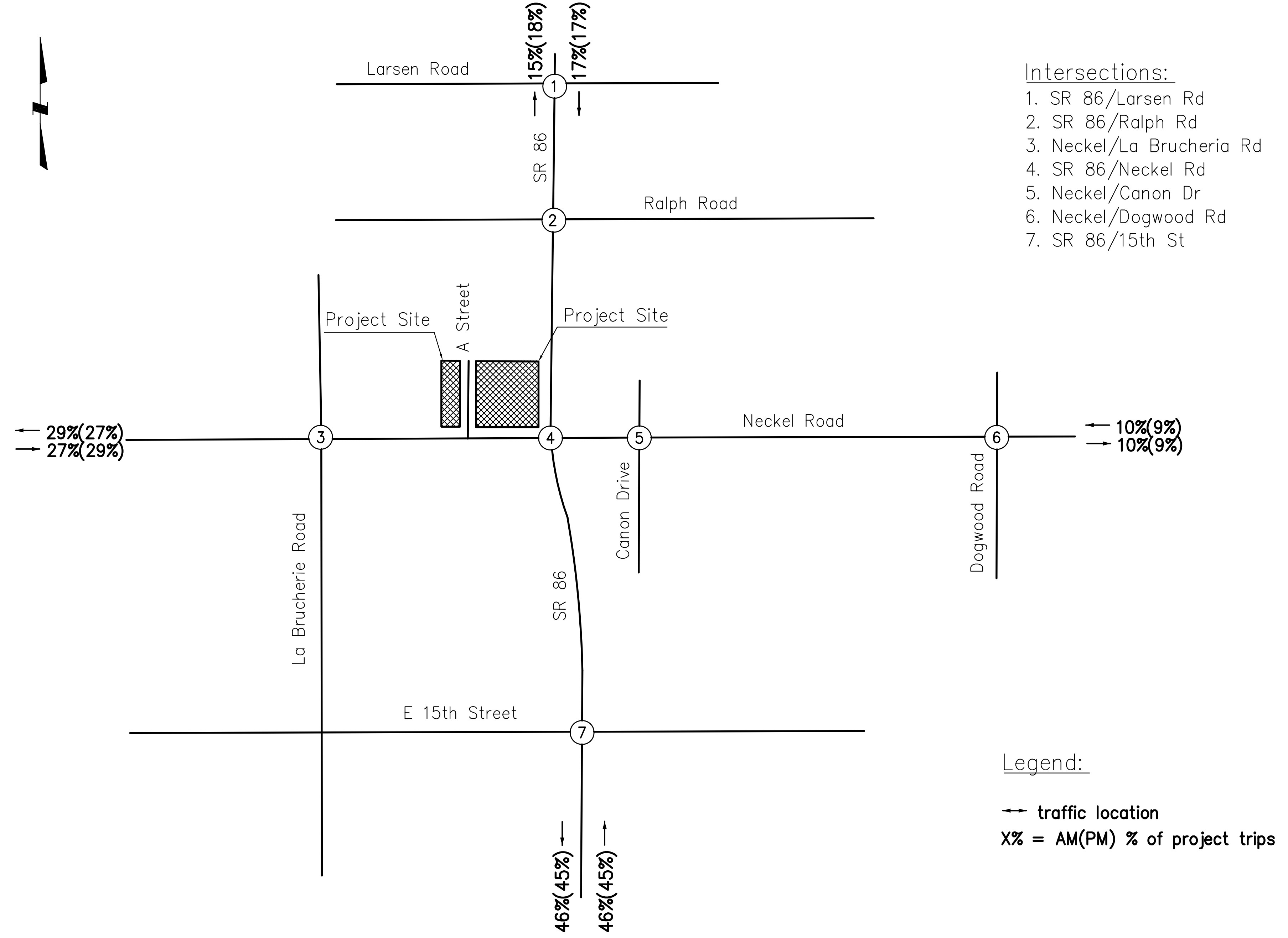
Project Trip Generations - AM	Land Use Code	AM Trips	IN (%)	OUT (%)	# IN trips	# OUT trips
Hotel (101 rooms)*- *Phase I*	310	96	58	42	55	40
Convenience Market with Gas Pumps (8 pumps) - *Phase II*	853	133	50	50	66	66
Restaurant (5,000 sq ft) - *Phase I*	932	58	52	48	30	28
Fast Food Restaurant with No drive through (5,000 sq ft) - *Phase I*	933	219	60	40	132	88
Starbucks Coffee with drive through (3,000 sq ft) - *Phase II*	937	332	51	49	169	163
Office Building (40,000 sq ft) - *Phase I*	710	90	88	12	79	11
Total Trips		**927**			**927**	

* note: using 78% of occupancy = 108 x 0.78 = 84; used fitted curved equation: T = 0.78(X) - 29.8 on Page 572 of ITE 8th edition

Table 4.2 Project Trip Generation - PM

Trip Generations - PM	Land Use Code	PM Trips	IN (%)	OUT (%)	# IN trips	# OUT trips
Hotel (101 rooms)*- *Phase I*	310	59	49	51	29	30
Convenience Market with Gas Pumps (8 pumps) - *Phase II*	853	153	50	50	76	76
Restaurant (5,000 sq ft) - *Phase I*	932	56	59	41	33	23
Fast Food Restaurant with No drive through (5,000 sq ft) - *Phase I*	933	131	51	49	67	64
Starbucks Coffee with drive through (3,000 sq ft) - *Phase II*	937	129	50	50	64	64
Office Building (40,000 sq ft) - *Phase I*	710	124	17	83	21	103
Total Trips		**650**			**650**	
* note: using 78% of occupancy = 108 x 0.78 = 84; used average rate of 0.70 on page 573 of 8th edition ITE trip generation						

Figure 4.1 shows the project trip distributions and **Figure 4.2** shows project trip assignments.



Intersections:

1. SR 86/Larsen Rd
2. SR 86/Ralph Rd
3. Neckel/La Brucheria Rd
4. SR 86/Neckel Rd
5. Neckel/Canon Dr
6. Neckel/Dogwood Rd
7. SR 86/15th St

Legend:

↔ traffic location
X% = AM(PM) % of project trips

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Drawn by:
VS

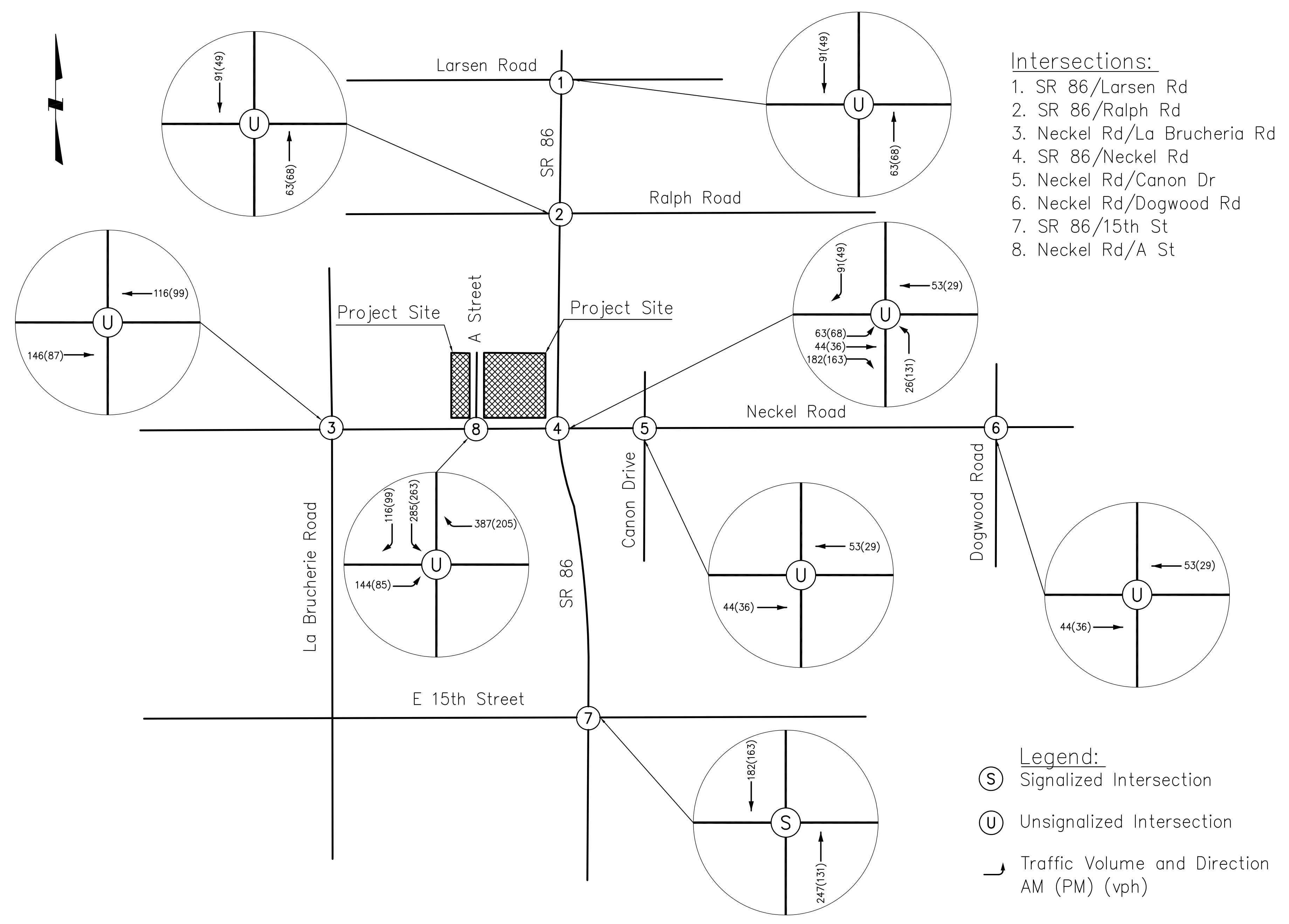
Checked by:
SL

Project Name:
Holiday Inn Hotel – Traffic Impact Study

Phase I & II Project Trip Distribution – AM & PM Peak

Project No.:
9801–0414

Figure 4.1



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Drawn by: VS	Project Name: Holiday Inn Hotel – Traffic Impact Study	Project No.: 9801–0414
Checked by: SL	**Phase 1&2 Project Trip Assignment – AM & PM Peak**	**Figure 4.2**

5 Project Phase I - Opening Year 2012

5.1 Opening Year 2012 - without Project Condition

ADVANTEC has consulted with the City of Imperial and Caltrans District 11 staff on ambient growth rate assumption. Opening year traffic volumes were calculated using an annual growth rate of 2% on City streets and 1.5% for north and south direction along SR-86 within project studied area. **Table 5.1** and **Table 5.2** show the opening year 2012 traffic volumes for AM and PM peak periods respectively.

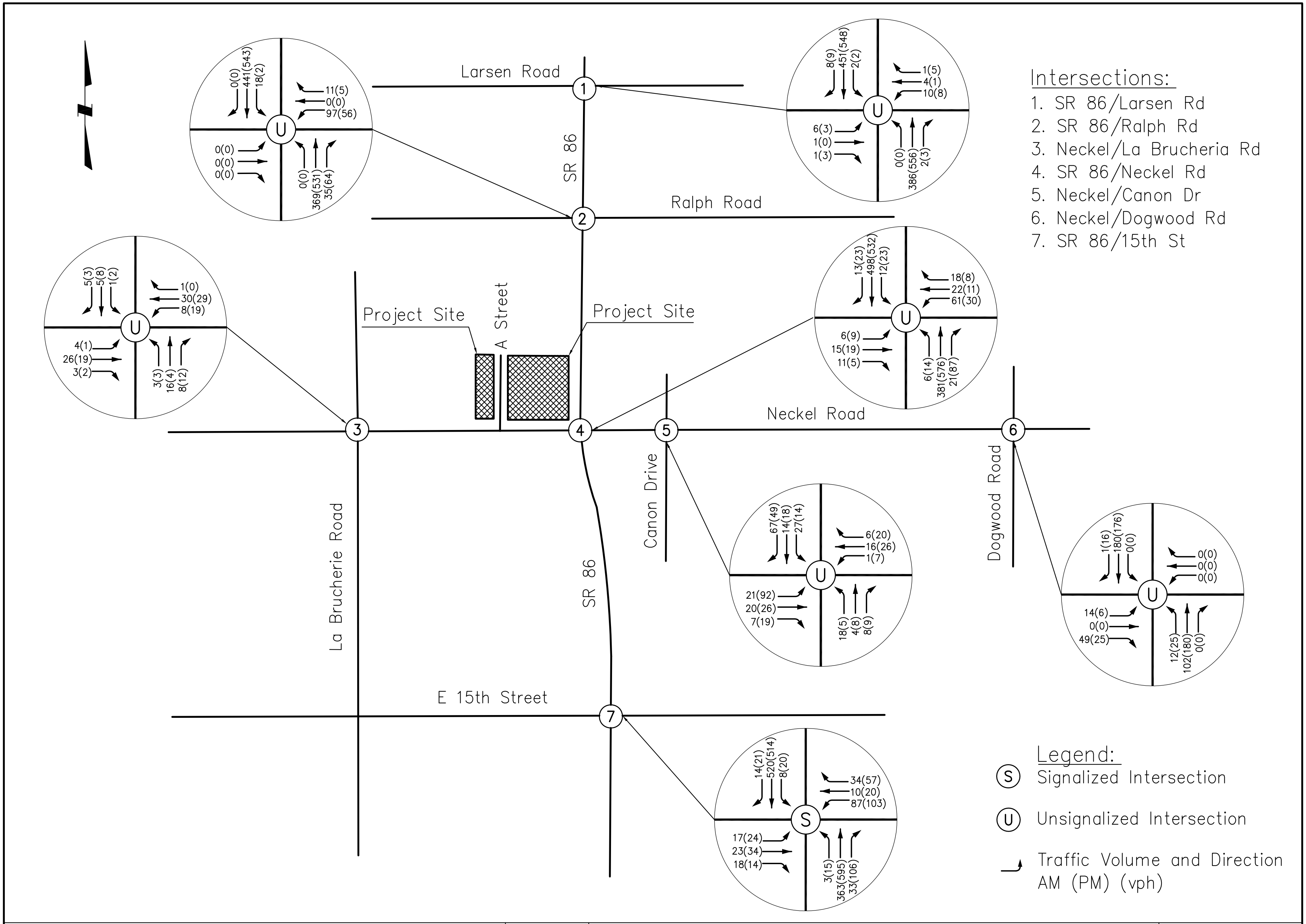
According to **Table 5.1** and **Table 5.2**, intersections LOS have operated at LOS C or better during AM peak, and LOS D or better during PM Peak. The resulting LOS D at Neckel Road/SR-86 was due to side street delays on Neckel Road. However, the traffic volumes are minimal and not warranted for signalization, therefore no mitigation was provided.

Table 5.1 Opening Year 2012 without Project Conditions Traffic Volumes - AM

2012 Phase 1 Opening Year Without Project - AM Peak													
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	386	2	2	451	8	6	1	1	10	4	1	16.4	C
SR-86 and Ralph Road*	0	369	35	18	441	0	0	0	0	97	0	11	20.1	C
Neckel Rd and La Brucherie Rd*	3	16	8	1	5	5	4	26	3	8	30	1	9.4	A
SR-86 and Neckel Rd*	6	381	21	12	498	13	6	15	11	61	22	18	22.6	C
Neckel Rd and Canon Dr*	18	4	8	27	14	67	21	20	7	1	16	6	9.7	A
Neckel Rd and Dogwood Rd*	12	102	0	0	180	1	14	0	49	0	0	0	10.1	B
SR-86 and 15th St	3	363	33	8	520	14	17	23	18	87	10	34	6.8	A
** unsignalized*														
N/S on SR-86 traffic volumes using 1.5% ambient growth														

Table 5.2 Opening Year 2012 without Project Conditions Traffic Volumes - PM

2012 Phase 1 Opening Year Without Project - PM Peak													
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	556	3	2	548	9	3	0	3	8	1	5	17.9	C
SR-86 and Ralph Road*	0	531	64	2	543	0	0	0	0	56	0	5	23.9	C
Neckel Rd and La Brucherie Rd*	3	4	12	2	8	3	1	19	2	19	29	0	9.3	A
SR-86 and Neckel Rd*	14	576	87	23	532	23	9	19	5	30	11	8	31.9	D
Neckel Rd and Canon Dr*	5	8	9	14	18	49	92	26	19	7	26	20	10.5	B
Neckel Rd and Dogwood Rd*	25	180	0	0	176	16	6	0	25	0	0	0	10.0	B
SR-86 and 15th St	15	595	106	20	514	21	24	34	14	103	20	57	9.0	A
** unsignalized*														
N/S on SR-86 traffic volumes using 1.5% ambient growth														



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Drawn by:
VS

Checked by:
SL

Project Name:
Holiday Inn Hotel – Traffic Impact Study

Opening Year 2012 Traffic Volumes No Project – AM & PM Peak

Project No.:
9801–0414

Figure 5.1

5.2 Opening Year 2012 - with Phase I Project Condition

Opening year of the project phase I was assumed to be year 2012. This scenario analyzes the studied intersections with Phase I project volumes. These volumes are calculated by adding the trip assignments to the base 2012 turning movement volumes.

Tables 5.3 and **Table 5.4** show AM and PM peak hour traffic volumes and it is to be concluded that intersections have operated at LOS C or better during AM peak, and LOS D or better during PM peak, all intersections but SR-86/Neckel Road, has operated at LOS F. The resulting LOS F was due to side street delays on Neckel Road. With the already planned signalized of the intersection, LOS would improve from LOS F (as unsignalized) to LOS A (if signalized).

Table 5.3 Opening Year 2012 with Phase I Project Conditions - AM Traffic Volumes & LOS

2012 Opening Year with Phase 1 Project - AM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	414	2	2	507	8	6	1	1	10	4	1	17.7	C
SR-86 and Ralph Road*	0	397	35	18	497	0	0	0	0	97	0	11	22.4	C
Neckel Rd and La Brucherie Rd*	3	16	8	1	5	5	4	95	3	8	71	1	9.9	A
SR-86 and Neckel Rd*	154	381	21	12	498	69	34	36	97	61	51	18	-	F
Neckel Rd and Canon Dr*	18	4	8	27	14	67	21	41	7	1	45	6	10.1	B
Neckel Rd and Dogwood Rd*	12	102	0	0	180	1	14	21	49	0	29	0	11.5	B
SR-86 and 15th St	3	511	33	8	606	14	17	23	18	87	10	34	6.6	A
Neckel Rd and "A" St	0	0	0	131	0	41	69	38	0	0	40	229	9.5	A
** unsignalized*														

Table 5.4 Opening Year 2012 with Phase I Project Conditions - PM Traffic Volumes & LOS

2012 Opening Year with Phase 1 Project - PM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	603	3	2	576	9	3	0	3	8	1	5	19.5	C
SR-86 and Ralph Road*	0	578	64	2	571	0	0	0	0	56	0	5	26.9	D
Neckel Rd and La Brucherie Rd*	3	4	12	2	8	3	1	57	2	19	79	0	9.8	A
SR-86 and Neckel Rd*	89	576	87	23	532	51	56	41	112	30	26	8	-	F
Neckel Rd and Canon Dr*	5	8	9	14	18	49	92	48	19	7	41	20	10.7	B
Neckel Rd and Dogwood Rd*	25	180	0	0	176	16	6	22	25	0	15	0	12.6	B
SR-86 and 15th St	15	670	106	20	621	21	24	34	14	103	20	57	9.1	A
Neckel Rd and "A" St	0	0	0	172	0	50	38	42	0	0	47	114	9.8	A
** unsignalized*														

Figure 5.2 shows opening year 2012 with Phase I project traffic volumes.

5.2 Opening Year 2012 - with Phase I Project Condition

Opening year of the project phase I was assumed to be year 2012. This scenario analyzes the studied intersections with Phase I project volumes. These volumes are calculated by adding the trip assignments to the base 2012 turning movement volumes.

Tables 5.3 and **Table 5.4** show AM and PM peak hour traffic volumes and it is to be concluded that intersections have operated at LOS D or better during AM and PM peak, all intersections but SR-86/Neckel Road, has operated at LOS F. The resulting LOS F was due to side street delays on Neckel Road. With the already planned signalized of the intersection, LOS would improve from LOS F (as unsignalized) to LOS A (if signalized).

Table 5.3 Opening Year 2012 with Phase I Project Conditions - AM Traffic Volumes & LOS

2012 Opening Year with Phase 1 Project - AM Peak													
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	414	2	2	507	8	6	1	1	10	4	1	17.7	C
SR-86 and Ralph Road*	0	397	35	18	497	0	0	0	0	97	0	11	22.4	C
Neckel Rd and La Brucherie Rd*	3	16	8	1	5	5	4	95	3	8	71	1	9.9	A
SR-86 and Neckel Rd*	154	381	21	12	498	69	34	36	97	61	51	18	-	F
Neckel Rd and Canon Dr*	18	4	8	27	14	67	21	41	7	1	45	6	10.1	B
Neckel Rd and Dogwood Rd*	12	102	0	0	180	1	14	21	49	0	29	0	11.5	B
SR-86 and 15th St	3	511	33	8	606	14	17	23	18	87	10	34	6.6	A
Neckel Rd and "A" St	0	0	0	131	0	41	69	38	0	0	40	229	9.5	A

** unsignalized*

Table 5.4 Opening Year 2012 with Phase I Project Conditions - PM Traffic Volumes & LOS

2012 Opening Year with Phase 1 Project - PM Peak													
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	603	3	2	576	9	3	0	3	8	1	5	19.5	C
SR-86 and Ralph Road*	0	578	64	2	571	0	0	0	0	56	0	5	26.9	D
Neckel Rd and La Brucherie Rd*	3	4	12	2	8	3	1	57	2	19	79	0	9.8	A
SR-86 and Neckel Rd*	89	576	87	23	532	51	56	41	112	30	26	8	-	F
Neckel Rd and Canon Dr*	5	8	9	14	18	49	92	48	19	7	41	20	10.7	B
Neckel Rd and Dogwood Rd*	25	180	0	0	176	16	6	22	25	0	15	0	12.6	B
SR-86 and 15th St	15	670	106	20	621	21	24	34	14	103	20	57	9.1	A
Neckel Rd and "A" St	0	0	0	172	0	50	38	42	0	0	47	114	9.8	A

** unsignalized*

Figure 5.2 Opening Year 2012 with Phase I Project Traffic Volumes

5.3 Opening Year 2017 - with No Project Conditions

Opening year of the project phase II was assumed to be year 2017. This scenario analyzes the studied intersections without project volumes.

Tables 5.5 and **Table 5.6** show AM and PM peak hour traffic volumes and it is to be concluded that intersections have operated at LOS C or better during AM peak, and LOS D or better during PM peak, all intersections but SR-86/Neckel Road, has operated at LOS F. The resulting LOS F was due to side street delays on Neckel Road. With the already planned signalized of the intersection, LOS would improve from LOS F (as unsignalized) to LOS A (if signalized).

Table 5.5 Opening Year 2017 without Project Conditions - AM Traffic Volumes & LOS

2017 Phase 2 Opening Year Without Project - AM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	416	2	2	486	9	7	1	1	11	5	1	17.8	C
SR-86 and Ralph Road*	0	397	38	19	475	0	0	0	0	107	0	13	23.1	C
Neckel Rd and La Brucherie Rd*	3	17	9	1	6	6	5	29	3	9	33	1	9.4	A
SR-86 and Neckel Rd*	7	411	22	13	536	14	7	16	13	68	24	20	27.4	D
Neckel Rd and Canon Dr*	20	5	9	30	15	74	23	22	8	1	17	7	9.9	A
Neckel Rd and Dogwood Rd*	14	113	0	0	199	1	15	0	54	0	0	0	10.3	B
SR-86 and 15th St	3	391	36	9	560	16	18	25	20	96	11	38	7.5	A
** unsignalized*														
N/S on SR-86 traffic volumes using 1.5% ambient growth														

Table 5.6 Opening Year 2017 without Project Conditions - PM Traffic Volumes & LOS

2017 Phase 2 Opening Year Without Project - PM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	599	3	2	590	10	3	0	3	9	1	6	19.3	C
SR-86 and Ralph Road*	0	572	69	2	585	0	0	0	0	62	0	6	27.8	D
Neckel Rd and La Brucherie Rd*	3	5	14	2	9	3	1	21	2	21	32	0	9.4	A
SR-86 and Neckel Rd*	16	620	93	24	573	24	10	21	6	33	13	9	40.7	E
Neckel Rd and Canon Dr*	6	9	10	15	20	54	101	29	21	8	29	22	10.8	B
Neckel Rd and Dogwood Rd*	28	199	0	0	194	17	7	0	28	0	0	0	10.3	B
SR-86 and 15th St	17	641	114	21	554	22	26	38	15	114	22	63	9.8	A
** unsignalized*														
N/S on SR-86 traffic volumes using 1.5% ambient growth														

5.4 Opening Year 2017 - with Phase I & II Project Conditions

Opening year of the project phase II was assumed to be year 2017, five years after Phase I completion. This scenario analyzes the studied intersections with Phase I project volumes. These volumes are calculated by adding the trip assignments to the base 2012 traffic volumes.

Tables 5.7 and **Table 5.8** show AM and PM peak hour traffic volumes and it is to be concluded that intersections have operated at LOS D or better during AM and PM peak, all intersections but SR-86/Neckel Road, has operated at LOS F. The resulting LOS F was due to side street delays on Neckel Road. With the already planned signalization of the intersection, LOS would improve from LOS F (as unsignalized) to LOS A (delay 8.4) for AM peak and LOS A (delay of 6.8 seconds) for PM peak.

Table 5.7 Opening Year 2017 with Phase I & II Project Conditions - AM Traffic Volumes & LOS

2017 Opening Year With Phase 1 + Phase 2 Projects - AM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	479	2	2	577	9	7	1	1	11	5	1	21.1	C
SR-86 and Ralph Road*	0	460	38	19	566	0	0	0	0	107	0	13	30.2	D
Neckel Rd and La Brucherie Rd*	3	17	9	1	6	6	5	175	3	9	149	1	10.6	B
SR-86 and Neckel Rd*	254	411	22	13	536	105	70	60	195	68	77	20	-	F
Neckel Rd and Canon Dr*	20	5	9	30	15	74	23	66	8	1	70	7	10.7	B
Neckel Rd and Dogwood Rd*	14	113	0	0	199	1	15	44	54	0	53	0	12.2	B
SR-86 and 15th St	3	638	36	9	742	16	18	25	20	96	11	38	7.4	A
Neckel Rd and "A" St	0	0	0	285	0	116	146	39	0	0	33	387	17.1	C
** unsignalized*														

Table 5.8 Opening Year 2017 with Phase I & II Project Conditions - PM Traffic Volumes & LOS

2017 Opening Year With Phase 1 + Phase 2 Projects - PM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	667	3	2	639	10	3	0	3	9	1	6	22.0	C
SR-86 and Ralph Road*	0	640	69	2	634	0	0	0	0	62	0	6	34.3	D
Neckel Rd and La Brucherie Rd*	3	5	14	2	9	3	1	108	2	21	131	0	10.3	B
SR-86 and Neckel Rd*	147	620	93	24	573	73	78	57	169	33	42	9	-	F
Neckel Rd and Canon Dr*	6	9	10	15	20	54	101	65	21	8	58	22	11.3	B
Neckel Rd and Dogwood Rd*	28	199	0	0	194	17	7	36	28	0	29	0	13.4	B
SR-86 and 15th St	17	772	114	21	717	22	26	38	15	114	22	63	9.9	A
Neckel Rd and "A" St	0	0	0	263	0	99	87	37	0	0	54	205	13.4	B
** unsignalized*														

5.5 Opening Year 2017 - with Phase I & II & Morningstar Project Conditions

The Morningstar project that was located just west of Neckel Road/A Street was to be included in the analysis. The Morningstar project consists of single/multiple unit residential housing, school and park, this project was assumed to be completed in 2017. Morningstar project trips were obtained from the latest project study report dated in 2006, provided by the City of Imperial.

Table 5.9 and **Table 5.10** summarize the LOS results for the cumulative project conditions, three intersections would operate at LOS F due to 2 way stop controlled side street delays:

1. SR-86/Larsen Rd (PM) – since side street traffic volumes on Larsen Road are insignificant, no mitigation is recommended.

2. SR-86/Ralph Rd (AM/PM) – it is recommended to signalize the intersection due to heavy WBL movement of 146 veh/hr. With signalization of the intersection, LOS will improve from F to LOS A.

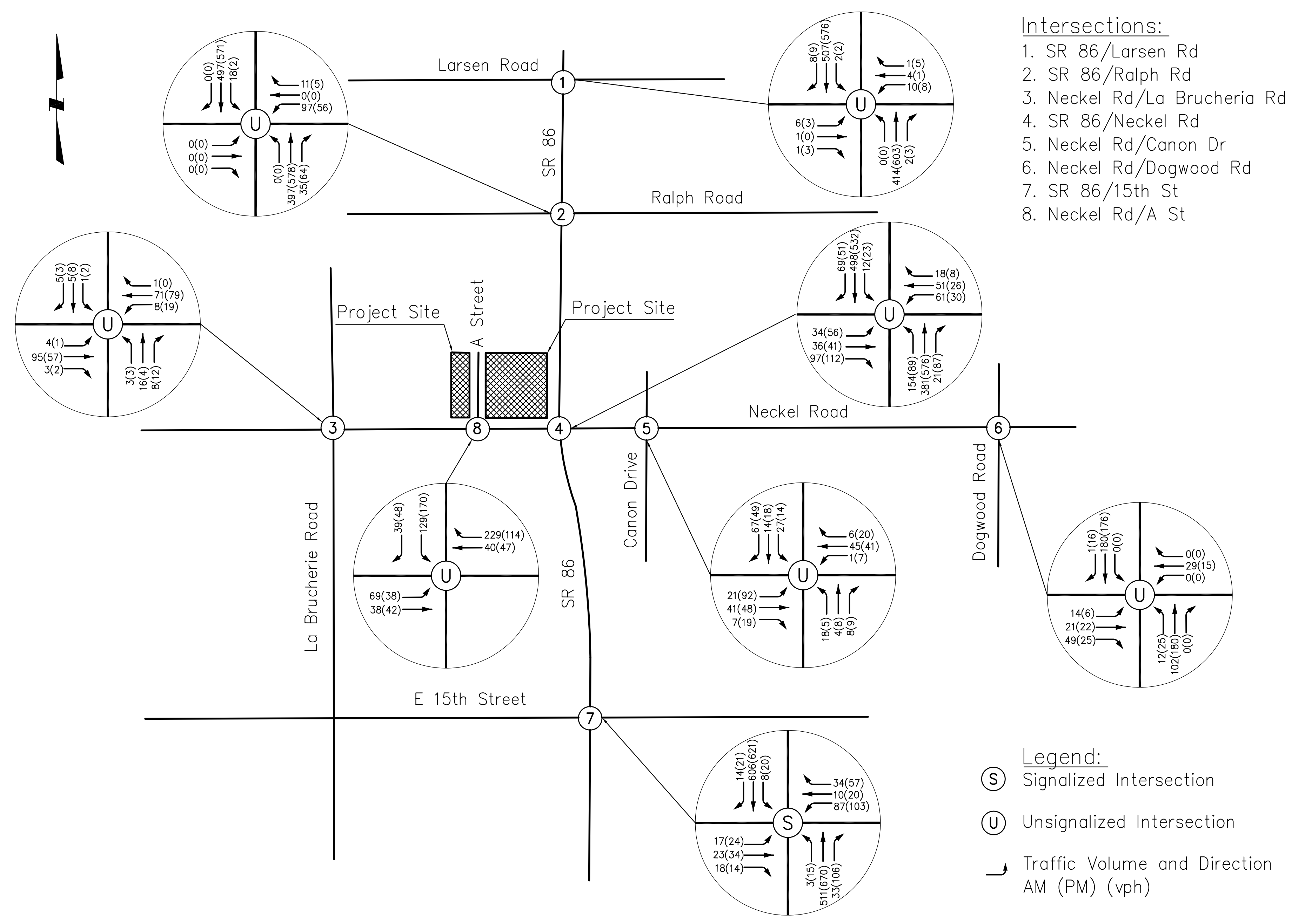
3. SR-86/Neckel Rd (AM/PM) – it is recommended to signalize the intersection due to heavy EBL and WBL on side street at Neckel Rd. With signalization of the intersection, LOS will improve from F to LOS D in AM (33.4 seconds of delay) and LOS A in PM (6.8 seconds of delay)

Table 5.9 Opening Year 2017 with Phase I & II & Cumulative Project Conditions - AM Traffic Volumes & LOS

2017 Opening Year With Phase 1 + Phase 2 + Cumulative Projects - AM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	479	2	2	577	9	7	1	1	11	5	1	21.1	C
SR-86 and Ralph Road*	18	617	76	25	699	12	38	22	57	146	7	28	-	F
Neckel Rd and La Brucherie Rd*	3	17	9	1	6	6	5	175	3	9	149	1	10.6	B
SR-86 and Neckel Rd*	289	531	76	30	685	168	121	80	271	203	107	62	-	F
Neckel Rd and Canon Dr*	20	5	9	30	15	74	23	66	8	1	70	7	10.7	B
Neckel Rd and Dogwood Rd*	14	113	0	0	199	1	15	44	54	0	53	0	12.3	B
SR-86 and 15th St	3	638	36	9	742	16	18	25	20	96	11	38	7.4	A
Neckel Rd and "A" St	0	0	0	285	0	116	146	39	0	0	33	387	17.6	C
** unsignalized*														

Table 5.10 Opening Year 2017 with Phase I & II & Cumulative Project Conditions - PM Traffic Volumes & LOS

2017 Opening Year With Phase 1 + Phase 2 + Cumulative Projects - PM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	855	12	2	890	25	12	1	3	21	3	6	-	F
SR-86 and Ralph Road*	60	835	104	20	852	39	22	14	34	97	23	6	-	F
Neckel Rd and La Brucherie Rd*	3	100	25	36	71	12	17	108	2	28	131	0	13.9	B
SR-86 and Neckel Rd*	147	620	93	24	573	73	78	57	169	33	42	9	-	F
Neckel Rd and Canon Dr*	6	9	10	15	20	54	101	65	21	8	58	22	11.3	B
Neckel Rd and Dogwood Rd*	28	199	0	0	194	17	7	36	28	0	29	0	13.4	B
SR-86 and 15th St	17	772	114	21	717	22	26	38	15	114	22	63	9.9	A
Neckel Rd and "A" St	0	0	0	263	0	99	87	37	0	0	54	205	13.4	B
** unsignalized*														



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Drawn by: VS	Project Name: Holiday Inn Hotel – Traffic Impact Study	Project No.: 9801–0414
Checked by: SL	**Opening Year 2012 Traffic Volumes + Phase 1 Project – AM & PM Peak**	**Figure 5.2**

5.3 Opening Year 2017 - with Phase I & II & Morningstar Project Conditions

The Morningstar project that was located just west of Neckel Road/A Street was to be included in the analysis. The Morningstar project consists of single/multiple unit residential housing, school and park, this project was assumed to be completed in 2017. Morningstar project trips were obtained from the latest project study report dated in 2006, provided by the City of Imperial.

Table 5.7 and **Table 5.8** summarize the LOS results for the cumulative project conditions, three intersections would operate at LOS F due to 2 way stop controlled side street delays:

1. SR-86/Larsen Rd (PM) – since side street traffic volumes on Larsen Road are insignificant, no mitigation is recommended.

2. SR-86/Ralph Rd (AM/PM) – it is recommended to signalize the intersection due to heavy WBL movement of 146 veh/hr. With signalization of the intersection, LOS will improve from F to LOS A.

3. SR-86/Neckel Rd (AM/PM) – it is recommended to signalize the intersection due to heavy EBL and WBL on side street at Neckel Rd. With signalization of the intersection, LOS will improve from F to LOS D in AM (33.4 seconds of delay) and LOS A in PM (6.8 seconds of delay)

Table 5.7 Opening Year 2017 with Phase I & II & Cumulative Project Conditions - AM Traffic Volumes & LOS

2017 Opening Year With Phase 1 + Phase 2 + Cumulative Projects - AM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	479	2	2	577	9	7	1	1	11	5	1	21.1	C
SR-86 and Ralph Road*	18	617	76	25	699	12	38	22	57	146	7	28	-	F
Neckel Rd and La Brucherie Rd*	3	17	9	1	6	6	5	175	3	9	149	1	10.6	B
SR-86 and Neckel Rd*	289	531	76	30	685	168	121	80	271	203	107	62	-	F
Neckel Rd and Canon Dr*	20	5	9	30	15	74	23	66	8	1	70	7	10.7	B
Neckel Rd and Dogwood Rd*	14	113	0	0	199	1	15	44	54	0	53	0	12.3	B
SR-86 and 15th St	3	638	36	9	742	16	18	25	20	96	11	38	7.4	A
Neckel Rd and "A" St	0	0	0	285	0	116	146	39	0	0	33	387	17.6	C
** unsignalized*														

Table 5.8 Opening Year 2017 with Phase I & II & Cumulative Project Conditions - PM Traffic Volumes & LOS

2017 Opening Year With Phase 1 + Phase 2 + Cumulative Projects - PM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	855	12	2	890	25	12	1	3	21	3	6	-	F
SR-86 and Ralph Road*	60	835	104	20	852	39	22	14	34	97	23	6	-	F
Neckel Rd and La Brucherie Rd*	3	100	25	36	71	12	17	108	2	28	131	0	13.9	B
SR-86 and Neckel Rd*	147	620	93	24	573	73	78	57	169	33	42	9	-	F
Neckel Rd and Canon Dr*	6	9	10	15	20	54	101	65	21	8	58	22	11.3	B
Neckel Rd and Dogwood Rd*	28	199	0	0	194	17	7	36	28	0	29	0	13.4	B
SR-86 and 15th St	17	772	114	21	717	22	26	38	15	114	22	63	9.9	A
Neckel Rd and "A" St	0	0	0	263	0	99	87	37	0	0	54	205	13.4	B
** unsignalized*														

6. Future Year 2035 Conditions

This section presents LOS analysis results of the Future Year 2035 with and without Project scenarios.

6.1 Future Year 2035 without Project

ADVANTEC has consulted with the City of Imperial and Caltrans District 11 staff on ambient growth rate assumption. Year 2035 traffic volumes were calculated using an annual growth rate of 2% on City streets and 1.5% for north and south direction along SR-86 within project studied area. **Table 6.1** and **Table 6.2** show the future year 2035 traffic volumes for AM and PM peak periods respectively. According to **Table 6.1** and **Table 6.2**, two intersections would operate at LOS F due to 2 way stop controlled side street delays:

1. SR-86/Ralph Rd (AM/PM) – it is recommended to signalize the intersection due to heavy WBL movement of 153 veh/hr. With signalization of the intersection, LOS will improve from F to LOS A.

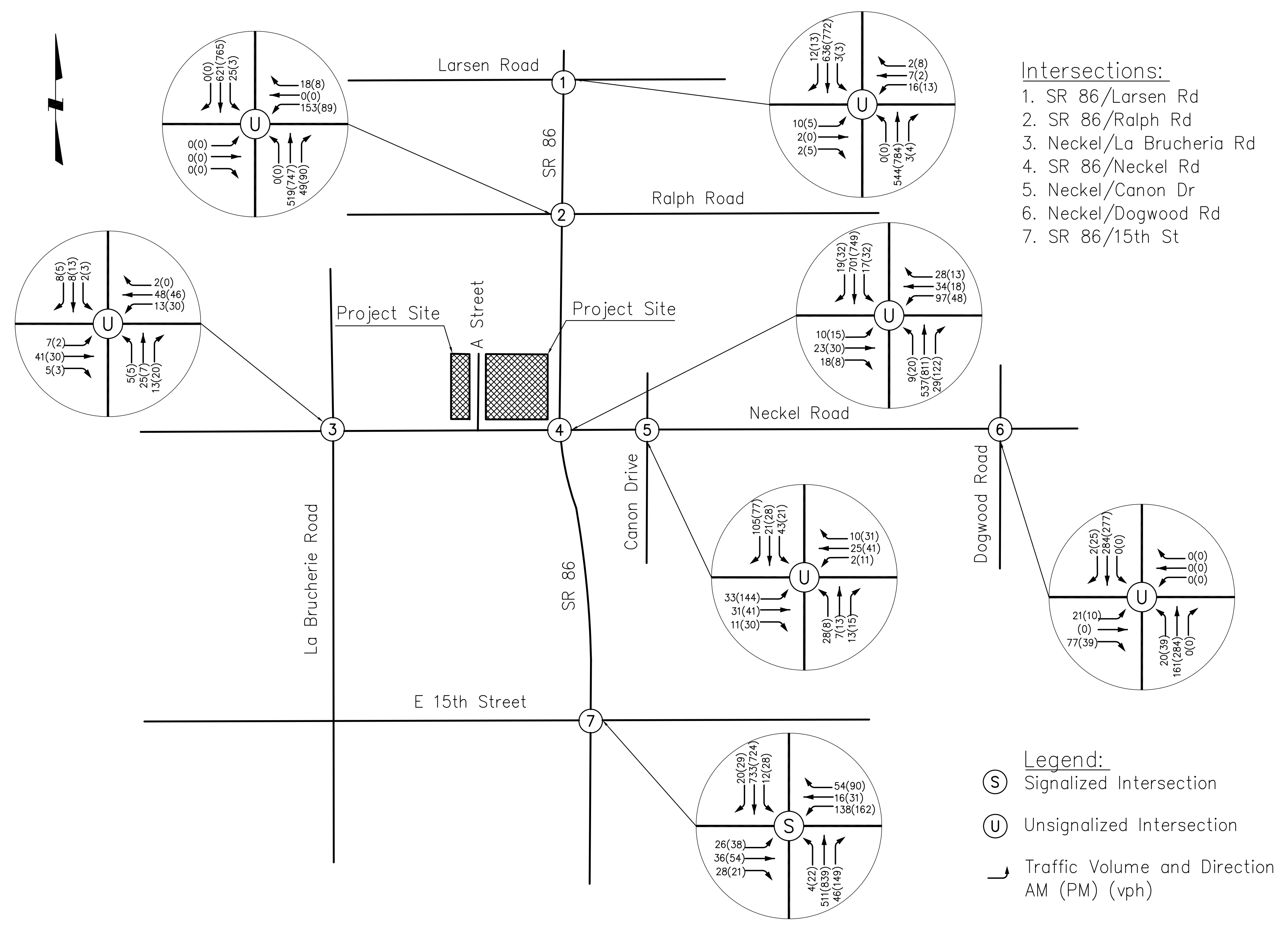
2. SR-86/Neckel Rd (AM/PM) – it is recommended to signalize the intersection due to heavy EBL and WBL on side street at Neckel Rd. With signalization of the intersection, LOS will improve from F to LOS A in both AM and PM peak periods.

Table 6.1 Future Year 2035 without Project Conditions Traffic Volumes - AM

2035 Horizon Year Without Project														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	544	3	3	636	12	10	2	2	16	7	2	25.0	D
SR-86 and Ralph Road*	0	519	49	25	621	0	0	0	0	153	0	18	-	F
Neckel Rd and La Brucherie Rd*	5	25	13	2	8	8	7	41	5	13	48	2	9.7	A
SR-86 and Neckel Rd*	9	537	29	17	701	19	10	23	18	97	34	28	-	F
Neckel Rd and Canon Dr*	28	7	13	43	21	105	33	31	11	2	25	10	10.7	B
Neckel Rd and Dogwood Rd*	20	161	0	0	284	2	21	0	77	0	0	0	11.7	B
SR-86 and 15th St	4	511	46	12	733	20	26	36	28	138	16	54	8.5	A
** Unsignalized*														
N/S on SR-86 traffic volumes using 1.5% ambient growth														

Table 6.2 Future Year 2035 without Project Conditions Traffic Volumes - PM

2035 Horizon Year Without Project														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	784	4	3	772	13	5	0	5	13	2	8	31.4	D
SR-86 and Ralph Road*	0	747	90	3	765	0	0	0	0	89	0	8	-	F
Neckel Rd and La Brucherie Rd*	5	7	20	3	13	5	2	30	3	30	46	0	9.7	A
SR-86 and Neckel Rd*	20	811	122	32	749	32	15	30	8	48	18	13	-	F
Neckel Rd and Canon Dr*	8	13	15	21	28	77	144	41	30	11	41	31	12.2	B
Neckel Rd and Dogwood Rd*	39	284	0	0	277	25	10	0	39	0	0	0	11.7	B
SR-86 and 15th St	22	839	149	28	724	29	38	54	21	162	31	90	13.5	B
** Unsignalized*														
N/S on SR-86 traffic volumes using 1.5% ambient growth														



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Checked by: SL

Project Name: Holiday Inn Hotel – Traffic Impact Study

Project No.: 9801–0414

Horizon Year 2035 Traffic Volumes (No Project) – AM & PM Peak

Figure 6.1

6.2 Future Year 2035 with Project Conditions

Future year of the project was assumed to be year 2035. This scenario analyzes the studied intersections with Phase I & II project volumes.

Tables 6.3 and **Table 6.4** show AM and PM peak hour traffic volumes and it is to be concluded that intersections have operated at LOS D or better during AM and PM peak, all intersections but SR-86/Neckel Road, has operated at LOS F.

1. SR-86/Ralph Rd (AM/PM) – it is recommended to signalize the intersection due to heavy WBL movement of 153 veh/hr. With signalization of the intersection, LOS will improve from F to LOS A.

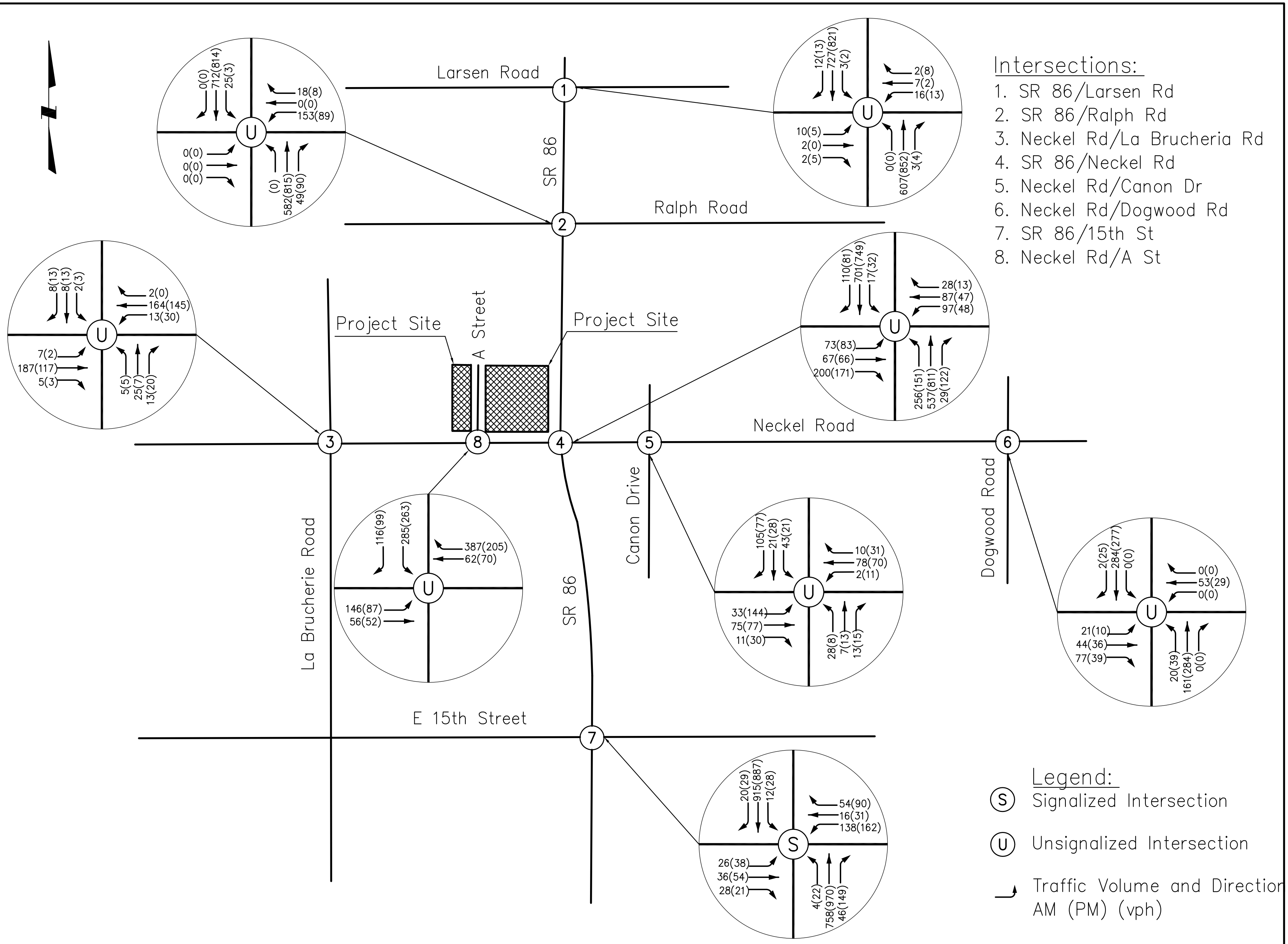
2. SR-86/Neckel Rd (AM/PM) – it is recommended to signalize the intersection due to heavy EBL and WBL on side street at Neckel Rd. With signalization of the intersection, LOS will improve from F to LOS B in AM (16 seconds of delay) and LOS B in PM (10.2 seconds of delay)

Table 6.3 Future Year 2035 with Project Conditions - AM Traffic Volumes & LOS

2035 Horizon Year With Phase 1 + Phase 2 Projects - AM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	607	3	3	727	12	10	2	2	16	7	2	31.0	D
SR-86 and Ralph Road*	0	582	49	25	712	0	0	0	0	153	0	18	-	F
Neckel Rd and La Brucherie Rd*	5	25	13	2	8	8	7	187	5	13	164	2	11.0	B
SR-86 and Neckel Rd*	256	537	29	17	701	110	73	67	200	97	87	28	-	F
Neckel Rd and Canon Dr*	28	7	13	43	21	105	33	75	11	2	78	10	11.7	B
Neckel Rd and Dogwood Rd*	20	161	0	0	284	2	21	44	77	0	53	0	14.2	B
SR-86 and 15th St	4	758	46	12	915	20	26	36	28	138	16	54	8.7	A
Neckel Rd and "A" St	0	0	0	285	0	116	146	56	0	0	62	387	18.9	C
** Unsignalized*														

Table 6.4 Future Year 2035 with Project Conditions - PM Traffic Volumes & LOS

2035 Horizon Year With Phase 1 + Phase 2 Projects - PM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	852	4	3	821	13	5	0	5	13	2	8	37.6	E
SR-86 and Ralph Road*	0	815	90	3	814	0	0	0	0	89	0	8	-	F
Neckel Rd and La Brucherie Rd*	5	7	20	3	13	5	2	117	3	30	145	0	10.7	B
SR-86 and Neckel Rd*	151	811	122	32	749	81	83	66	171	48	47	13	-	F
Neckel Rd and Canon Dr*	8	13	15	21	28	77	144	77	30	11	70	31	13.0	B
Neckel Rd and Dogwood Rd*	39	284	0	0	277	25	10	36	39	0	29	0	16.6	C
SR-86 and 15th St	22	970	149	28	887	29	38	54	21	162	31	90	13.7	B
Neckel Rd and "A" St	0	0	0	263	0	99	87	52	0	0	70	205	13.9	B
** Unsignalized*														



Intersections:
1. SR 86/Larsen Rd
2. SR 86/Ralph Rd
3. Neckel Rd/La Brucheria Rd
4. SR 86/Neckel Rd
5. Neckel Rd/Canon Dr
6. Neckel Rd/Dogwood Rd
7. SR 86/15th St
8. Neckel Rd/A St

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Drawn by: VS
Checked by: SL

Project Name:
Holiday Inn Hotel – Traffic Impact Study

Horizon Year 2035 Traffic Volumes (with Project) – AM & PM Peak

Project No.:
9801–0414

Figure 6.2

6.3 Future Year 2035 with Project & Morningstar Project Conditions

The Morningstar project trips were obtained from the latest project study report dated in 2006, provided by the City of Imperial. The number of project trips of the Morningstar Project for 2035 was assumed to be identical as 2017 scenario.

Table 6.5 and **Table 6.6** summarize the LOS results for the cumulative project conditions, three intersections would operate at LOS F due to 2 way stop controlled that caused side street delays:

1. SR-86/Larsen Rd (PM) – since side street traffic volumes on Larsen Road are insignificant, no mitigation is recommended.

2. SR-86/Ralph Rd (AM/PM) – it is recommended to signalize the intersection due to heavy WBL movement of 192 veh/hr in AM. With signalization of the intersection, LOS will improve from F to LOS A.

3. SR-86/Neckel Rd (AM/PM) – it is recommended to signalize the intersection due to heavy EBL and WBL on side street at Neckel Rd. With signalization of the intersection, LOS will improve from F to LOS D in AM (53.5 seconds of delay) and LOS B in PM (7.7 seconds of delay)

Table 6.5 Future Year 2035 with Project + Cumulative Project Conditions - AM Traffic Volumes & LOS

2035 Horizon Year With Phase 1 + Phase 2 + Cumulative Projects - AM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	607	3	3	727	12	10	2	2	16	7	2	30.8	D
SR-86 and Ralph Road*	18	739	87	31	845	12	38	22	57	192	7	33	-	F
Neckel Rd and La Brucherie Rd*	5	25	13	2	8	8	7	187	5	13	164	2	11.0	B
SR-86 and Neckel Rd*	291	657	83	34	850	173	124	87	276	232	117	70	-	F
Neckel Rd and Canon Dr*	28	7	13	43	21	105	33	75	11	2	78	10	11.7	B
Neckel Rd and Dogwood Rd*	20	161	0	0	284	2	21	44	77	0	53	0	14.2	B
SR-86 and 15th St	4	758	46	12	915	20	26	36	28	138	16	54	8.7	A
Neckel Rd and "A" St	0	0	0	285	0	116	146	56	0	0	62	387	18.9	C
** Unsignalized*														

Table 6.6 Future Year 2035 with Project + Cumulative Project Conditions - PM Traffic Volumes & LOS

2035 Horizon Year With Phase 1 + Phase 2 + Cumulative Projects - PM Peak														
Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Delay	LOS
SR-86 and Larsen Road*	0	1040	13	3	1072	28	14	1	5	25	4	8	-	F
SR-86 and Ralph Road*	60	1010	125	21	1032	39	22	14	34	124	23	8	-	F
Neckel Rd and La Brucherie Rd*	5	102	31	37	75	14	18	117	3	37	145	0	10.6	B
SR-86 and Neckel Rd*	151	811	122	32	749	81	83	66	171	48	47	13	-	F
Neckel Rd and Canon Dr*	8	13	15	21	28	77	144	77	30	11	70	31	13.0	B
Neckel Rd and Dogwood Rd*	39	284	0	0	277	25	10	36	39	0	29	0	16.6	C
SR-86 and 15th St	22	970	149	28	887	29	38	54	21	162	31	90	13.7	B
Neckel Rd and "A" St	0	0	0	263	0	99	87	52	0	0	70	205	13.9	B
** Unsignalized*														

7. Level of Service Summary

Table 7.1 below shows results of all level of service analyses performed as part of this study. According to the analysis, three intersections have operated in LOS E or F:

1. <u>SR-86/Larsen Road:</u> The resulting LOS F in 2017 opening year with phase I, II and cumulative project was due to side street delays on Larsen Road. The combined volumes for WB and EB on Larsen Road was 47 mph, due to the minimal traffic volumes, signalization was not warranted at this intersection.
2. <u>SR-86/Ralph Road:</u> The resulting LOS F was due to higher WBL volumes that caused side street delays in both 2017 and 2035 scenario. Therefore, it is recommended to implement signal at this location to minimize side street delays.
3. <u>SR-86/Neckel Road:</u> The resulting LOS F was due to an overall increased of traffic volumes from generated project trips that caused side street delays in years 2012, 2017 and 2035 scenarios. Therefore, it is recommended to implement signal at this location to minimize side street delays in 2012 upon Phase I project completion.

Table 7.1 Level of Service Summary

Intersection	Existing 2010				Op Yr 2012 - No Project				Op Yr 2012 - Phase I				Op Yr 2017 - No Project				Op Yr 2017 - Phase I & II				Op Yr 2017 - Phase I & II & Cumulative				2035 - No Project				2035 - PhaseI & II				2035 - Phase I & II & Cumulative			
	AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR-86 and Larsen Road*	16.0	C	17.4	C	16.4	C	17.9	C	17.7	C	19.5	C	17.8	C	19.3	C	21.1	C	22.0	C	21.1	C	-	F	25.0	D	31.4	D	31.0	D	37.6	E	30.8	D	-	F
SR-86 and Ralph Road*	19.1	C	22.6	C	20.1	C	23.9	C	22.4	C	26.9	D	23.1	C	27.8	D	30.2	D	34.3	D	-	F	-	F	-	F	-	F	-	F	-	F	-	F	-	F
Neckel Rd and La Brucherie Rd*	9.4	A	9.3	A	9.4	A	9.3	A	9.9	A	9.8	A	9.4	A	9.4	A	10.6	B	10.3	B	10.6	B	13.9	B	9.7	A	9.7	A	11.0	B	10.7	B	11.0	B	10.6	B
SR-86 and Neckel Rd*	21.4	C	29.6	D	22.6	C	31.9	D	-	F	-	F	27.4	D	40.7	E	-	F	-	F	-	F	-	F	-	F	-	F	-	F	-	F	-	F	-	F
Neckel Rd and Canon Dr*	9.6	A	10.4	B	9.7	A	10.5	B	10.1	B	10.7	B	9.9	A	10.8	B	10.7	B	11.3	B	10.7	B	11.3	B	10.7	B	12.2	B	11.7	B	13.0	B	11.7	B	13.0	B
Neckel Rd and Dogwood Rd*	10.0	A	10.0	A	10.1	B	10.0	B	11.5	B	12.6	B	10.3	B	10.3	B	12.2	B	13.4	B	12.3	B	13.4	B	11.7	B	11.7	B	14.2	B	16.6	C	14.2	B	16.6	C
SR-86 and 15th St	6.8	A	8.8	A	6.8	A	9.0	A	6.6	A	9.1	A	7.5	A	9.8	A	7.4	A	9.9	A	7.4	A	9.9	A	8.5	A	13.5	B	8.7	A	13.7	B	8.7	A	13.7	B
Neckel Rd and "A" St	-	-	-	-	-	-	-	-	9.5	A	9.8	A	-	-	-	-	17.1	C	13.4	B	17.6	C	13.4	B	-	-	-	-	18.9	C	13.9	B	18.9	C	13.9	B
* Unsignalized																																				

8. Mitigation Measures

Table 8.1 below shows the LOS improvements with mitigation measures by implementing signals at the following intersections, while maintaining existing lane configurations at the intersections. With implementing signalization at the two intersections, LOS will improve significantly from LOS F to LOS B or better.

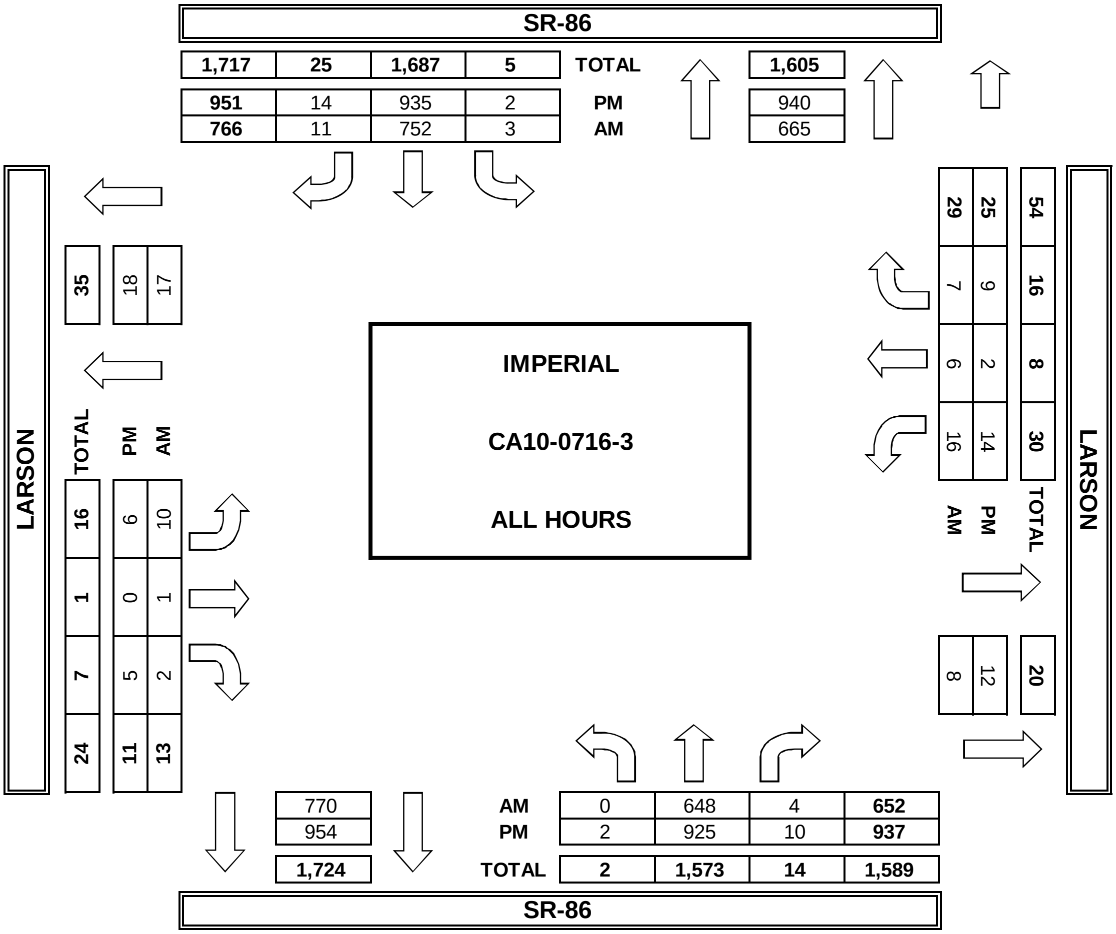
Table 8.1 Level of Service Summary - Mitigation Measures

Intersection	Op Yr 2012 - Phase I				Op Yr 2017 - No Project				Op Yr 2017 - Phase I & II				Op Yr 2017 - Phase I & II & Cumulative				2035 - No Project				2035 - Phase I & II				2035 - Phase I & II & Cumulative			
	AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM		AM		PM	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR-86 and Ralph Road*	-	-	-	-	-	-	-	-	-	-	-	-	6.3	A	5.0	A	7.0	A	4.8	A	5.7	A	3.9	A	7.4	A	6.6	A
SR-86 and Neckel Rd*	5.5	A	5.3	A	-	-	3.2	A	8.4	A	6.8	A	33.4	D	6.8	A	5.8	A	3.7	A	10.7	B	7.7	A	53.5	D	7.7	A

Appendix A: Counts

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS



TOTAL	1,717	25	1,687	5
PM	951	14	935	2
AM	766	11	752	3

TOTAL	1,605
PM	940
AM	665

TOTAL	16	1	7	24
PM	6	0	5	11
AM	10	1	2	13

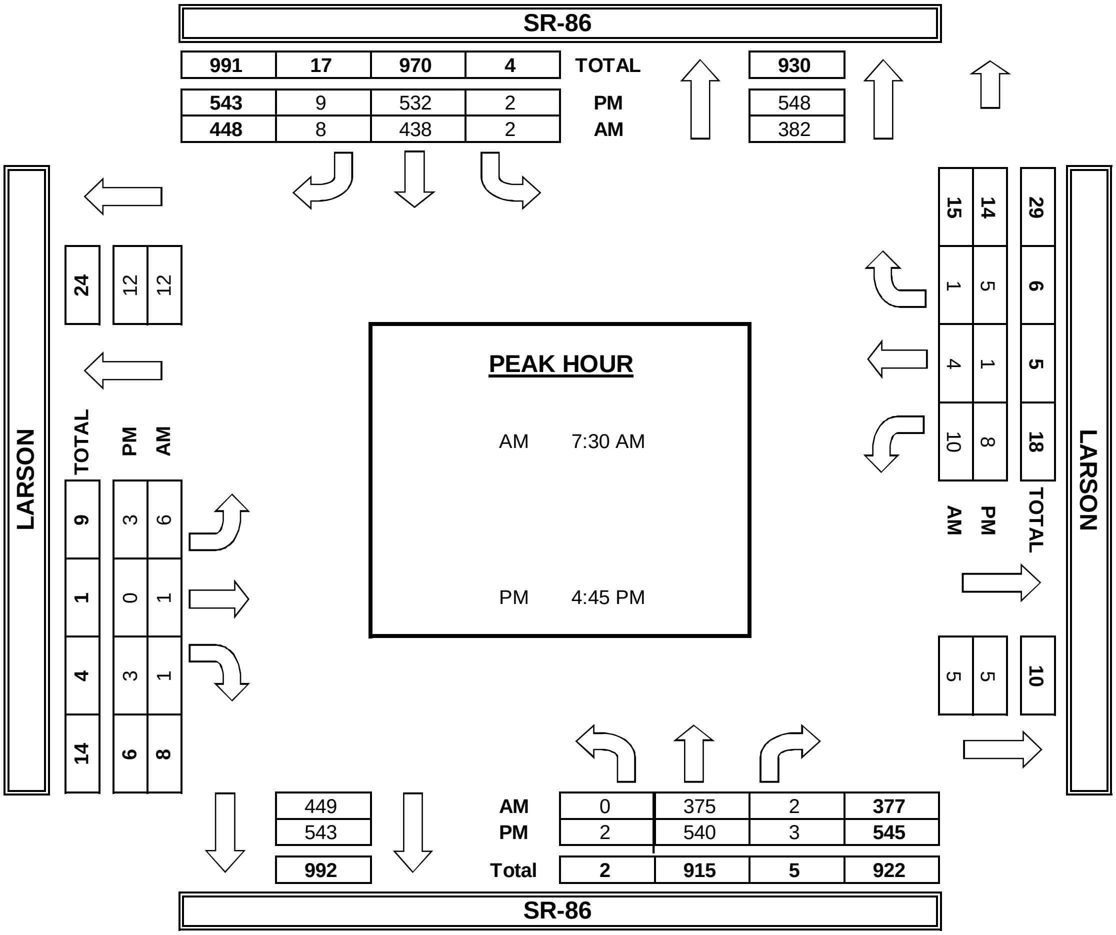
TOTAL	35
PM	18
AM	17

AM	29	7	6	16
PM	25	9	2	14
TOTAL	54	16	8	30

AM	8
PM	12
TOTAL	20

AM	0	648	4	652
PM	2	925	10	937
TOTAL	2	1,573	14	1,589

AM	770
PM	954
TOTAL	1,724



TOTAL	991	17	970	4
PM	543	9	532	2
AM	448	8	438	2

TOTAL	930
PM	548
AM	382

TOTAL	9	1	4	14
PM	3	0	3	6
AM	6	1	1	8

TOTAL	24
PM	12
AM	12

AM	15	1	4	10
PM	14	5	1	8
TOTAL	29	6	5	18

AM	5
PM	5
TOTAL	10

AM	0	375	2	377
PM	2	540	3	545
Total	2	915	5	922

AM	449
PM	543
Total	992

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE: 7/13/10 TUESDAY	LOCATION:	IMPERIAL	PROJECT #:	CA10-0716-3
	NORTH & SOUTH:	SR-86	LOCATION #:	1
	EAST & WEST:	LARSON	CONTROL:	2-WAY STOP (EW)

NOTES:

AM
PM
MD
OTHER
OTHER

▲
N
◄ W
E ►
S
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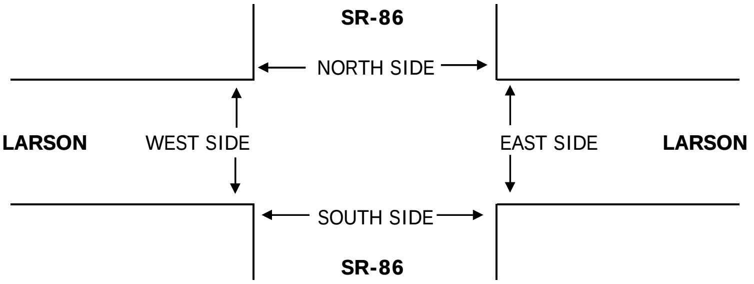
		NORTHBOUND SR-86			SOUTHBOUND SR-86			EASTBOUND LARSON			WESTBOUND LARSON			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
AM	7:00 AM	0	68	0	0	68	1	2	0	0	1	1	2	143
	7:15 AM	0	59	1	0	62	0	0	0	0	2	0	2	126
	7:30 AM	0	129	0	0	120	2	0	0	0	4	1	0	256
	7:45 AM	0	98	1	0	132	2	3	0	1	2	1	1	241
	8:00 AM	0	79	0	2	95	3	2	1	0	3	1	0	186
	8:15 AM	0	69	1	0	91	1	1	0	0	1	1	0	165
	8:30 AM	0	75	1	0	89	1	1	0	0	2	0	1	170
	8:45 AM	0	71	0	1	95	1	1	0	1	1	1	1	173
	VOLUMES	0	648	4	3	752	11	10	1	2	16	6	7	1,460
	APPROACH %	0%	99%	1%	0%	98%	1%	77%	8%	15%	55%	21%	24%	
	APP/DEPART	652	/	665	766	/	770	13	/	8	29	/	17	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	375	2	2	438	8	6	1	1	10	4	1	848
	APPROACH %	0%	99%	1%	0%	98%	2%	75%	13%	13%	67%	27%	7%	
	PEAK HR FACTOR		0.731			0.836			0.500			0.750		0.828
	APP/DEPART	377	/	382	448	/	449	8	/	5	15	/	12	0
PM	4:00 PM	0	73	2	0	98	1	1	0	0	2	1	1	179
	4:15 PM	0	84	3	0	103	2	1	0	1	2	0	2	198
	4:30 PM	0	106	2	0	110	1	1	0	1	2	0	1	224
	4:45 PM	0	110	1	1	108	1	1	0	2	4	0	3	231
	5:00 PM	2	143	0	1	132	6	1	0	0	2	0	1	288
	5:15 PM	0	166	2	0	153	0	1	0	0	2	1	0	325
	5:30 PM	0	121	0	0	139	2	0	0	1	0	0	1	264
	5:45 PM	0	122	0	0	92	1	0	0	0	0	0	0	215
	VOLUMES	2	925	10	2	935	14	6	0	5	14	2	9	1,924
	APPROACH %	0%	99%	1%	0%	98%	1%	55%	0%	45%	56%	8%	36%	
	APP/DEPART	937	/	940	951	/	954	11	/	12	25	/	18	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	2	540	3	2	532	9	3	0	3	8	1	5	1,108
	APPROACH %	0%	99%	1%	0%	98%	2%	50%	0%	50%	57%	7%	36%	
	PEAK HR FACTOR		0.811			0.887			0.500			0.500		0.852
	APP/DEPART	545	/	548	543	/	543	6	/	5	14	/	12	0

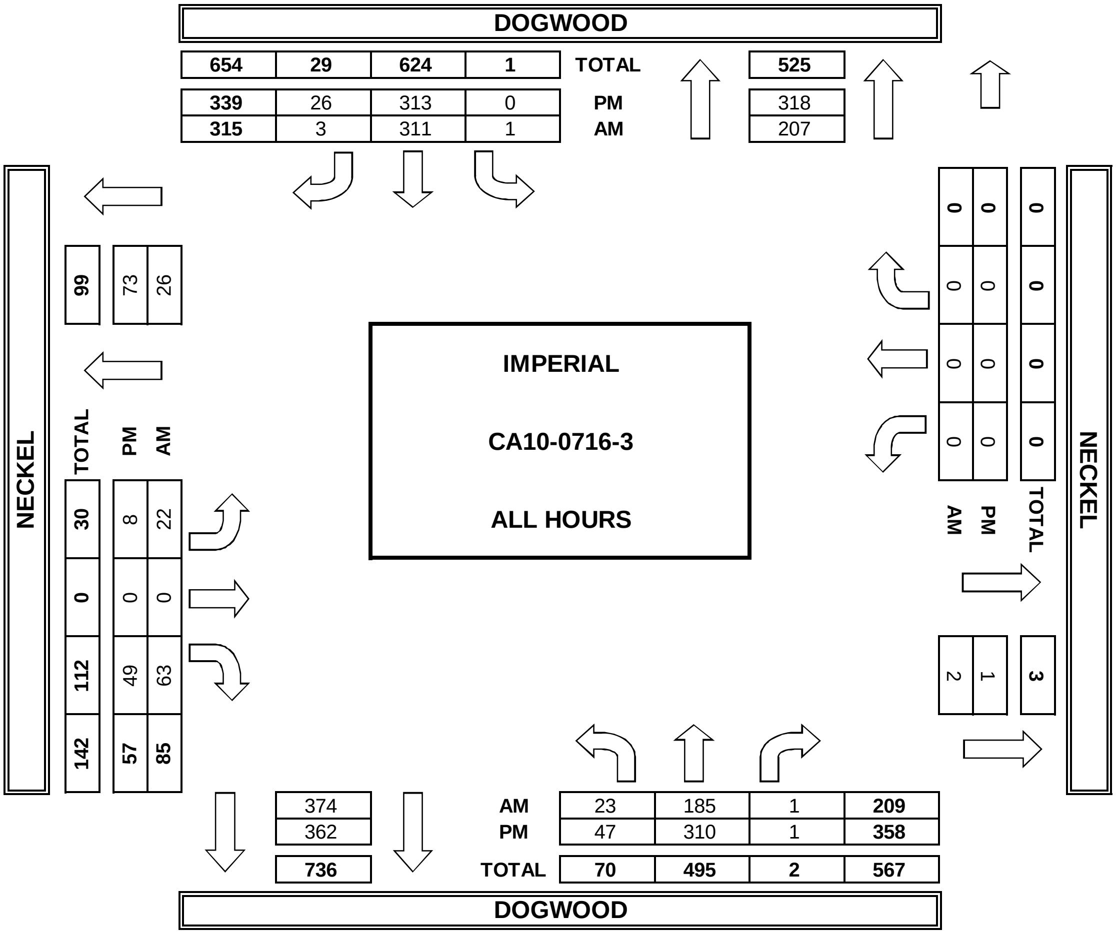
U-TURNS					
	NB	SB	EB	WB	TTL
	X	X	X	X	
7:00 AM					0
7:15 AM					0
7:30 AM					0
7:45 AM					0
8:00 AM					0
8:15 AM					0
8:30 AM					0
8:45 AM					0
VOLUMES	0	0	0	0	0
4:00 PM					0
4:15 PM					0
4:30 PM					0
4:45 PM					0
5:00 PM					0
5:15 PM					0
5:30 PM					0
5:45 PM					0
VOLUMES	0	0	0	0	0



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS



IMPERIAL

CA10-0716-3

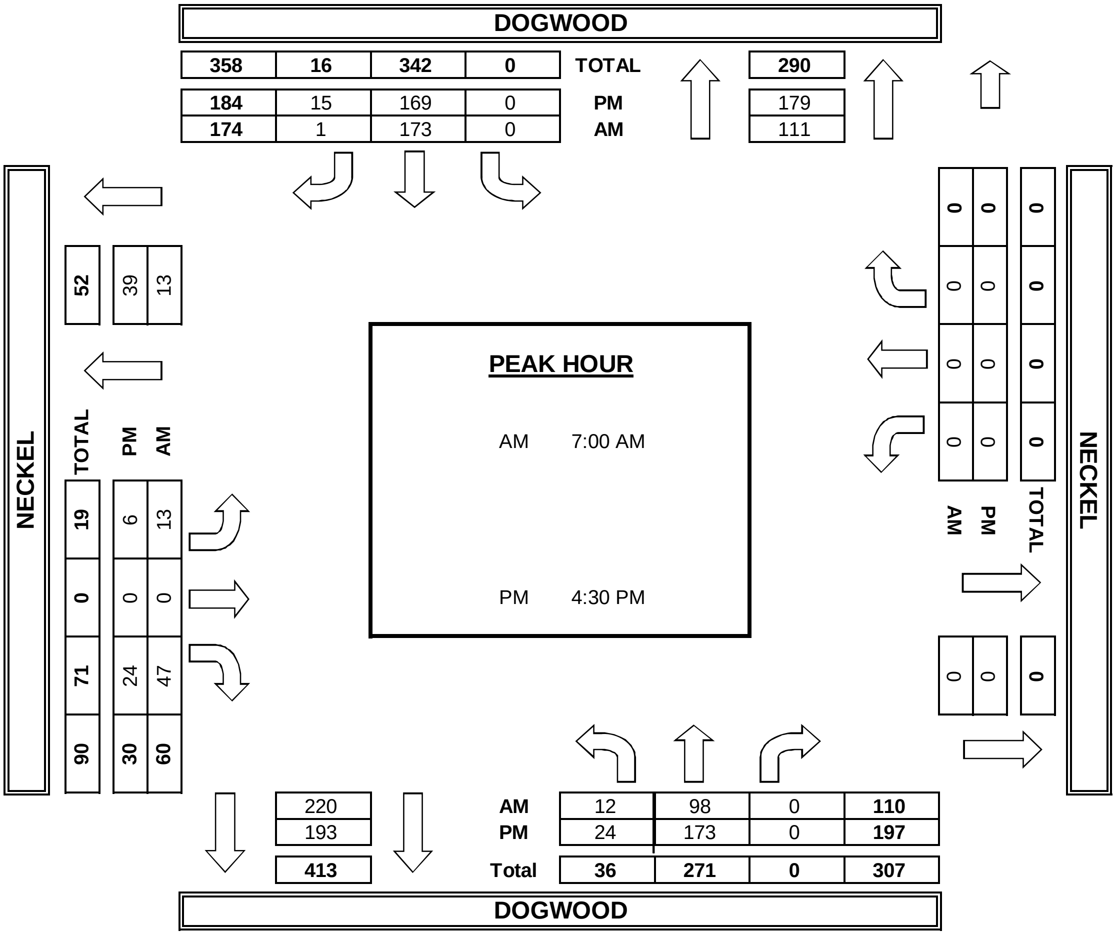
ALL HOURS

654	**29**	**624**	**1**	**TOTAL**	**525**
339	26	313	0	**PM**	318
315	3	311	1	**AM**	207

TOTAL	**PM**	**AM**
99	73	26
30	8	22
0	0	0
112	49	63
142	**57**	**85**

AM	**PM**	**TOTAL**
0	**0**	**0**
0	0	**0**
0	0	**0**
0	0	**0**
2	1	**3**

374	**AM**	23	185	1	**209**
362	**PM**	47	310	1	**358**
736	**TOTAL**	**70**	**495**	**2**	**567**



PEAK HOUR

AM 7:00 AM

PM 4:30 PM

358	**16**	**342**	**0**	**TOTAL**	**290**
184	15	169	0	**PM**	179
174	1	173	0	**AM**	111

TOTAL	**PM**	**AM**
52	39	13
19	6	13
0	0	0
71	24	47
90	**30**	**60**

AM	**PM**	**TOTAL**
0	**0**	**0**
0	0	**0**
0	0	**0**
0	0	**0**
0	0	**0**

220	**AM**	12	98	0	**110**
193	**PM**	24	173	0	**197**
413	**Total**	**36**	**271**	**0**	**307**

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE: 7/13/10 TUESDAY	LOCATION:	IMPERIAL	PROJECT #:	CA10-0716-3
	NORTH & SOUTH:	DOGWOOD	LOCATION #:	2
	EAST & WEST:	NECKEL	CONTROL:	2-WAY STOP (EW)

NOTES:

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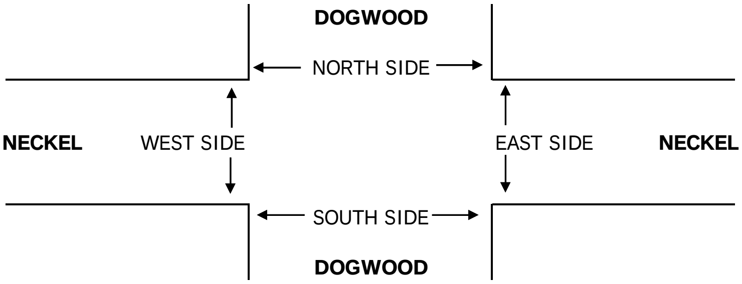
		NORTHBOUND DOGWOOD			SOUTHBOUND DOGWOOD			EASTBOUND NECKEL			WESTBOUND NECKEL			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
AM	7:00 AM	2	26	0	0	36	0	1	0	12	0	0	0	77
	7:15 AM	2	17	0	0	42	0	2	0	13	0	0	0	76
	7:30 AM	4	30	0	0	57	1	8	0	11	0	0	0	111
	7:45 AM	4	25	0	0	38	0	2	0	11	0	0	0	80
	8:00 AM	2	26	0	1	32	1	2	0	3	0	0	0	67
	8:15 AM	1	17	1	0	30	1	2	0	4	0	0	0	56
	8:30 AM	5	25	0	0	45	0	2	0	5	0	0	0	82
	8:45 AM	3	19	0	0	31	0	3	0	4	0	0	0	60
	VOLUMES	23	185	1	1	311	3	22	0	63	0	0	0	609
	APPROACH %	11%	89%	0%	0%	99%	1%	26%	0%	74%	0%	0%	0%	
	APP/DEPART	209	/	207	315	/	374	85	/	2	0	/	26	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	12	98	0	0	173	1	13	0	47	0	0	0	344
	APPROACH %	11%	89%	0%	0%	99%	1%	22%	0%	78%	0%	0%	0%	
	PEAK HR FACTOR		0.809			0.750			0.789			0.000		0.775
	APP/DEPART	110	/	111	174	/	220	60	/	0	0	/	13	0
PM	4:00 PM	6	40	0	0	37	3	1	0	5	0	0	0	92
	4:15 PM	3	34	0	0	40	5	0	0	3	0	0	0	85
	4:30 PM	5	36	0	0	60	1	0	0	4	0	0	0	106
	4:45 PM	6	28	0	0	33	3	2	0	5	0	0	0	77
	5:00 PM	5	51	0	0	37	7	2	0	8	0	0	0	110
	5:15 PM	8	58	0	0	39	4	2	0	7	0	0	0	118
	5:30 PM	8	28	1	0	39	0	0	0	9	0	0	0	85
	5:45 PM	6	35	0	0	28	3	1	0	8	0	0	0	81
	VOLUMES	47	310	1	0	313	26	8	0	49	0	0	0	754
	APPROACH %	13%	87%	0%	0%	92%	8%	14%	0%	86%	0%	0%	0%	
	APP/DEPART	358	/	318	339	/	362	57	/	1	0	/	73	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	24	173	0	0	169	15	6	0	24	0	0	0	411
	APPROACH %	12%	88%	0%	0%	92%	8%	20%	0%	80%	0%	0%	0%	
	PEAK HR FACTOR		0.746			0.754			0.750			0.000		0.871
	APP/DEPART	197	/	179	184	/	193	30	/	0	0	/	39	0

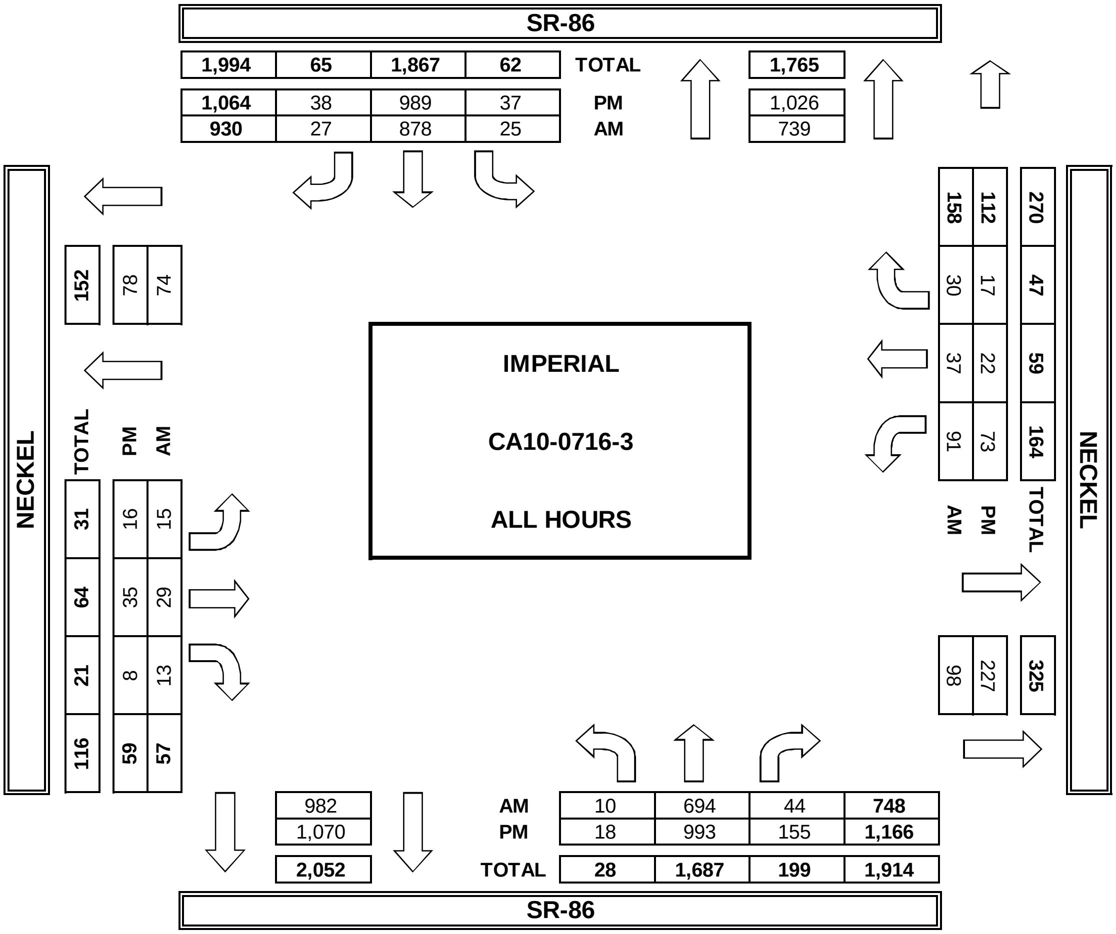
U-TURNS				
NB	SB	EB	WB	TTL
X	X	X	X	
				0
				0
				0
				0
				0
				0
				0
				0
0	0	0	0	0
				0
				0
				0
				0
				0
				0
				0
				0
0	0	0	0	0

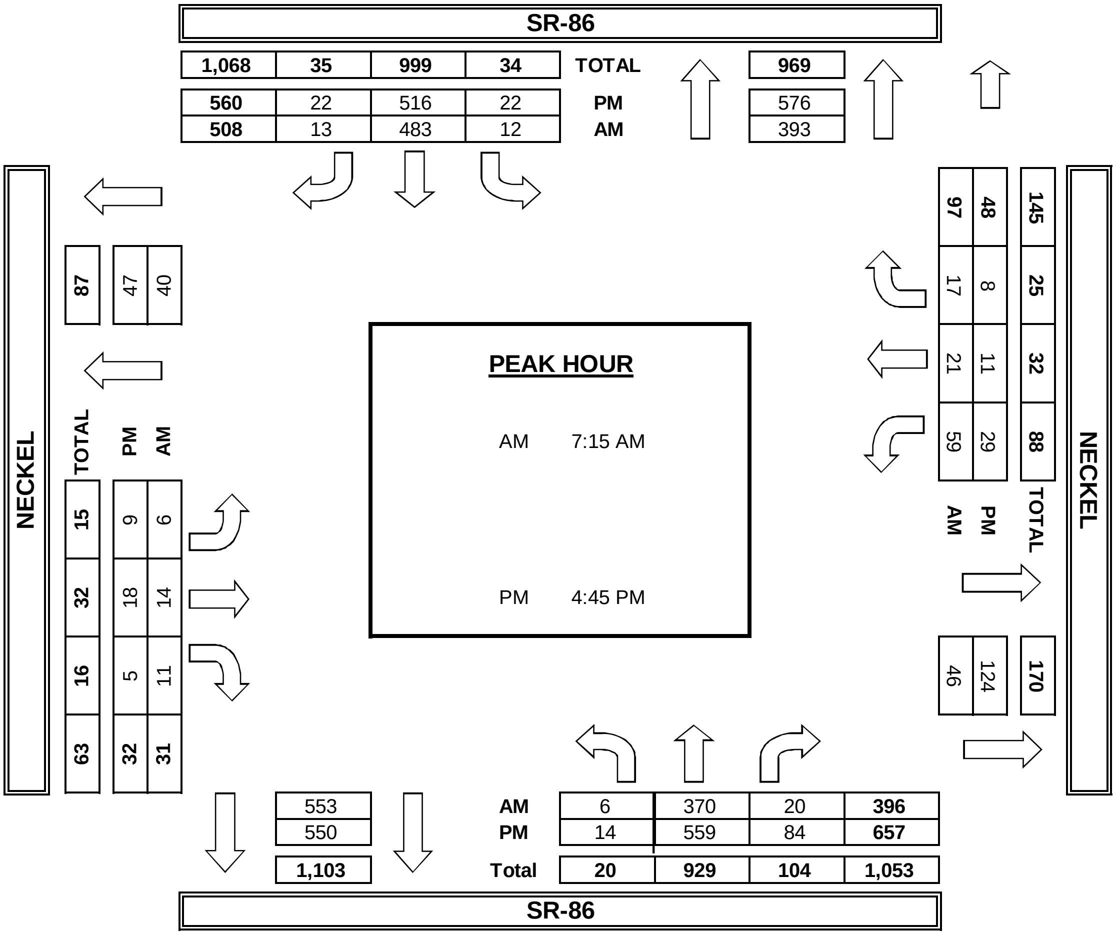


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE: 7/13/10 TUESDAY	LOCATION:	IMPERIAL	PROJECT #:	CA10-0716-3
	NORTH & SOUTH:	SR-86	LOCATION #:	3
	EAST & WEST:	NECKEL	CONTROL:	2-WAT STOP (EW)

NOTES:

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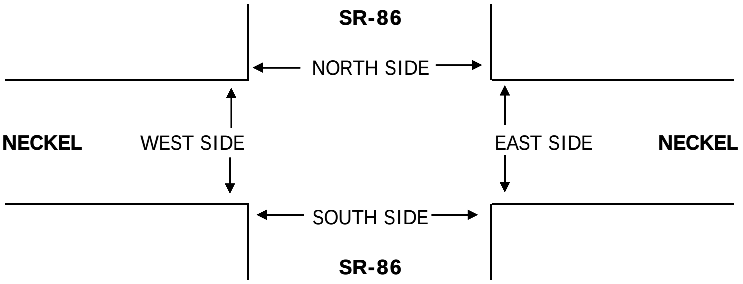
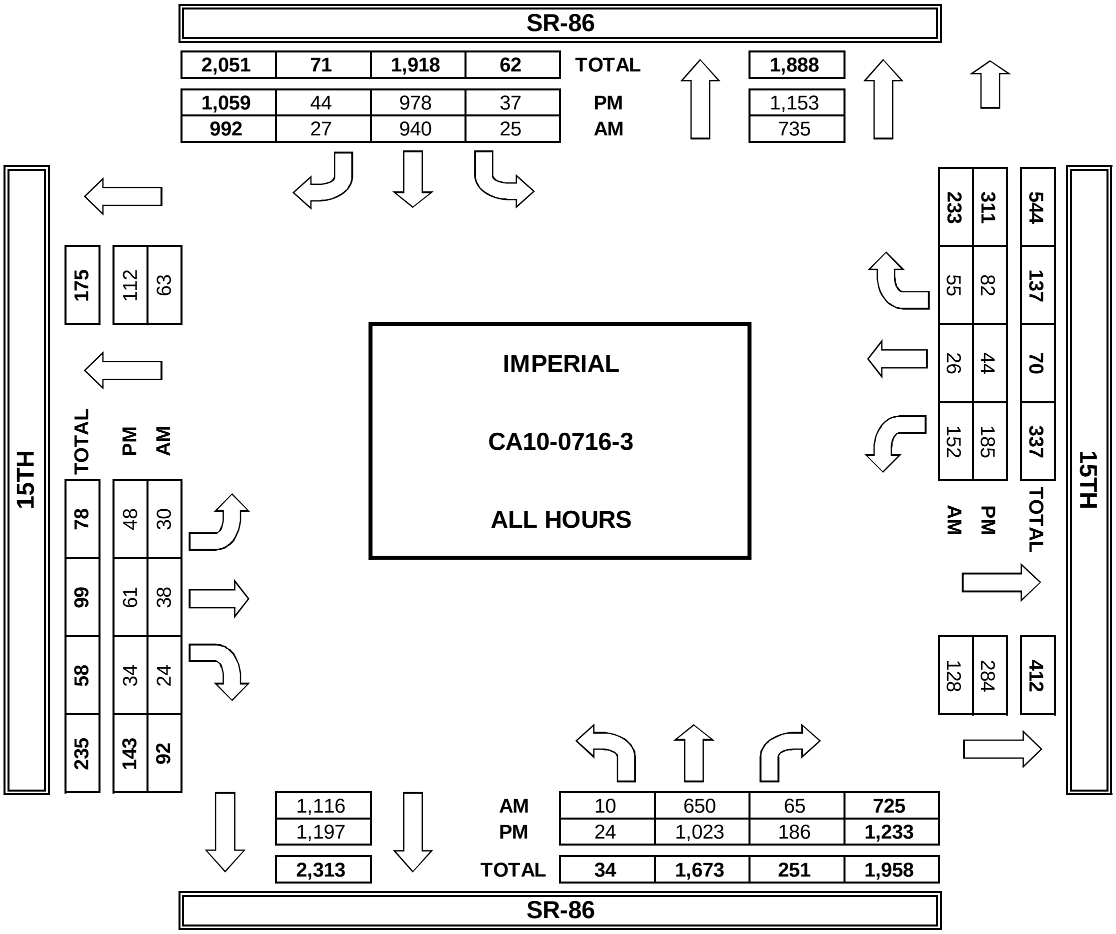
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				U-TURNS				
		SR-86			SR-86			NECKEL			NECKEL								
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	2	0	1	2	0	0	1	0	0	1	0		X	X	X	X	
AM	7:00 AM	1	73	6	1	70	4	6	3	0	9	4	2	179					0
	7:15 AM	0	89	6	3	118	3	0	2	4	16	7	6	254					0
	7:30 AM	1	119	2	3	158	4	1	5	2	23	7	6	331					0
	7:45 AM	3	90	8	4	118	3	3	4	1	10	5	4	253					0
	8:00 AM	2	72	4	2	89	3	2	3	4	10	2	1	194					0
	8:15 AM	1	84	3	5	108	4	1	5	1	4	4	3	223					0
	8:30 AM	0	87	10	3	115	4	1	4	1	7	5	1	238					0
	8:45 AM	2	80	5	4	102	2	1	3	0	12	3	7	221					0
	VOLUMES	10	694	44	25	878	27	15	29	13	91	37	30	1,893	0	0	0	0	0
	APPROACH %	1%	93%	6%	3%	94%	3%	26%	51%	23%	58%	23%	19%						
	APP/DEPART	748	/	739	930	/	982	57	/	98	158	/	74	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	6	370	20	12	483	13	6	14	11	59	21	17	1,032					
	APPROACH %	2%	93%	5%	2%	95%	3%	19%	45%	35%	61%	22%	18%						
	PEAK HR FACTOR		0.811			0.770			0.861			0.674		0.779					
	APP/DEPART	396	/	393	508	/	553	31	/	46	97	/	40	0					
PM	4:00 PM	1	104	18	5	128	1	3	3	1	10	0	2	276					0
	4:15 PM	1	108	20	4	121	5	0	4	0	9	3	2	277					0
	4:30 PM	2	107	18	3	135	8	2	7	0	12	2	4	300					0
	4:45 PM	1	109	16	8	117	9	5	5	2	10	2	1	285					0
	5:00 PM	3	177	28	3	126	8	2	3	0	5	2	1	358					0
	5:15 PM	6	140	15	7	149	3	1	4	2	9	3	2	341					0
	5:30 PM	4	133	25	4	124	2	1	6	1	5	4	4	313					0
	5:45 PM	0	115	15	3	89	2	2	3	2	13	6	1	251					0
	VOLUMES	18	993	155	37	989	38	16	35	8	73	22	17	2,401	0	0	0	0	0
	APPROACH %	2%	85%	13%	3%	93%	4%	27%	59%	14%	65%	20%	15%						
	APP/DEPART	1,166	/	1,026	1,064	/	1,070	59	/	227	112	/	78	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	14	559	84	22	516	22	9	18	5	29	11	8	1,297					
	APPROACH %	2%	85%	13%	4%	92%	4%	28%	56%	16%	60%	23%	17%						
	PEAK HR FACTOR		0.790			0.881			0.667			0.857		0.906					
	APP/DEPART	657	/	576	560	/	550	32	/	124	48	/	47	0					

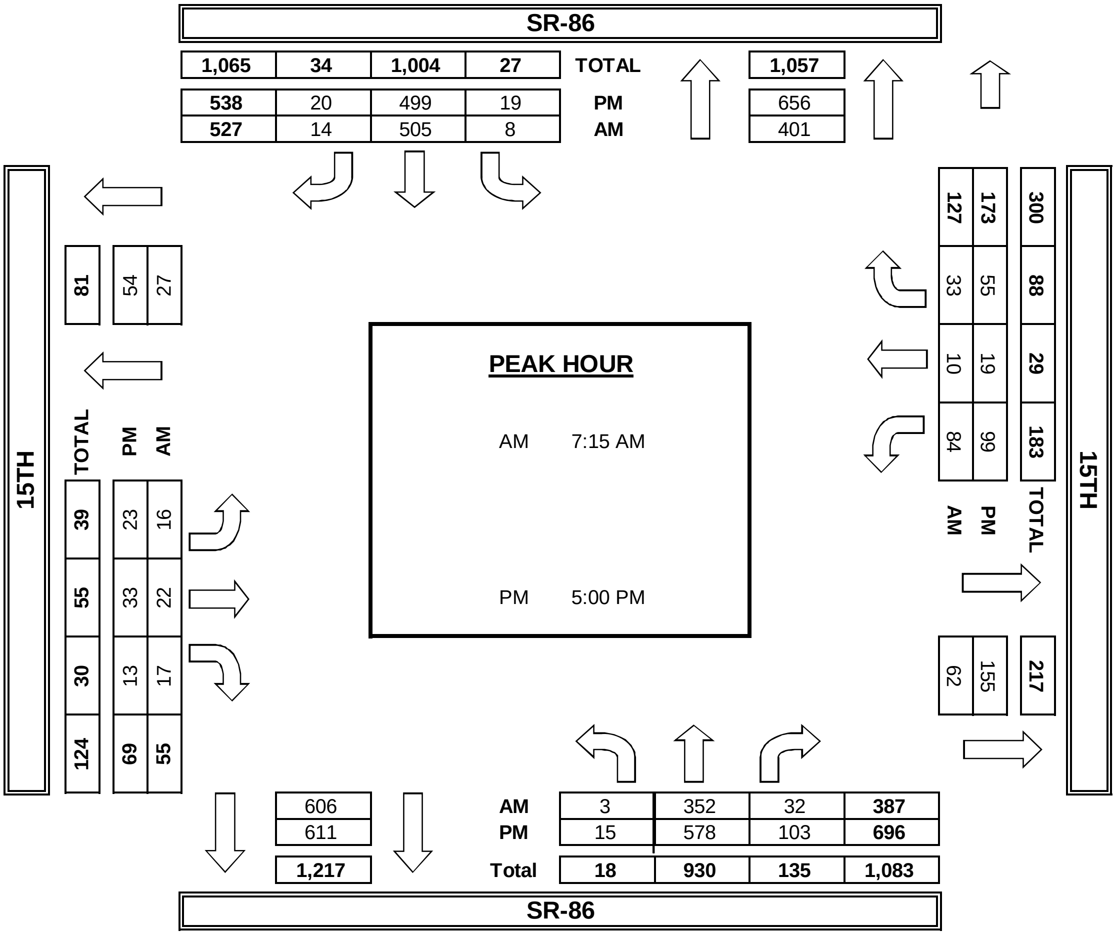


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	IMPERIAL	PROJECT #:	CA10-0716-3
7/13/10	NORTH & SOUTH:	SR-86	LOCATION #:	4
TUESDAY	EAST & WEST:	15TH	CONTROL:	SIGNAL

NOTES:

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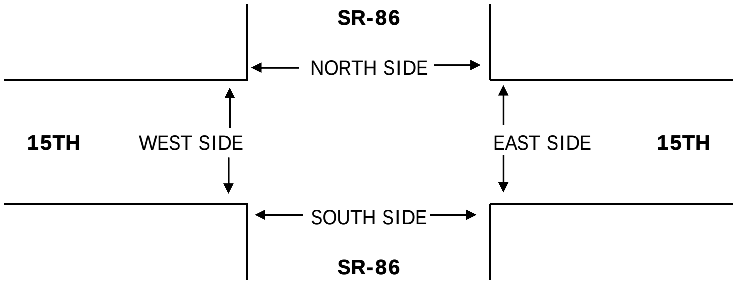
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				U-TURNS				
			SR-86			SR-86			15TH			15TH							
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	2	1	1	2	1	1	1	0	1	1	1		X	X	X	X	
AM	7:00 AM	1	64	9	4	78	2	3	3	1	19	2	5	191					0
	7:15 AM	0	80	6	4	120	3	3	6	3	14	4	7	250					0
	7:30 AM	1	107	8	1	162	3	6	6	6	27	1	12	340					0
	7:45 AM	1	91	11	2	129	3	6	5	6	23	3	8	288					0
	8:00 AM	1	74	7	1	94	5	1	5	2	20	2	6	218					0
	8:15 AM	2	76	7	6	115	4	2	7	0	15	3	5	242					0
	8:30 AM	3	80	9	4	108	3	7	1	2	17	6	4	244					0
	8:45 AM	1	78	8	3	134	4	2	5	4	17	5	8	269					0
	VOLUMES	10	650	65	25	940	27	30	38	24	152	26	55	2,042	0	0	0	0	0
	APPROACH %	1%	90%	9%	3%	95%	3%	33%	41%	26%	65%	11%	24%						
	APP/DEPART	725	/	735	992	/	1,116	92	/	128	233	/	63	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	3	352	32	8	505	14	16	22	17	84	10	33	1,096					
	APPROACH %	1%	91%	8%	2%	96%	3%	29%	40%	31%	66%	8%	26%						
	PEAK HR FACTOR		0.834			0.794			0.764			0.794		0.806					
	APP/DEPART	387	/	401	527	/	606	55	/	62	127	/	27	0					
PM	4:00 PM	5	112	20	3	123	9	4	11	0	18	5	7	317					0
	4:15 PM	0	103	19	7	119	3	10	9	6	22	9	8	315					0
	4:30 PM	1	123	23	2	130	8	6	3	6	28	5	3	338					0
	4:45 PM	3	107	21	6	107	4	5	5	9	18	6	9	300					0
	5:00 PM	3	180	26	6	141	4	10	6	2	14	7	13	412					0
	5:15 PM	4	143	30	3	133	9	7	9	3	23	3	15	382					0
	5:30 PM	2	125	26	4	126	4	3	8	4	33	7	14	356					0
	5:45 PM	6	130	21	6	99	3	3	10	4	29	2	13	326					0
	VOLUMES	24	1,023	186	37	978	44	48	61	34	185	44	82	2,746	0	0	0	0	0
	APPROACH %	2%	83%	15%	3%	92%	4%	34%	43%	24%	59%	14%	26%						
	APP/DEPART	1,233	/	1,153	1,059	/	1,197	143	/	284	311	/	112	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	15	578	103	19	499	20	23	33	13	99	19	55	1,476					
	APPROACH %	2%	83%	15%	4%	93%	4%	33%	48%	19%	57%	11%	32%						
	PEAK HR FACTOR		0.833			0.891			0.908			0.801		0.896					
	APP/DEPART	696	/	656	538	/	611	69	/	155	173	/	54	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS

SR-86

1,722	**0**	**1,689**	**33**	**TOTAL**
940	0	938	2	**PM**
782	0	751	31	**AM**

1,597
926
671

RALPH

TOTAL	**0**	**0**	**0**	**0**
PM	0	0	0	**0**
AM	0	0	0	**0**

TOTAL	**0**
PM	0
AM	0

IMPERIAL

CA10-0716-3

ALL HOURS

RALPH

AM	**194**	25	0	169
PM	**126**	9	0	117
TOTAL	**320**	**34**	**0**	**286**

AM	106
PM	118
TOTAL	**224**

920	**AM**	0	646	75	**721**
1,055	**PM**	0	917	116	**1,033**
1,975	**TOTAL**	**0**	**1,563**	**191**	**1,754**

SR-86

SR-86

974	**0**	**955**	**19**	**TOTAL**
529	0	527	2	**PM**
445	0	428	17	**AM**

889
520
369

RALPH

TOTAL	**0**	**0**	**0**	**0**
PM	0	0	0	**0**
AM	0	0	0	**0**

TOTAL	**0**
PM	0
AM	0

PEAK HOUR

AM 7:30 AM

PM 4:45 PM

RALPH

AM	**104**	11	0	93
PM	**59**	5	0	54
TOTAL	**163**	**16**	**0**	**147**

AM	51
PM	64
TOTAL	**115**

521	**AM**	0	358	34	**392**
581	**PM**	0	515	62	**577**
1,102	**Total**	**0**	**873**	**96**	**969**

SR-86

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE: 7/13/10 TUESDAY	LOCATION:	IMPERIAL		PROJECT #:	CA10-0716-3
	NORTH & SOUTH:	SR-86		LOCATION #:	5
	EAST & WEST:	RALPH		CONTROL:	1-WAY STOP (WB)

NOTES:

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OTHER

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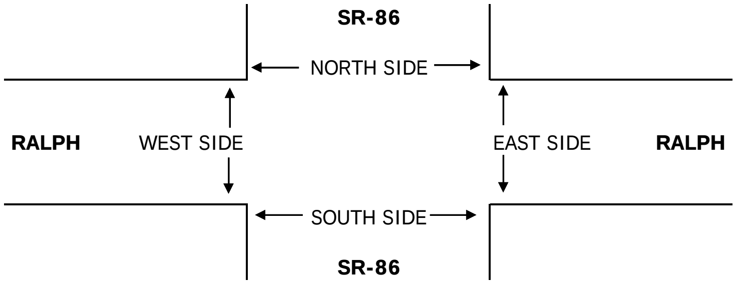
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
		SR-86			SR-86			RALPH			RALPH			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	0	2	0	1	2	0	0	1	0	0	1	0	
AM	7:00 AM	0	66	9	3	66	0	0	0	0	18	0	3	165
	7:15 AM	0	70	8	5	77	0	0	0	0	29	0	4	193
	7:30 AM	0	121	11	4	109	0	0	0	0	28	0	2	275
	7:45 AM	0	95	8	2	126	0	0	0	0	26	0	1	258
	8:00 AM	0	77	5	6	90	0	0	0	0	17	0	2	197
	8:15 AM	0	65	10	5	103	0	0	0	0	22	0	6	211
	8:30 AM	0	72	11	4	88	0	0	0	0	16	0	5	196
	8:45 AM	0	80	13	2	92	0	0	0	0	13	0	2	202
	VOLUMES	0	646	75	31	751	0	0	0	0	169	0	25	1,697
	APPROACH %	0%	90%	10%	4%	96%	0%	0%	0%	0%	87%	0%	13%	
	APP/DEPART	721	/	671	782	/	920	0	/	106	194	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	358	34	17	428	0	0	0	0	93	0	11	941
	APPROACH %	0%	91%	9%	4%	96%	0%	0%	0%	0%	89%	0%	11%	
	PEAK HR FACTOR		0.742			0.869			0.000			0.867		0.855
	APP/DEPART	392	/	369	445	/	521	0	/	51	104	/	0	0
PM	4:00 PM	0	80	10	0	90	0	0	0	0	18	0	1	199
	4:15 PM	0	92	12	0	113	0	0	0	0	13	0	2	232
	4:30 PM	0	121	19	0	105	0	0	0	0	20	0	1	266
	4:45 PM	0	105	16	1	121	0	0	0	0	15	0	1	259
	5:00 PM	0	148	17	1	133	0	0	0	0	10	0	3	312
	5:15 PM	0	144	14	0	141	0	0	0	0	18	0	1	318
	5:30 PM	0	118	15	0	132	0	0	0	0	11	0	0	276
	5:45 PM	0	109	13	0	103	0	0	0	0	12	0	0	237
	VOLUMES	0	917	116	2	938	0	0	0	0	117	0	9	2,099
	APPROACH %	0%	89%	11%	0%	100%	0%	0%	0%	0%	93%	0%	7%	
	APP/DEPART	1,033	/	926	940	/	1,055	0	/	118	126	/	0	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	515	62	2	527	0	0	0	0	54	0	5	1,165
	APPROACH %	0%	89%	11%	0%	100%	0%	0%	0%	0%	92%	0%	8%	
	PEAK HR FACTOR		0.874			0.938			0.000			0.776		0.916
	APP/DEPART	577	/	520	529	/	581	0	/	64	59	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
X	X	X	X	
				0
				0
				0
				0
				0
				0
				0
				0
0	0	0	0	0
				0
				0
				0
				0
				0
				0
				0
				0
0	0	0	0	0



PEDESTRIAN CROSSINGS

		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	7:00 AM					0
	7:15 AM					0
	7:30 AM					0
	7:45 AM					0
	8:00 AM					0
	8:15 AM					0
	8:30 AM					0
	8:45 AM					0
	TOTAL	0	0	0	0	0
PM	4:00 PM					0
	4:15 PM					0
	4:30 PM					0
	4:45 PM					0
	5:00 PM					0
	5:15 PM					0
	5:30 PM					0
	5:45 PM					0
	TOTAL	0	0	0	0	0

PEDESTRIAN ACTIVATIONS

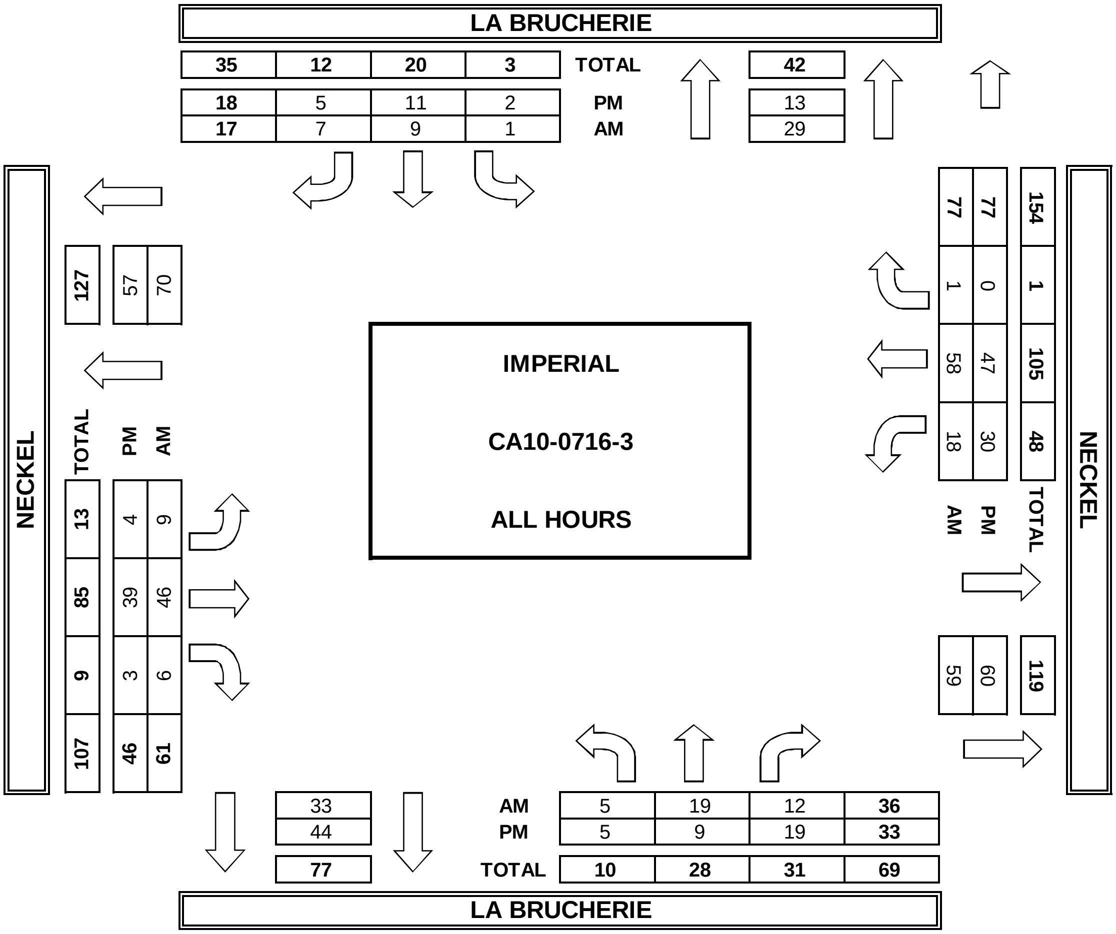
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	7:00 AM					0
	7:15 AM					0
	7:30 AM					0
	7:45 AM					0
	8:00 AM					0
	8:15 AM					0
	8:30 AM					0
	8:45 AM					0
	TOTAL	0	0	0	0	0
PM	4:00 PM					0
	4:15 PM					0
	4:30 PM					0
	4:45 PM					0
	5:00 PM					0
	5:15 PM					0
	5:30 PM					0
	5:45 PM					0
	TOTAL	0	0	0	0	0

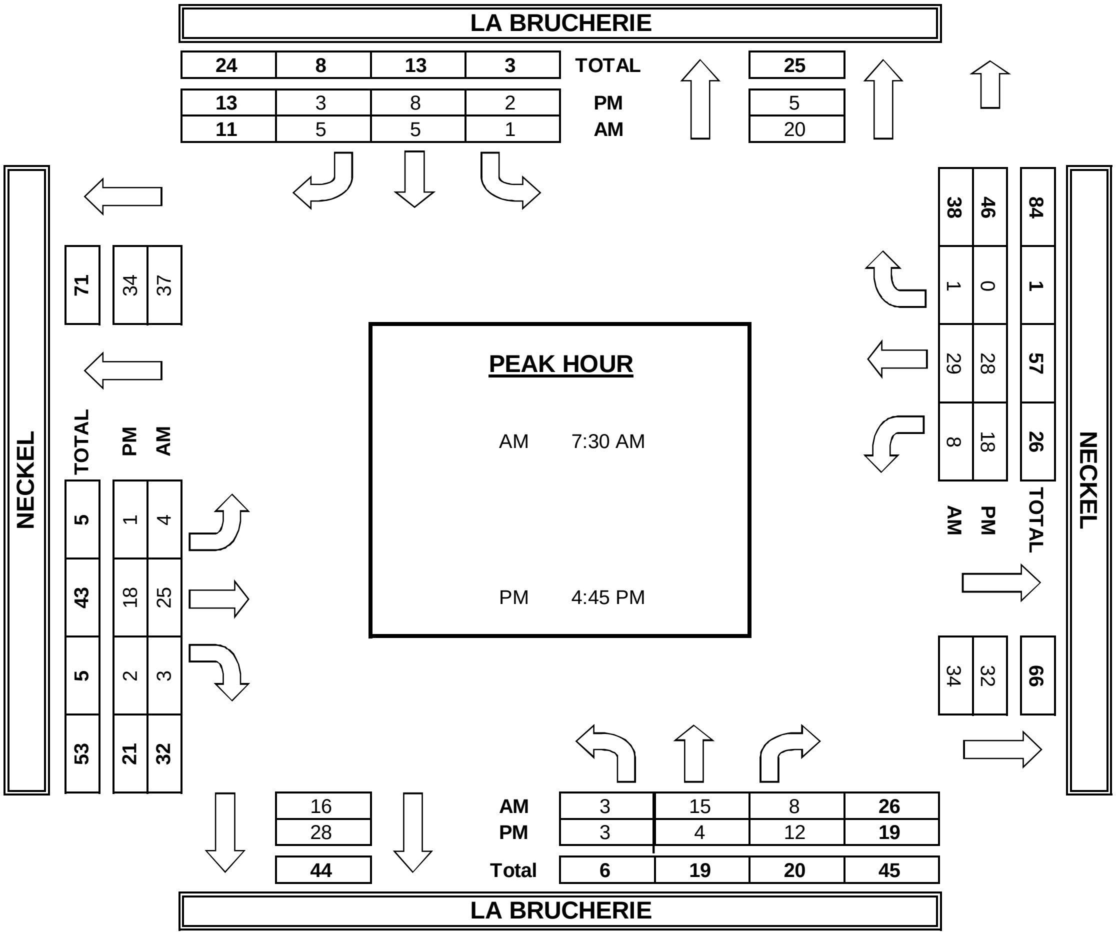
BICYCLE CROSSINGS

		NS	SS	ES	WS	TOTAL
AM	7:00 AM					0
	7:15 AM					0
	7:30 AM					0
	7:45 AM					0
	8:00 AM					0
	8:15 AM					0
	8:30 AM					0
	8:45 AM					0
	TOTAL	0	0	0	0	0
PM	4:00 PM					0
	4:15 PM					0
	4:30 PM					0
	4:45 PM					0
	5:00 PM					0
	5:15 PM					0
	5:30 PM					0
	5:45 PM					0
	TOTAL	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:				
7/13/10	LOCATION:	IMPERIAL	PROJECT #:	CA10-0716-3
TUESDAY	NORTH & SOUTH:	LA BRUCHERIE	LOCATION #:	6
	EAST & WEST:	NECKEL	CONTROL:	2-WAY STOP (EW)

NOTES:

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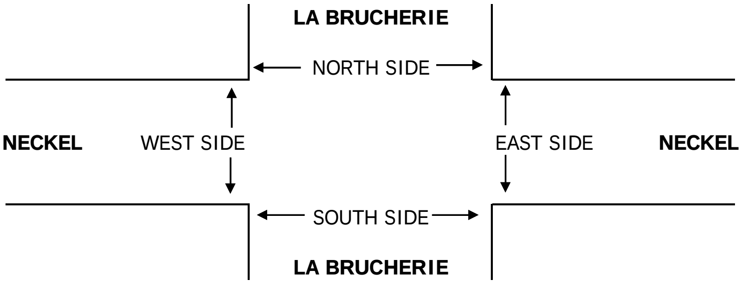
		NORTHBOUND LA BRUCHERIE			SOUTHBOUND LA BRUCHERIE			EASTBOUND NECKEL			WESTBOUND NECKEL				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	0	1	0	0	1	0	0	1	0	0	1	0		X	X	X	X	
AM	7:00 AM	0	1	2	0	1	0	2	8	2	3	6	0	25					0
	7:15 AM	1	2	1	0	1	0	2	6	1	1	9	0	24					0
	7:30 AM	1	3	4	0	0	1	3	3	1	2	8	0	26					0
	7:45 AM	1	1	1	0	1	2	0	6	1	1	10	1	25					0
	8:00 AM	0	4	1	1	2	0	1	6	0	0	3	0	18					0
	8:15 AM	1	7	2	0	2	2	0	10	1	5	8	0	38					0
	8:30 AM	1	1	0	0	1	2	0	5	0	3	7	0	20					0
	8:45 AM	0	0	1	0	1	0	1	2	0	3	7	0	15					0
	VOLUMES	5	19	12	1	9	7	9	46	6	18	58	1	191	0	0	0	0	0
	APPROACH %	14%	53%	33%	6%	53%	41%	15%	75%	10%	23%	75%	1%						
	APP/DEPART	36	/	29	17	/	33	61	/	59	77	/	70	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	3	15	8	1	5	5	4	25	3	8	29	1	107					
	APPROACH %	12%	58%	31%	9%	45%	45%	13%	78%	9%	21%	76%	3%						
	PEAK HR FACTOR		0.650			0.688			0.727			0.731		0.704					
	APP/DEPART	26	/	20	11	/	16	32	/	34	38	/	37	0					
PM	4:00 PM	1	0	1	0	1	1	0	7	0	1	2	0	14					0
	4:15 PM	1	0	0	0	0	0	1	3	1	7	5	0	18					0
	4:30 PM	0	1	2	0	1	0	2	6	0	1	7	0	20					0
	4:45 PM	1	1	4	2	2	0	0	5	1	4	9	0	29					0
	5:00 PM	1	2	5	0	5	2	0	3	0	5	5	0	28					0
	5:15 PM	1	1	2	0	0	0	1	5	0	3	9	0	22					0
	5:30 PM	0	0	1	0	1	1	0	5	1	6	5	0	20					0
	5:45 PM	0	4	4	0	1	1	0	5	0	3	5	0	23					0
	VOLUMES	5	9	19	2	11	5	4	39	3	30	47	0	174	0	0	0	0	0
	APPROACH %	15%	27%	58%	11%	61%	28%	9%	85%	7%	39%	61%	0%						
	APP/DEPART	33	/	13	18	/	44	46	/	60	77	/	57	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	3	4	12	2	8	3	1	18	2	18	28	0	99					
	APPROACH %	16%	21%	63%	15%	62%	23%	5%	86%	10%	39%	61%	0%						
	PEAK HR FACTOR		0.594			0.464			0.656			0.885		0.853					
	APP/DEPART	19	/	5	13	/	28	21	/	32	46	/	34	0					



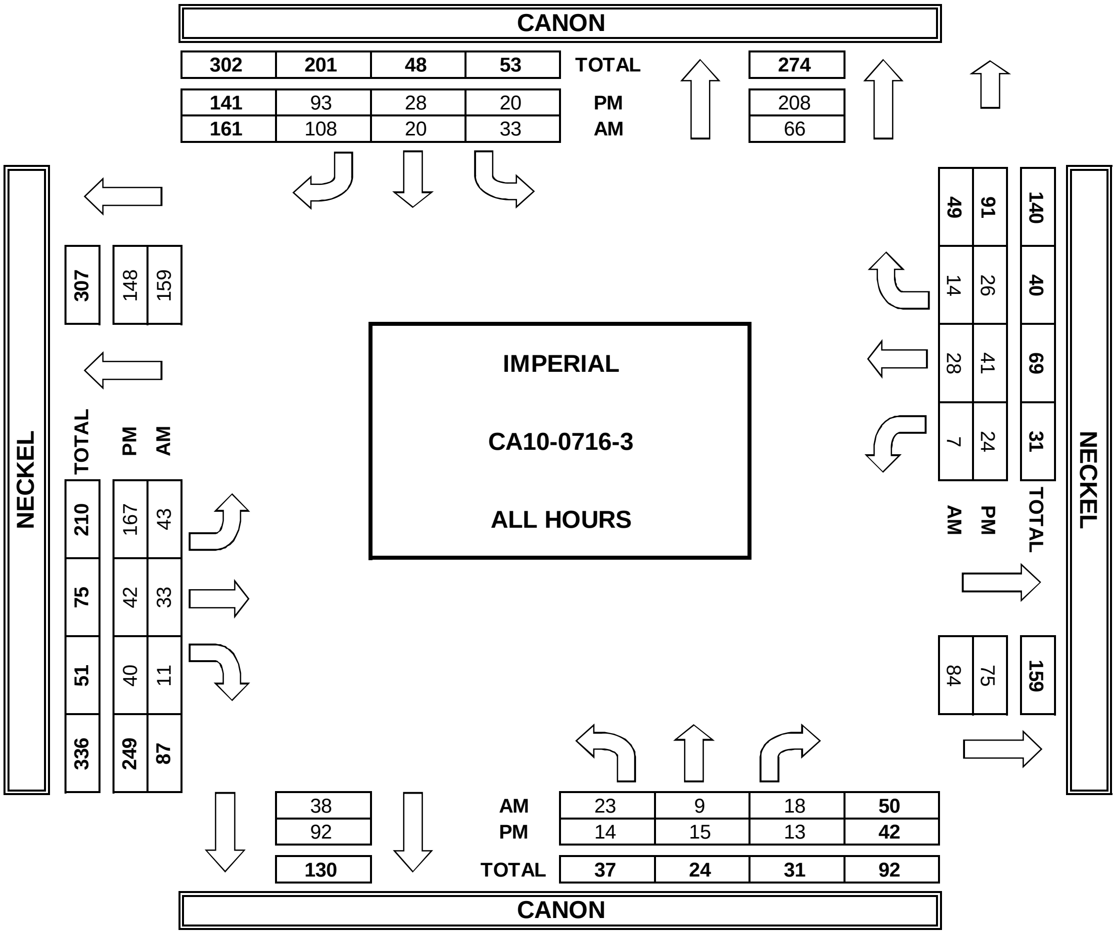
		PEDESTRIAN CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	7:00 AM					0
	7:15 AM					0
	7:30 AM					0
	7:45 AM					0
	8:00 AM					0
	8:15 AM					0
	8:30 AM					0
	8:45 AM					0
	TOTAL	0	0	0	0	0
PM	4:00 PM					0
	4:15 PM					0
	4:30 PM					0
	4:45 PM					0
	5:00 PM					0
	5:15 PM					0
	5:30 PM					0
	5:45 PM					0
	TOTAL	0	0	0	0	0

		PEDESTRIAN ACTIVATIONS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	7:00 AM					0
	7:15 AM					0
	7:30 AM					0
	7:45 AM					0
	8:00 AM					0
	8:15 AM					0
	8:30 AM					0
	8:45 AM					0
	TOTAL	0	0	0	0	0
PM	4:00 PM					0
	4:15 PM					0
	4:30 PM					0
	4:45 PM					0
	5:00 PM					0
	5:15 PM					0
	5:30 PM					0
	5:45 PM					0
	TOTAL	0	0	0	0	0

		BICYCLE CROSSINGS				
		NS	SS	ES	WS	TOTAL
AM	7:00 AM					0
	7:15 AM					0
	7:30 AM					0
	7:45 AM					0
	8:00 AM					0
	8:15 AM					0
	8:30 AM					0
	8:45 AM					0
	TOTAL	0	0	0	0	0
PM	4:00 PM					0
	4:15 PM					0
	4:30 PM					0
	4:45 PM					0
	5:00 PM					0
	5:15 PM					0
	5:30 PM					0
	5:45 PM					0
	TOTAL	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS

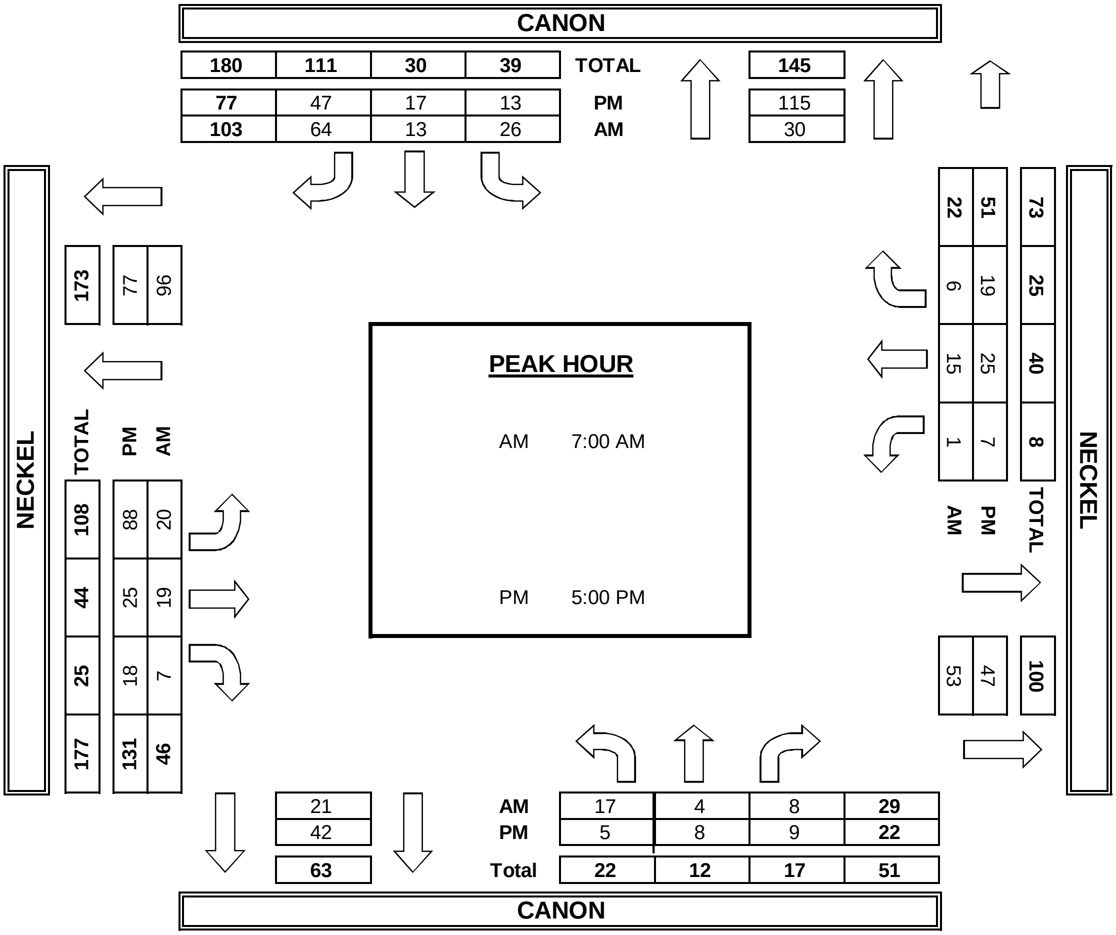


302	201	48	53	TOTAL	274	
141	93	28	20	PM	208	
161	108	20	33	AM	66	

TOTAL	307	210	75	51	336
PM	148	167	42	40	249
AM	159	43	33	11	87

AM	49	14	28	7	84
PM	91	26	41	24	75
TOTAL	140	40	69	31	159

38	AM	23	9	18	50
92	PM	14	15	13	42
130	TOTAL	37	24	31	92



180	111	30	39	TOTAL	145	
77	47	17	13	PM	115	
103	64	13	26	AM	30	

TOTAL	173	108	44	25	177
PM	77	88	25	18	131
AM	96	20	19	7	46

AM	22	6	15	1	53
PM	51	19	25	7	47
TOTAL	73	25	40	8	100

21	AM	17	4	8	29
42	PM	5	8	9	22
63	Total	22	12	17	51

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE: 7/13/10 TUESDAY	LOCATION:	IMPERIAL		PROJECT #:	CA10-0716-3
	NORTH & SOUTH:	CANON		LOCATION #:	7
	EAST & WEST:	NECKEL		CONTROL:	2-WAY STOP (NS)

NOTES:

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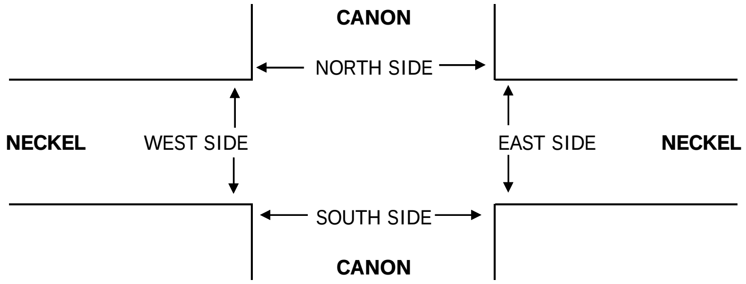
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				U-TURNS				
		CANON			CANON			NECKEL			NECKEL								
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	0	1	0	0	1	0	0	1	0	0	1	0		X	X	X	X	
AM	7:00 AM	3	3	2	8	3	11	5	4	2	0	3	1	45					0
	7:15 AM	2	0	2	7	1	15	6	3	2	0	3	1	42					0
	7:30 AM	8	1	2	8	5	29	3	5	2	0	5	4	72					0
	7:45 AM	4	0	2	3	4	9	6	7	1	1	4	0	41					0
	8:00 AM	1	0	1	4	2	9	6	2	0	1	4	2	32					0
	8:15 AM	2	1	3	1	3	8	6	4	1	1	2	0	32					0
	8:30 AM	0	0	3	1	1	15	7	5	1	2	2	2	39					0
	8:45 AM	3	4	3	1	1	12	4	3	2	2	5	4	44					0
	VOLUMES	23	9	18	33	20	108	43	33	11	7	28	14	347	0	0	0	0	0
	APPROACH %	46%	18%	36%	20%	12%	67%	49%	38%	13%	14%	57%	29%						
	APP/DEPART	50	/	66	161	/	38	87	/	84	49	/	159	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	17	4	8	26	13	64	20	19	7	1	15	6	200					
	APPROACH %	59%	14%	28%	25%	13%	62%	43%	41%	15%	5%	68%	27%						
	PEAK HR FACTOR		0.659			0.613			0.821			0.611		0.694					
	APP/DEPART	29	/	30	103	/	21	46	/	53	22	/	96	0					
PM	4:00 PM	2	1	0	1	5	8	16	3	10	5	2	2	55					0
	4:15 PM	2	2	0	1	3	12	26	3	3	5	9	2	68					0
	4:30 PM	3	3	3	3	1	15	19	1	5	4	3	1	61					0
	4:45 PM	2	1	1	2	2	11	18	10	4	3	2	2	58					0
	5:00 PM	0	2	3	5	3	6	28	7	4	2	9	7	76					0
	5:15 PM	1	3	3	2	9	15	25	8	3	0	4	5	78					0
	5:30 PM	1	2	3	4	5	8	15	6	7	2	7	4	64					0
	5:45 PM	3	1	0	2	0	18	20	4	4	3	5	3	63					0
	VOLUMES	14	15	13	20	28	93	167	42	40	24	41	26	523	0	0	0	0	0
	APPROACH %	33%	36%	31%	14%	20%	66%	67%	17%	16%	26%	45%	29%						
	APP/DEPART	42	/	208	141	/	92	249	/	75	91	/	148	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	5	8	9	13	17	47	88	25	18	7	25	19	281					
	APPROACH %	23%	36%	41%	17%	22%	61%	67%	19%	14%	14%	49%	37%						
	PEAK HR FACTOR		0.786			0.740			0.840			0.708		0.901					
	APP/DEPART	22	/	115	77	/	42	131	/	47	51	/	77	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix B: SYNCHRO Output Files

APPENDIX H

Geotechnical Report

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Geotechnical Report

NWC Neckle Road and Hwy 86

Imperial, California

Prepared for:

Mr. Victor Liu
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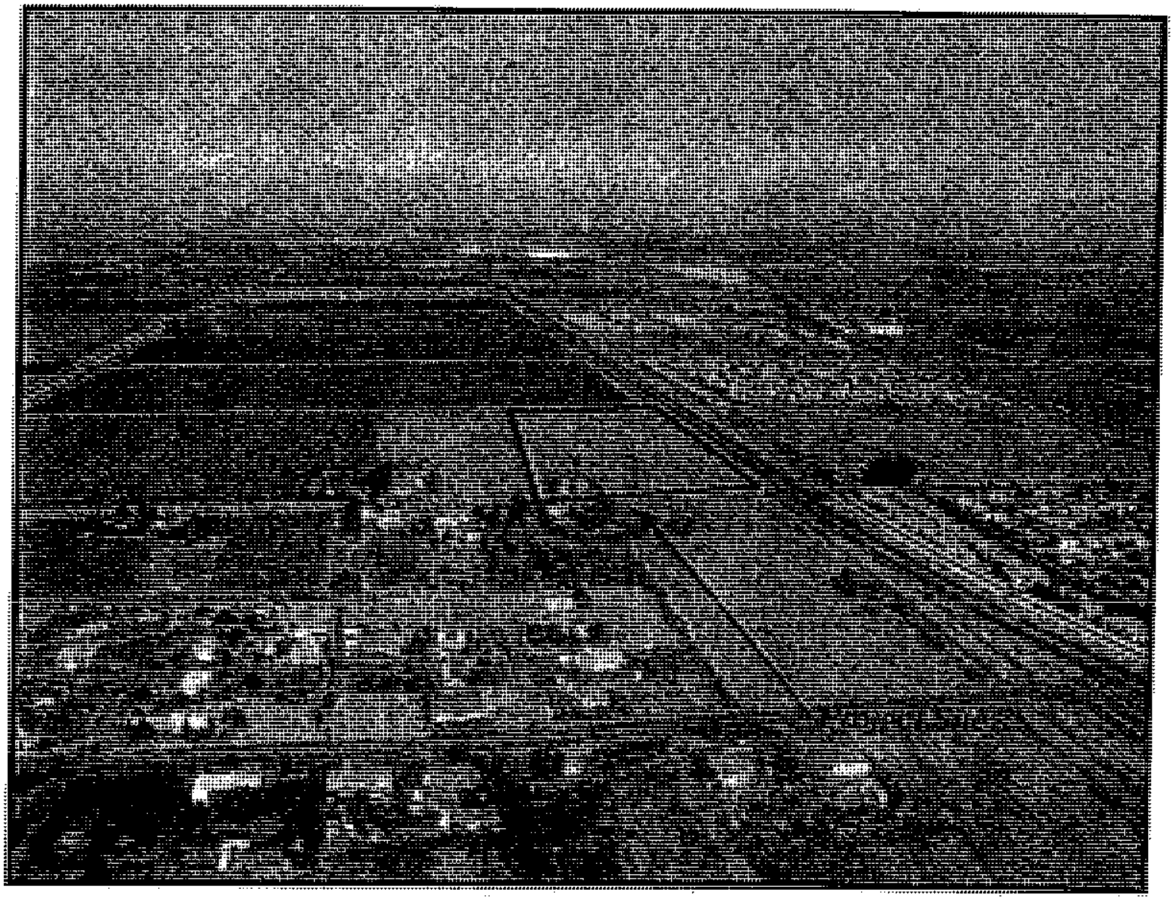
San Gabriel, CA 91776



Prepared by:

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December 2003

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Section 1
INTRODUCTION

1.1 Project Description

This report presents the findings of our geotechnical investigation for the proposed development of 26 acres located at the northwest corner of Neckle Road and Hwy 86 in northern Imperial, California (See Vicinity Map, Plate A-1). The proposed development will consist of single family residential homes. A site plan for the proposed development was not made available to us at the time that this report was prepared.

The structures are planned to consist of slabs-on-grade foundations and wood-frame construction. Footing loads at exterior bearing walls are estimated at 0.5 to 2 kips per lineal foot. Column loads are estimated to range from 5 to 15 kips. If structural loads exceed those stated above, we should be notified so we may evaluate their impact on foundation settlement and bearing capacity. Site development will include building pad preparation, underground utility installation, street construction, and concrete driveway and sidewalk placement.

1.2 Purpose and Scope of Work

The purpose of this geotechnical study was to investigate the upper 40 feet of subsurface soil at selected locations within the site for evaluation of physical/engineering properties. From the subsequent field and laboratory data, professional opinions were developed and are provided in this report regarding geotechnical conditions at this site and the effect on design and construction. The scope of our services consisted of the following:

- Field exploration and in-situ testing of the site soils at selected locations and depths.
- Laboratory testing for physical and/or chemical properties of selected samples.
- Review of the available literature and publications pertaining to local geology, faulting, and seismicity.
- Engineering analysis and evaluation of the data collected.
- Preparation of this report presenting our findings, professional opinions, and recommendations for the geotechnical aspects of project design and construction.

This report addresses the following geotechnical issues:

- Subsurface soil and groundwater conditions
- Site geology, regional faulting and seismicity, near source factors, and site seismic accelerations
- Liquefaction potential and its mitigation
- Expansive soil and methods of mitigation
- Aggressive soil conditions to metals and concrete

Professional opinions with regard to the above issues are presented for the following:

- Site grading and earthwork
- Building pad and foundation subgrade preparation
- Allowable soil bearing pressures and expected settlements
- Concrete slabs-on-grade
- Excavation conditions and buried utility installations
- Mitigation of the potential effects of salt concentrations in native soil to concrete mixes and steel reinforcement
- Seismic design parameters
- Pavement structural sections

Our scope of work for this report did not include an evaluation of the site for the presence of environmentally hazardous materials or conditions.

1.3 Authorization

Mr. Henry Szu provided verbal authorization to proceed with our work on November 21, 2003. We conducted our work according to our written proposal dated November 13, 2003.

Section 2
METHODS OF INVESTIGATION

2.1 Field Exploration

Subsurface exploration was performed on December 1, 2003 using Holguin, Fahan, & Associates, Inc. of Cypress, California to advance five (5) electric cone penetrometer (CPT) soundings to approximate depths of 40 feet below existing ground surface. The soundings were made at the locations shown on the Site and Exploration Plan (Plate A-2). The approximate sounding locations were established in the field and plotted on the site map by sighting to discernable site features.

CPT soundings provide a continuous profile of the soil stratigraphy with readings every 2.5cm (1 inch) in depth. Direct sampling for visual and physical confirmation of soil properties has been used by our firm to establish direct correlations with CPT exploration in this geographical region.

The CPT exploration was conducted by hydraulically advancing an instrumented Hogentogler $10cm^2$ conical probe into the ground at a rate of 2cm per second using a 23-ton truck as a reaction mass. An electronic data acquisition system recorded a nearly continuous log of the resistance of the soil against the cone tip (Qc) and soil friction against the cone sleeve (Fs) as the probe was advanced. Empirical relationships (Robertson and Campanella, 1989) were then applied to the data to give a continuous profile of the soil stratigraphy. Interpretation of CPT data provides correlations for SPT blow count, phi (ϕ) angle (soil friction angle), undrained shear strength (S_u) of clays and over-consolidation ratio (OCR). These correlations may then be used to evaluate vertical and lateral soil bearing capacities and consolidation characteristics of the subsurface soil.

Interpretive logs of the CPT soundings were produced and presented in final form after review of field and laboratory data and are presented on Plates B-1 through B-5 in Appendix B. A key to the interpretation of CPT soundings is presented on Plate B-6. The stratification lines shown on the subsurface logs represent the approximate boundaries between the various strata. However, the transition from one stratum to another may be gradual over some range of depth.

2.2 Laboratory Testing

Laboratory tests were conducted on selected bulk soil samples obtained from hand auger borings made adjacent to the CPT locations to aid in classification and evaluation of selected engineering properties of the near surface soils. The tests were conducted in general conformance to the procedures of the American Society for Testing and Materials (ASTM) or other standardized methods as referenced below. The laboratory testing program consisted of the following tests:

- Plasticity Index (ASTM D4318) – used for soil classification and expansive soil design criteria
- Expansion Index (Swell) Test (UBC 18-2 and ASTM D4829) – used for evaluating relative expansion classification.
- Chemical Analyses (soluble sulfates & chlorides, pH, and resistivity) (Caltrans Methods) – used for concrete mix evaluations and corrosion protection requirements.

The laboratory test results are presented on the subsurface logs and on Plates C-1 through C-3 in Appendix C.

Engineering parameters of soil strength, compressibility and relative density utilized for developing design criteria provided within this report were either extrapolated from correlations with the subsurface CPT data or from data obtained from the field and laboratory testing program.

Section 3
DISCUSSION

3.1 Site Conditions

The 26-acre project site is vacant, flat-lying with very little, if any, vegetation covering the site. The site was previously agricultural use land which has been fallow for several years. The site is relatively rectangular in plan view with a small section of the southwest corner of the site not included. A small rural residential house in located in the portion not included in the site. Agricultural fields are located to the north of the site. Rural residential homes are located west of the site. An agricultural irrigation water run-off ditch runs along the eastern boundary of the site beyond which is State Hwy 86, a major 4-lane divided highway between the Imperial and Riverside Counties.

The project site lies at an elevation of approximately 65 feet below mean sea level (MSL) (El. 935 local datum) in the Imperial Valley region of the California low desert. The surrounding properties lie on terrain which is flat (planar), part of a large agricultural valley, which was previously an ancient lake bed covered with fresh water to an elevation of 43± feet above MSL. Annual rainfall in this arid region is less than 4 inches per year with four months of average summertime temperatures above 100 °F. Winter temperatures are mild, seldom reaching freezing.

3.2 Geologic Setting

The project site is located in the Imperial Valley portion of the Salton Trough physiographic province. The Salton Trough is a geologic structural depression resulting from large scale regional faulting. The trough is bounded on the northeast by the San Andreas Fault and Chocolate Mountains and the southwest by the Peninsular Range and faults of the San Jacinto Fault Zone. The Salton Trough represents the northward extension of the Gulf of California, containing both marine and non-marine sediments since the Miocene Epoch. Tectonic activity that formed the trough continues at a high rate as evidenced by deformed young sedimentary deposits and high levels of seismicity. Figure 1 shows the location of the site in relation to regional faults and physiographic features.

The Imperial Valley is directly underlain by lacustrine deposits, which consist of interbedded lenticular and tabular silt, sand, and clay. The Late Pleistocene to Holocene lake deposits are probably less than 100 feet thick and derived from periodic flooding of the Colorado River which intermittently formed a fresh water lake (Lake Cahuilla). Older deposits consist of Miocene to Pleistocene non-marine and marine sediments deposited during intrusions of the Gulf of California. Basement rock consisting of Mesozoic granite and Paleozoic metamorphic rocks are estimated to exist at depths between 15,000 - 20,000 feet.

3.3 Seismicity and Faulting

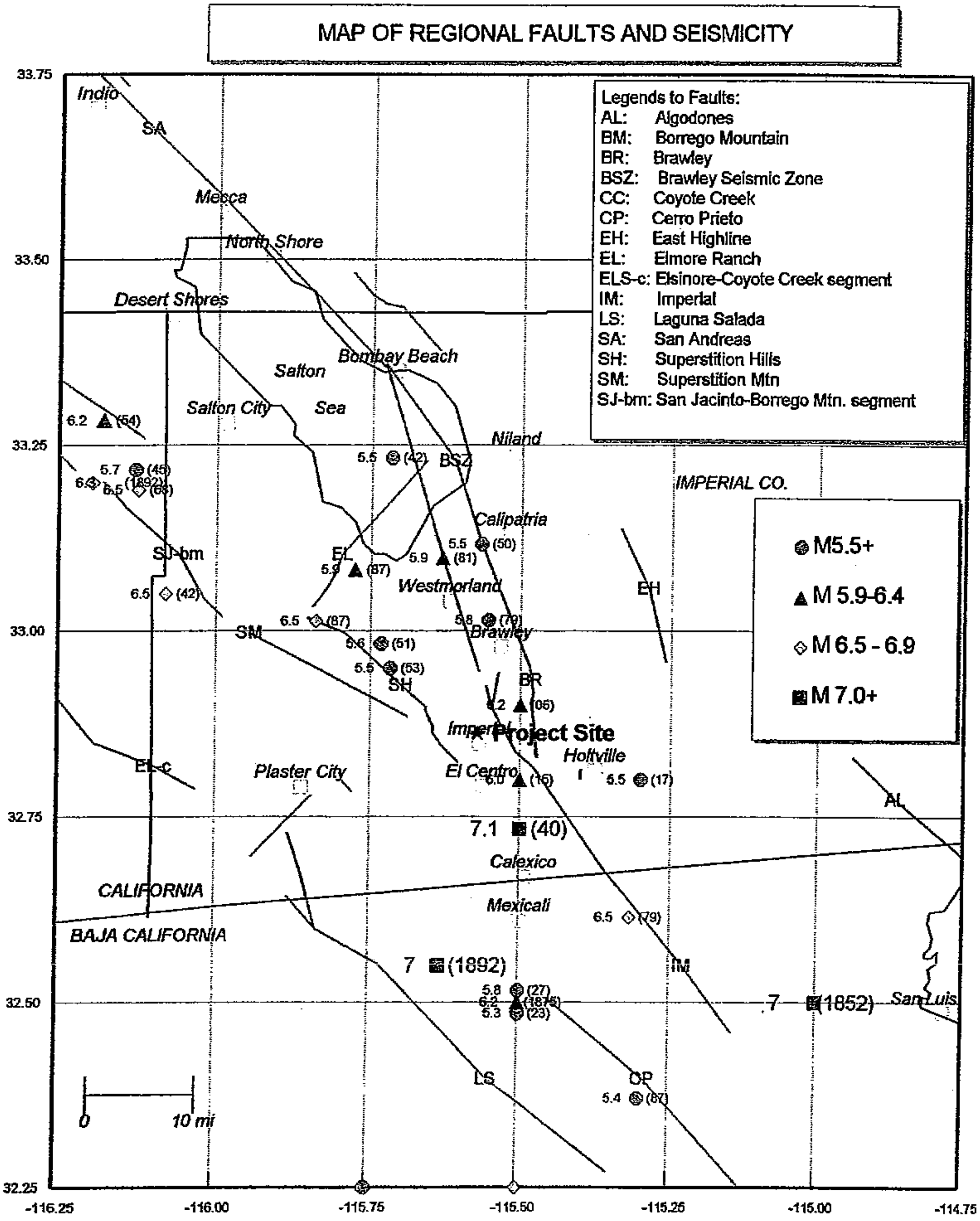
Faulting and Seismic Sources: We have performed a computer-aided search of known faults or seismic zones that lie within a 62 mile (100 kilometers) radius of the project site as shown on Figure 1 and Table 1. The search identifies known faults within this distance and computes deterministic ground accelerations at the site based on the maximum credible earthquake expected on each of the faults and the distance from the fault to the site. The Maximum Magnitude Earthquake (Mmax) listed was taken from published geologic information available for each fault (CDMG OFR 96-08 and Jennings, 1994).

Seismic Risk: The project site is located in the seismically active Imperial Valley of southern California and is considered likely to be subjected to moderate to strong ground motion from earthquakes in the region. The proposed site structures should be designed in accordance with the California Building Code (CBC) for near source factors derived from a "Design Basis Earthquake" (DBE). The DBE is defined as the motion having a 10 percent probability of being exceeded in 50 years. The DBE generally corresponds to the Mmax magnitude discussed here.

Seismic Hazards.

▸ **Groundshaking.** The primary seismic hazard at the project site is the potential for strong groundshaking during earthquakes along the Imperial, Brawley, and Superstition Hills Faults. A further discussion of groundshaking follows in Section 3.4.

▸ **Surface Rupture.** The project site does not lie within a State of California, Alquist-Priolo Earthquake Fault Zone. Surface fault rupture is considered to be unlikely at the project site because of the well-delineated fault lines through the Imperial Valley as shown on USGS and CGS maps.



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Faults and Seismic Zones from Jennings (1994), Earthquakes modified from Ellsworth (1990) catalog.

Figure 1. Map of Regional Faults and Seismicity

Table 1
FAULT PARAMETERS & DETERMINISTIC ESTIMATES OF PEAK GROUND ACCELERATION (PGA)

Fault Name or Seismic Zone	Distance (mi) & Direction from Site		Fault Type		Fault Length (km)	Maximum Magnitude Mmax (Mw)	Avg Slip Rate (mm/yr)	Avg Return Period (yrs)	Date of Last Rupture (year)	Largest Historic Event >5.5M	(year)	Est. Site PGA (g)
Reference Notes: (1)			(2)	(3)	(2)	(4)	(3)	(3)	(3)	(5)		(6)
Imperial Valley Faults												
Imperial	2.4	NE	A	B	62	**7.0**	20	79	1979	7.0	1940	**0.49**
Brawley	5.6	E	B	B	14	**7.0**	20	—	1979	5.8	1979	**0.35**
Brawley Seismic Zone	5.7	N	B	B	42	**6.4**	25	24		5.9	1981	**0.25**
East Highline Canal	19	ENE	C	C	22	**6.3**	1	774				**0.10**
Cerro Prieto	26	SSE	A	B	116	**7.2**	34	50	1980	7.1	1934	**0.13**
San Jacinto Fault System												
- Superstition Hills	3.3	SW	B	A	22	**6.6**	4	250	1987	6.5	1987	**0.36**
- Superstition Mtn.	6.8	W	B	A	23	**6.6**	5	500	1440 +/-			**0.25**
- Elmore Ranch	20	WNW	B	A	29	**6.6**	1	225	1987	5.9	1987	**0.12**
- Borrego Mtn	26	WNW	B	A	29	**6.6**	4	175		6.5	1942	**0.09**
- Anza Segment	42	NW	A	A	90	**7.2**	12	250	1918	6.8	1918	**0.09**
- Coyote Creek	45	WNW	B	A	40	**6.8**	4	175	1968	6.5	1968	**0.07**
- Hot Spgs-Buck Ridge	57	NW	B	A	70	**6.5**	2	354		6.3	1937	**0.05**
- Whole Zone	6.8	W	A	A	245	**7.5**	—	—				**0.40**
Elsinore Fault System												
- Laguna Salada	20	WSW	B	B	67	**7.0**	3.5	336		7.0	1891	**0.14**
- Coyote Segment	27	W	B	A	38	**6.8**	4	625				**0.10**
- Julian Segment	50	W	A	A	75	**7.1**	5	340				**0.07**
- Earthquake Valley	51	WNW	B	A	20	**6.5**	2	351				**0.05**
- Whole Zone	27	W	A	A	250	**7.5**	—	—				**0.15**
San Andreas Fault System												
- Coachella Valley	35	NNW	A	A	95	**7.4**	25	220	1690+/-	6.5	1948	**0.12**
- Whole S. Calif. Zone	35	NNW	A	A	458	**7.9**	—	—	1857	7.8	1857	**0.15**
Algodones	37	E	C	C	74	**7.0**	0.1	20,000				**0.09**

Notes:

1. Jennings (1994) and CDMG (1996)
2. CDMG (1996), where Type A faults -- slip rate >5 mm/yr and well constrained paleoseismic data
   Type B faults -- all other faults.
3. WGCEP (1995)
4. CDMG (1996) based on Wells & Coppersmith (1994)
5. Ellsworth Catalog in USGS PP 1515 (1990) and USBR (1976), Mw = moment magnitude,
6. The deterministic estimates of the Site PGA are based on the attenuation relationship of:
   Boore, Joyner, Fumal (1997)

However, because of the high tectonic activity and deep alluvium of the region, we cannot preclude the potential for surface rupture on undiscovered or new faults that may underlie the site.

▸ **Liquefaction.** Liquefaction is a potential design consideration because of underlying saturated sandy substrata. The potential for liquefaction at the site is discussed in more detail in Section 3.7.

Other Secondary Hazards.

▸ **Landsliding.** The hazard of landsliding is unlikely due to the regional planar topography. No ancient landslides are shown on geologic maps of the region and no indications of landslides were observed during our site investigation.

▸ **Volcanic hazards.** The site is not located in proximity to any known volcanically active area and the risk of volcanic hazards is considered very low.

▸ **Tsunamis, sieches, and flooding.** The site does not lie near any large bodies of water, so the threat of tsunami, sieches, or other seismically-induced flooding is unlikely.

▸ **Expansive soil.** In general, much of the near surface soil in the Imperial Valley consist of silty clays and clays which are moderate to highly expansive. The expansive soil conditions are discussed in more detail in Section 3.5.

3.4 Site Acceleration and UBC Seismic Coefficients

Site Acceleration: Deterministic horizontal peak ground accelerations (PGA) from maximum probable earthquakes on regional faults have been estimated and are included in Table 1. Ground motions are dependent primarily on the earthquake magnitude and distance to the seismogenic (rupture) zone. Accelerations also are dependent upon attenuation by rock and soil deposits, direction of rupture and type of fault; therefore, ground motions may vary considerably in the same general area.

We have used the computer program FRISKSP (Blake, 2000) to provide a probabilistic estimate of the site PGA using the attenuation relationship of Boore, Joyner, and Fumal (1997) Soil (310). The PGA estimate for the project site having a 10% probability of exceedence in 50 years (return period of 475 years) is **0.80g**.

CBC Seismic Coefficients: The CBC seismic coefficients are roughly based on an earthquake ground motion that has a 10% probability of exceedence in 50 years. The following table lists seismic and site coefficients (near source factors) determined by Chapter 16 of the 2001 CBC. ***This site lies within 3.8 km of a Type A fault overlying S_D (stiff) soil.***

CBC Seismic Coefficients for Chapter 16 Seismic Provisions

CBC Code Edition	Soil Profile Type	Seismic Source Type	Distance to Critical Source	Near Source Factors		Seismic Coefficients	
				Na	Nv	Ca	Cv
2001	S_D (stiff soil)	A	< 3.8 km	1.32	1.76	0.58	1.13
Ref. Table	16-J	16-U	---	16-S	16-T	16-Q	16-R

3.5 Subsurface Soil

Subsurface soils encountered during the field exploration conducted on December 1, 2003 consist of dominantly silty clays and clays with a thin (1 to 3 feet) silty sand layer between 10 and 15 feet below ground surface. The subsurface logs (Plates B-1 through B-5) depict the stratigraphic relationships of the various soil types.

The native surface clays exhibit high swell potential (Expansion Index, EI = 95) when tested according to Uniform Building Code Standard 18-2. The clay is expansive when wetted and can shrink with moisture loss (drying). Development of building foundations, concrete flatwork, and asphaltic concrete pavements should include provisions for mitigating potential swelling forces and reduction in soil strength, which can occur from saturation of the soil. Causes for soil saturation include landscape irrigation, broken utility lines, or capillary rise in moisture upon sealing the ground surface to evaporation. Moisture losses can occur with lack of landscape watering, close proximity of structures to downslopes and root system moisture extraction from deep rooted shrubs and trees placed near the foundations.

Typical measures used locally for residential projects to remediate expansive soil include:

- replacement of silt/clay with non-expansive sands or silts,
- treatment of silt/clay with lime to mitigate the shrink/swell forces of the clay soils when sulfate content of the soils is generally less than 7,500 ppm,
- design of foundations that are resistant to shrink/swell forces of silt/clay soil.

3.6 Groundwater

A 1-inch diameter piezometer was installed in the CPT-2 probe hole to a depth of 15 feet at the project site. Groundwater was encountered in the piezometer at a depth of 10 feet on December 3, 2003, 2 days after placement of the piezometer. There is uncertainty in the accuracy of short-term water level measurements, particularly in fine-grained soil. Groundwater levels may fluctuate with precipitation, irrigation of adjacent properties, drainage, and site grading. The groundwater level noted should not be interpreted to represent an accurate or permanent condition. Our work scope did not include a groundwater surface mounding study resulting from applied landscape water.

Soils encountered below 3 feet may pump under construction wheel loads. Light equipment should be anticipated for use in these areas.

3.7 Liquefaction

Liquefaction occurs when granular soil below the water table is subjected to vibratory motions, such as produced by earthquakes. With strong ground shaking, an increase in pore water pressure develops as the soil tends to reduce in volume. If the increase in pore water pressure is sufficient to reduce the vertical effective stress (suspending the soil particles in water), the soil strength decreases and the soil behaves as a liquid (similar to quicksand). Liquefaction can produce excessive settlement, ground rupture, lateral spreading, or failure of shallow bearing foundations.

Four conditions are generally required for liquefaction to occur:

(1) the soil must be saturated (relatively shallow groundwater);
(2) the soil must be loosely packed (low to medium relative density);
(3) the soil must be relatively cohesionless (not clayey); and
(4) groundshaking of sufficient intensity must occur to function as a trigger mechanism.

All of these conditions exist to some degree at this site.

Methods of Analysis: Liquefaction potential at the project site was evaluated using the 1997 NCEER Liquefaction Workshop methods that are based on the Seed, et. al. 1985 and Robertson and Campanella (1985) methods. The 1997 NCEER methods utilize direct SPT blow counts or CPT cone readings from site exploration and earthquake magnitude/PGA estimates from the seismic hazard analysis. The resistance to liquefaction is plotted on a chart of cyclic shear stress ratio (CSR) versus a corrected blow count $N_{1(60)}$ or Qc_{1N}. A ground acceleration of 0.80g was used in the analysis with a 10-foot groundwater depth.

Liquefaction induced settlements have been estimated using the 1987 Tokimatsu and Seed method. Fines content of liquefiable sands and silt increase the liquefaction resistance in that more cycles of ground motions are required to fully develop pore pressures. The SPT blow counts were adjusted to an equivalent clean sand blow count, $N_{1(60)}$ prior to calculating settlements using Robertson and Wride (1997) adjustments. A computed factor of safety less than 1.0 indicates a liquefiable condition.

The soil encountered at the points of exploration included saturated silts and silty sands that could liquefy during a CBC Design Basis Earthquake (7M – 0.80g) for a 10% risk in 50 years. Liquefaction can occur within a 1 to 2-foot thick silt layer at a depth of 11 to 13.5 feet below ground surface. The likely triggering mechanism for liquefaction appears to be strong groundshaking associated with the rupture of the Imperial Fault.

Liquefaction Effects: Based on empirical relationships, total induced settlements are estimated to be less than ½ inch should liquefaction occur. Based on research from Ishihara (1985) and Youd (1995) ground rupture or sand boil formation is unlikely because of the thickness of the upper unliquefiable soil.

Because of the depth of the liquefiable layer, wide area subsidence from soil overburden would be the expected effect of liquefaction rather than bearing capacity failure of the proposed structures.

Since the potentially liquefiable sandy soil are overlain by 11 feet of stiff clay which resist groundwater movement, it is unlikely that the light structure loads planned are sufficient to result in liquefaction induced settlement greater than the surrounding land mass.

Mitigation: No mitigation for the effects of liquefaction induced settlement is required at this site.

Section 4
RECOMMENDATIONS

4.1 Site Preparation

Clearing and Grubbing: All surface improvements, debris or vegetation including grass, trees, and weeds on the site at the time of construction should be removed from the construction area. Root balls should be completely excavated. Organic strippings should be hauled from the site and not used as fill. Any trash, construction debris, concrete slabs, old pavement, landfill, and buried obstructions such as old foundations and utility lines exposed during rough grading should be traced to the limits of the foreign material by the grading contractor and removed under our supervision. Any excavations resulting from site clearing should be dish-shaped to the lowest depth of disturbance and backfilled under the observation of the geotechnical engineer's representative.

Building Pad Preparation: The exposed surface soil within the building pad/foundation areas should be removed to 36 inches below the building pad elevation or existing grade (whichever is lower) extending five feet beyond all exterior wall/column lines (including adjacent concreted areas). Exposed subgrade should be scarified to a depth of 8 inches, uniformly moisture conditioned to 5 to 10% above optimum moisture and recompacted to 85 to 90% of the maximum density determined in accordance with ASTM D1557 methods. Prior to over-excavation of the surface soil, deep moisture penetration may be achieved by bordering the site and applying multiple floodings to allow water to permeate to a minimum depth of 3.5 feet (20% minimum moisture content) below exposed subgrade.

The native soil is suitable for use as engineered fill provided it is free from concentrations of organic matter or other deleterious material. The fill soil should be uniformly moisture conditioned by discing and watering to the limits specified above, placed in maximum 8-inch lifts (loose), and compacted to the limits specified above. Clay soil should not be compacted greater than 90% relative compaction because highly compacted soil will result in increased swelling.

If foundation designs are to be utilized which do not include provisions for expansive soil, an engineered building support pad consisting of 3.0 feet of granular soil or lime treated soil, placed in maximum 8-inch lifts (loose), compacted to a minimum of 90% of ASTM D1557 maximum density at 2% below to 4% above optimum moisture, should be placed below the bottom of the slab.

Lime content in soil shall be established by the Eades-Grims Method with a resulting maximum Expansion Index of 15 after lime addition.

Imported fill soil (if required) should have a Plasticity Index less than 15 and sulfates (SO_4) less than 1,000 ppm or non-expansive, granular soil meeting the USCS classifications of SM, SP-SM, or SW-SM with a maximum rock size of 3 inches and 5 to 35% passing the No. 200 sieve. The geotechnical engineer should approve imported fill soil sources before hauling material to the site. Imported granular fill should be placed in lifts no greater than 8 inches in loose thickness and compacted to a minimum of 90% of ASTM D1557 maximum dry density at optimum moisture ±2%.

In areas other than the building pad which are to receive area concrete slabs, the ground surface should be presaturated to a minimum depth of 24 inches and then scarified to 8 inches, moisture conditioned to a minimum of 5% over optimum, and recompacted to 83-87% of ASTM D1557 maximum density just prior to concrete placement.

Trench Backfill: On-site soil free of debris, vegetation, and other deleterious matter may be suitable for use as utility trench backfill, but may be difficult to uniformly maintain at specified moistures and compact to the specified densities. Granular material is often more cost effective for backfill of utility trenches. Granular trench backfill used in building pad areas should be plugged at each end of the building foundation to prevent landscape water migration into the trench below the building.

Backfill soil within roadways should be placed in layers not more that 6 inches in thickness and mechanically compacted to a minimum of 87% of the ASTM D1557 maximum dry density except for the top 12 inches of the trench which shall be compacted to at least 90%. Native backfill should only be placed and compacted after encapsulating buried pipes with suitable bedding and pipe envelope material. Pipe envelope/bedding should either be clean sand (Sand Equivalent SE>30) or crushed rock when encountering groundwater. A geotextile filter fabric (Mirafi 140N or equivalent) should be used to encapsulate the crushed rock to reduce the potential for in-washing of fines into the gravel void space. Precautions should be taken in the compaction of the backfill to avoid damage to the pipes and structures.

Moisture Control and Drainage: The moisture condition of the building pad should be maintained during trenching and utility installation until concrete is placed or should be rewetted before initiating delayed construction. If soil drying is noted, a 2 to 3 inch depth of water may be used in the bottom of footings to restore footing subgrade moisture and reduce potential edge lift.

Adequate site drainage is essential to future performance of the project. Infiltration of excess irrigation water and stormwaters can adversely affect the performance of the subsurface soil at the site. Positive drainage should be maintained away from all structures (5% for 5 feet minimum across unpaved areas) to prevent ponding and subsequent saturation of the native clay soil. Gutters and downspouts may be considered as a means to convey water away from foundations. If landscape irrigation is allowed next to the building, drip irrigation systems or lined planter boxes should be used. The subgrade soil should be maintained in a moist, but not saturated state, and not allowed to dry out. Drainage should be maintained without ponding.

Observation and Density Testing: All site preparation and fill placement should be continuously observed and tested by a representative of a qualified geotechnical engineering firm. Full-time observation services during the excavation and scarification process is necessary to detect undesirable materials or conditions and soft areas that may be encountered in the construction area. The geotechnical firm that provides observation and testing during construction shall assume the responsibility of "*geotechnical engineer of record*" and, as such, shall perform additional tests and investigation as necessary to satisfy themselves as to the site conditions and the recommendations for site development.

Auxiliary Structures Foundation Preparation: Auxiliary structures such as free standing or retaining walls should have the existing soil beneath the structure foundation prepared in the manner recommended for the building pad except the preparation needed only to extend 18 inches below and beyond the footing.

4.2 Foundations and Settlements

Shallow spread footings and continuous wall footings are suitable to support the structures provided they are structurally tied with grade-beams to resist differential movement associated with liquefiable and expansive soils.

Footings shall be founded on a layer of properly prepared and compacted soil as described in Section 4.1. The foundations may be designed using an allowable soil bearing pressure of 1,500 psf for compacted native clay soil and 2,000 psf when foundations are supported on imported sands (extending a minimum of 1.0 feet below footings). The allowable soil pressure may be increased by 20% for each foot of embedment depth in excess of 18 inches and by one-third for short term loads induced by winds or seismic events. The maximum allowable soil pressure at increased embedment depths shall not exceed 3,000 psf (clays).

As an alternative to shallow spread foundations, flat plate structural mats or grade-beam reinforced foundations may be used to mitigate expansive soil heave and/or liquefaction related movement.

Flat Plate Structural Mats: Flat plate structural mats may be used to mitigate expansive soils at the project site. The structural mat shall have a double mat of steel (minimum No. 4's @ 12" O.C. each way – top and bottom) and a minimum thickness of 10 inches. Mat edges shall have a minimum edge footing of 12 inches width and 18 inches depth (below the building pad surface). Mats may be designed by UBC Section 1815 (Div. III) methods using an Effective Plasticity Index of 27.

Structural mats may be designed for a modulus of subgrade reaction (Ks) of 100 pci when placed on compacted clay or a subgrade modulus of 300 pci when placed on 3.0 feet of granular fill. Mats shall overlay 2 inches of sand and a 10-mil vapor barrier. The building support pad shall be moisture conditioned and recompacted as specified in Section 4.1 of this report.

Grade-beam Reinforced Foundations: Specific soil data for structures with grade-beam reinforced foundations placed on the native clays (without a minimum of 2.5 feet of underlying granular fill or lime treated soil placed over native clays) are presented below in accordance with the design method given in CBC Chapter 18 (1997) - Division III, Section 1815:

- Weighted Plasticity Index (PI) = 33
- Slope Coefficient (C_s) = 1.0
- Strength Coefficient (C_o) = 0.8
- Climatic Rating (C_w) = 15
- Effective PI = 27
- 1-C Value = 0.13
- Maximum Grade-beam Spacing = 18 feet

Post-tensioned Slabs: If post-tensioned slabs are considered for this project, the following soil criteria shall be used in the Post Tensioning Institute (PTI) designs:

Edge Moisture Variation, e_m	Center Lift: 5.3 ft. Edge Lift: 2.6 ft.
Depth to Constant Suction:	5.0 ft.
Constant Suction (pf):	3.6
Differential Swell, y_m	Center Lift: 4.74 in. Edge Lift: 1.15 in.
Estimated Differential Settlement (swell):	1.0 in.
Bearing Capacity:	1,500 psf

Clamping devices and end anchors for post-tensioned tendons are susceptible to corrosion from aggressive soil and landscape water conditions. Therefore, a minimum concrete cover of 3.0 inches, a PVC end cap and epoxy coatings should be specified for the tendon ends with a positive bonding agent used with polymer modified cementitious material to patch the recessed anchor cup. A complete encapsulation system intended for corrosive environments is a suggested protection method for post-tensioning cables and anchoring/clamping devices.

All exterior and interior foundations should be embedded a minimum of 18 inches below the building support pad or lowest adjacent final grade, whichever is deeper. Continuous wall footings should have a minimum width of 12 inches. Spread footings should have a minimum width of 24 inches and should not be structurally isolated. Recommended concrete reinforcement and sizing for all footings should be provided by the structural engineer.

Resistance to horizontal loads will be developed by passive earth pressure on the sides of footings and frictional resistance developed along the bases of footings and concrete slabs. Passive resistance to lateral earth pressure may be calculated using an equivalent fluid pressure of 250 pcf (300 pcf for sands) to resist lateral loadings. The top one foot of embedment should not be considered in computing passive resistance unless the adjacent area is confined by a slab or pavement. An allowable friction coefficient of 0.25 (0.35 for sands) may also be used at the base of the footings to resist lateral loading.

Foundation movement under the estimated static (non-seismic) loadings and static site conditions are estimated to not exceed ¾ inch with differential movement of about two-thirds of total movement for the loading assumptions stated above when the subgrade preparation guidelines given above are followed. Seismically induced liquefaction settlement may be on the order of less than ½ inch.

4.3 Slabs-On-Grade

Concrete slabs and flatwork placed over native clay soil should be designed in accordance with Chapter 18, Division III of the 2001 CBC (using a Effective Plasticity Index of 27) and shall be a minimum of 5 inches thick due to expansive soil conditions. No special requirements exist for slabs placed on 3.0 feet of granular fill or lime treated soil (with an Expansion Index less than 15). Concrete floor slabs shall be monolithically placed with the foundations unless placed on 3.0 feet of granular fill or lime treated soil. The concrete slabs should be underlain by a minimum of 4 inches of clean sand (Sand Equivalent SE>30) or aggregate base or may be placed directly on the 3.0-foot thick granular fill pad (if used) that has been moistened to approximately optimum moisture just before the concrete placement. A 10-mil visqueen vapor barrier, properly lapped and sealed with a 2-inch sand cover and extended a minimum of 12 inches into the footing, should be placed as a capillary break to prevent moisture migration into the slab section. Concrete slabs may be placed directly over a 15-mil vapor barrier if desired (Stego-Wrap or equivalent).

Concrete slab and flatwork reinforcement should consist of chaired rebar slab reinforcement (minimum of No. 4 bars at 18-inch centers, both horizontal directions) placed at slab mid-height to resist potential swell forces and cracking. Slab thickness and steel reinforcement are minimums only and should be verified by the structural engineer/designer knowing the actual project loadings. All steel components of the foundation system should be protected from corrosion by maintaining a 3-inch minimum concrete cover of densely consolidated concrete at footings (by use of a vibrator). The construction joint between the foundation and any mowstrips/sidewalks placed adjacent to foundations should be sealed with a polyurethane based non-hardening sealant to prevent moisture migration between the joint. Epoxy coated embedded steel components or permanent waterproofing membranes placed at the exterior footing sidewall may also be used to mitigate the corrosion potential of concrete placed in contact with native soil.

Control joints should be provided in all concrete slabs-on-grade at a maximum spacing (in feet) of 2 to 3 times the slab thickness (in inches) as recommended by American Concrete Institute (ACI) guidelines. All joints should form approximately square patterns to reduce randomly oriented contraction cracks. Contraction joints in the slabs should be tooled at the time of the pour or sawcut (¼ of slab depth) within 6 to 8 hours of concrete placement. Construction (cold) joints in foundations and area flatwork should either be thickened butt-joints with dowels or a thickened keyed-joint designed to resist vertical deflection at the joint. All joints in flatwork should be sealed to prevent moisture, vermin, or foreign material intrusion. Precautions should be taken to prevent curling of slabs in this arid desert region (refer to ACI guidelines).

All independent flatwork (sidewalks, patios) should be placed on a minimum of 2 inches of concrete sand or aggregate base, dowelled to the perimeter foundations where adjacent to the building and sloped 2% or more away from the building. A minimum of 24 inches of moisture conditioned (5% minimum above optimum) and 8 inches of compacted subgrade (83 to 87%) and a 10-mil (minimum) polyethylene separation sheet should underlie the flatwork containing steel reinforcing (except wire mesh). All flatwork should be jointed in square patterns and at irregularities in shape at a maximum spacing of 10 feet or the least width of the sidewalk.

4.4 Concrete Mixes and Corrosivity

Selected chemical analyses for corrosivity were conducted on bulk samples of the near surface soil from the project site (Plate C-2). The native soils have moderate to severe levels of sulfate ion concentration (1,140 to 7,660 ppm). Sulfate ions in high concentrations can attack the cementitious material in concrete, causing weakening of the cement matrix and eventual deterioration by raveling. The California Building Code recommends that increased quantities of Type II Portland Cement be used at a low water/cement ratio when concrete is subjected to moderate sulfate concentrations. Type V Portland Cement and/or Type II/V cement with 25% flyash replacement is recommended when the concrete is subjected to soil with severe sulfate concentration.

A minimum of 6.25 sacks per cubic yard of concrete (4,500 psi) of Type V Portland Cement with a maximum water/cement ratio of 0.45 (by weight) should be used for concrete placed in contact with native soil on this project (sitework including streets, sidewalks, driveways, patios, and foundations). Admixtures may be required to allow placement of this low water/cement ratio concrete.

The native soil has severe to very severe levels of chloride ion concentration (800 to 7,510 ppm). Chloride ions can cause corrosion of reinforcing steel, anchor bolts and other buried metallic conduits. Resistivity determinations on the soil indicate very severe potential for metal loss because of electrochemical corrosion processes. Mitigation of the corrosion of steel can be achieved by using steel pipes coated with epoxy corrosion inhibitors, asphaltic and epoxy coatings, cathodic protection or by encapsulating the portion of the pipe lying above groundwater with a minimum of 4 inches of densely consolidated concrete. ***No metallic pipes or conduits should be placed below foundations.***

Foundation designs shall provide a minimum concrete cover of four (4) inches around steel reinforcing or embedded components (anchor bolts, hold-downs, etc.) exposed to native soil or landscape water (to 18 inches above grade). If the 4-inch concrete edge distance cannot be achieved, all embedded steel components (anchor bolts, hold-downs, etc.) shall be epoxy dipped for corrosion protection or a corrosion inhibitor and a permanent waterproofing membrane shall be placed along the exterior face of the exterior footings. Additionally, the concrete should be thoroughly vibrated at footings during placement to decrease the permeability of the concrete. ***Copper water piping (except for trap primers) should not be placed under floor slabs.*** The trap primer pipe shall be completely encapsulated in a PVC sleeve and Type K copper should be utilized if polyethylene tubing cannot be used.

4.5 Excavations

All site excavations should conform to CalOSHA requirements for Type B soil. The contractor is solely responsible for the safety of workers entering trenches. Temporary excavations with depths of 4 feet or less may be cut nearly vertical for short durations. Excavations deeper than 4 feet will require shoring or slope inclinations in conformance to CAL/OSHA regulations for Type B soil. Surcharge loads of stockpiled soil or construction materials should be set back from the top of the slope a minimum distance equal to the height of the slope. All permanent slopes should not be steeper than 3:1 to reduce wind and rain erosion. Protected slopes with ground cover may be as steep as 2:1. However, maintenance with motorized equipment may not be possible at this inclination.

4.6 Seismic Design

This site is located in the seismically active southern California area and the site structures are subject to strong ground shaking due to potential fault movements along the Brawley, Superstition Hills, and Imperial Faults. Engineered design and earthquake-resistant construction are the common solutions to increase safety and development of seismic areas. Designs should comply with the latest edition of the CBC for Seismic Zone 4 using the seismic coefficients given in Section 3.4 of this report. ***This site lies within 3.8 km of a Type A fault overlying S_D (stiff) soil.***

4.8 Pavements

Pavements should be designed according to CALTRANS or other acceptable methods. Traffic indices were not provided by the project engineer or owner; therefore, we have provided structural sections for several traffic indices for comparative evaluation. The public agency or design engineer should decide the appropriate traffic index for the site. Maintenance of proper drainage is necessary to prolong the service life of the pavements.

Based on the current State of California CALTRANS method, an estimated R-value of 5 for the subgrade soil and assumed traffic indices, the following table provides our estimates for asphaltic concrete (AC) pavement sections.

RECOMMENDED PAVEMENTS SECTIONS

R-Value of Subgrade Soil - 5 (estimated) Design Method - CALTRANS 1990

Traffic Index (assumed)	**Flexible Pavements**		**(*) Flexible Pavements**	
	Asphaltic Concrete Thickness (in.)	**Aggregate Base Thickness (in.)**	**Asphaltic Concrete Thickness (in.)**	**Aggregate Base Thickness (in.)**
4.0	3.0	8.0	3.0	4.0
5.0	3.0	9.0	3.0	4.0
6.0	3.5	12.0	3.0	6.0
7.0	3.5	15.0	3.5	8.0
8.0	4.0	18.0	4.0	11.0

(*) Pavement structural section when used in conjunction with 9 inches of lime-treated subgrade soil (3-4% quicklime by weight) with minimum R-Value = 60.

Notes:

1) Asphaltic concrete shall be Caltrans, Type B, ½ inch maximum medium grading, compacted to a minimum of 95% of the 75-blow Marshall density (ASTM D1559).
2) Aggregate base shall conform to Caltrans Class 2 (¾ in. maximum), compacted to a minimum of 95% of ASTM D1557 maximum dry density.
3) Place pavements on 8 inches of moisture conditioned (minimum 4% above optimum) native soil compacted to a minimum of 90% of the maximum dry density determined by ASTM D1557.

Section 5
LIMITATIONS AND ADDITIONAL SERVICES

5.1 Limitations

The recommendations and conclusions within this report are based on current information regarding the proposed residential development located in Imperial, California. The conclusions and recommendations of this report are invalid if:

- Structural loads change from those stated or the structures are relocated.
- The Additional Services section of this report is not followed.
- This report is used for adjacent or other property.
- Changes of grade or groundwater occur between the issuance of this report and construction other than those anticipated in this report.
- Any other change that materially alters the project from that proposed at the time this report was prepared.

Findings and recommendations in this report are based on selected points of field exploration, geologic literature, laboratory testing, and our understanding of the proposed project. Our analysis of data and recommendations presented herein are based on the assumption that soil conditions do not vary significantly from those found at specific exploratory locations. Variations in soil conditions can exist between and beyond the exploration points or groundwater elevations may change. If detected, these conditions may require additional studies, consultation, and possible design revisions.

This report was prepared according to the generally accepted *geotechnical engineering standards of practice* that existed in Imperial County at the time the report was prepared. No express or implied warranties are made in connection with our services. This report should be considered invalid for periods after two years from the report date without a review of the validity of the findings and recommendations by our firm, because of potential changes in the Geotechnical Engineering Standards of Practice.

The client has responsibility to see that all parties to the project including, designer, contractor, and subcontractor are made aware of this entire report. The use of information contained in this report for bidding purposes should be done at the contractor's option and risk.

5.2 Additional Services

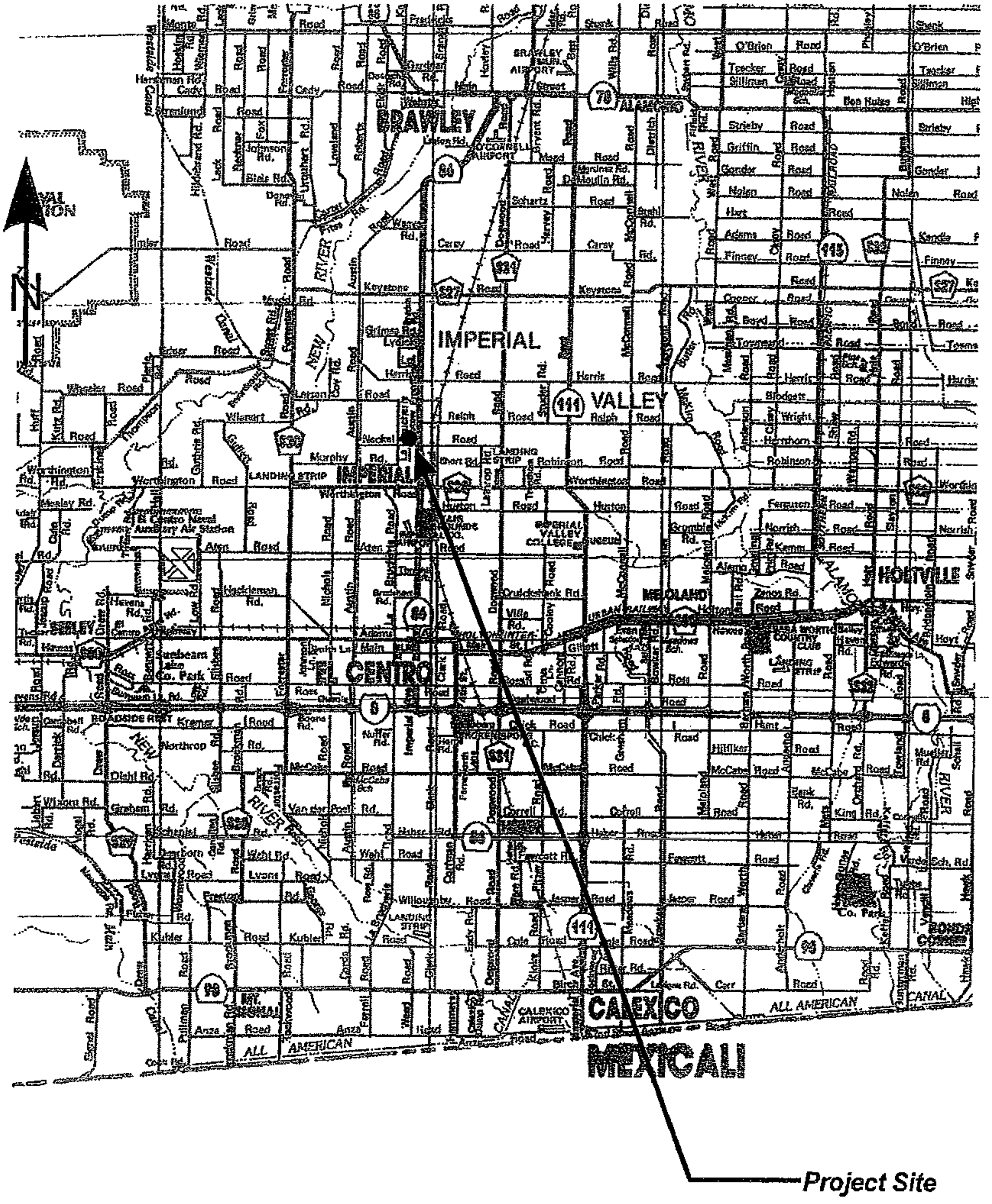
We recommend that Landmark Consultants, Inc. be retained as the geotechnical consultant to provide the tests and observations services during construction. If Landmark Consultants does not provide such services then *the geotechnical engineering firm providing such tests and observations shall become the geotechnical engineer of record and assume responsibility for the project.*

The recommendations presented in this report are based on the assumption that:

- Consultation during development of design and construction documents to check that the geotechnical recommendations are appropriate for the proposed project and that the geotechnical recommendations are properly interpreted and incorporated into the documents.
- Landmark Consultants will have the opportunity to review and comment on the plans and specifications for the project prior to the issuance of such for bidding.
- Continuous observation, inspection, and testing by the geotechnical consultant of record during site clearing, grading, excavation, placement of fills, building pad and subgrade preparation, and backfilling of utility trenches.
- Observation of foundation excavations and reinforcing steel before concrete placement.
- Other consultation as necessary during design and construction.

We emphasize our review of the project plans and specifications to check for compatibility with our recommendations and conclusions. Additional information concerning the scope and cost of these services can be obtained from our office.

APPENDIX A



Project Site

LANDMARK

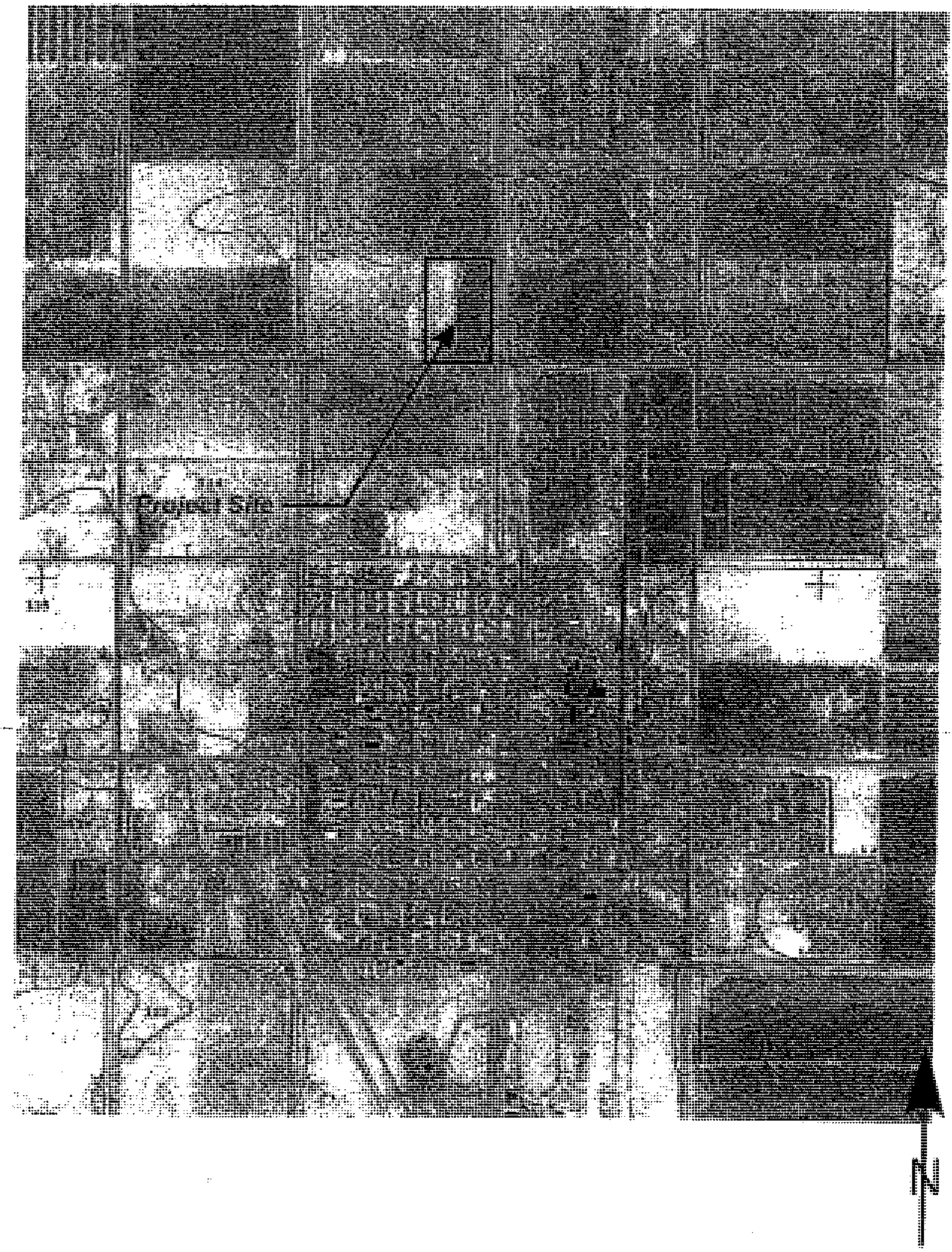
Geo-Engineers and Geologists

a DBE/MBE/SBE Company

Project No.: LE03146

Vicinity Map

Plate A-1



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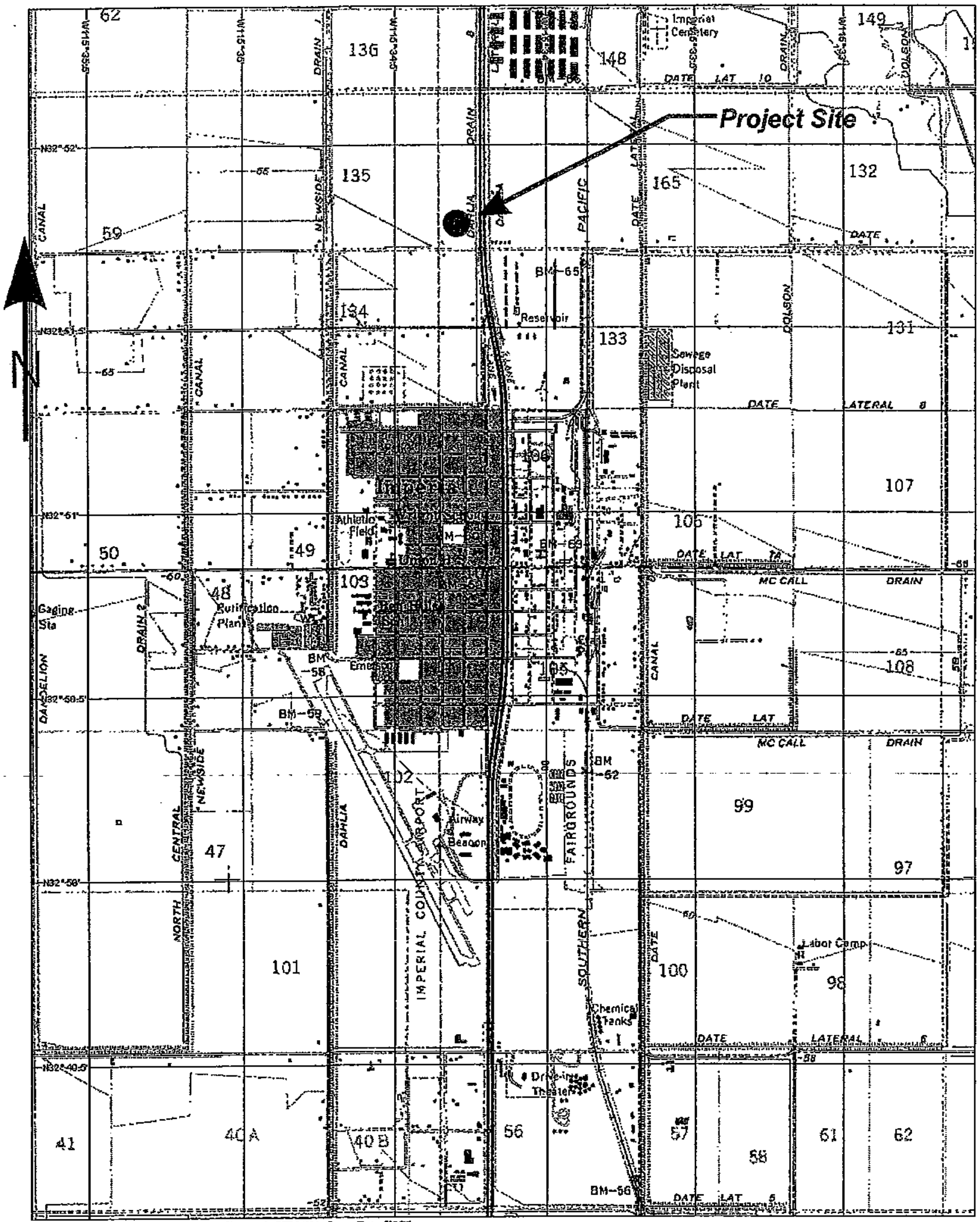
Project No.: LE03146

Soil Survey Map

Plate
A-3



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

742 ft Scale: 1 : 25,000 Detail: 13-0 Datum: WGS84

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Project No.: LE03146

Topographic Map

Plate
A-4

APPENDIX B

CLIENT: Victor Liu
PROJECT: NWC Neckle Road and Hwy 86 -- Imperial, CA
LOCATION: See Site and Exploration Plan

CONE PENETROMETER: HOLGUIN, FAHAN & ASSC. Truck Mounted Electric with 23 ton reaction weight
DATE: 12/01/03

LOG OF CONE SOUNDING DATA CPT-1

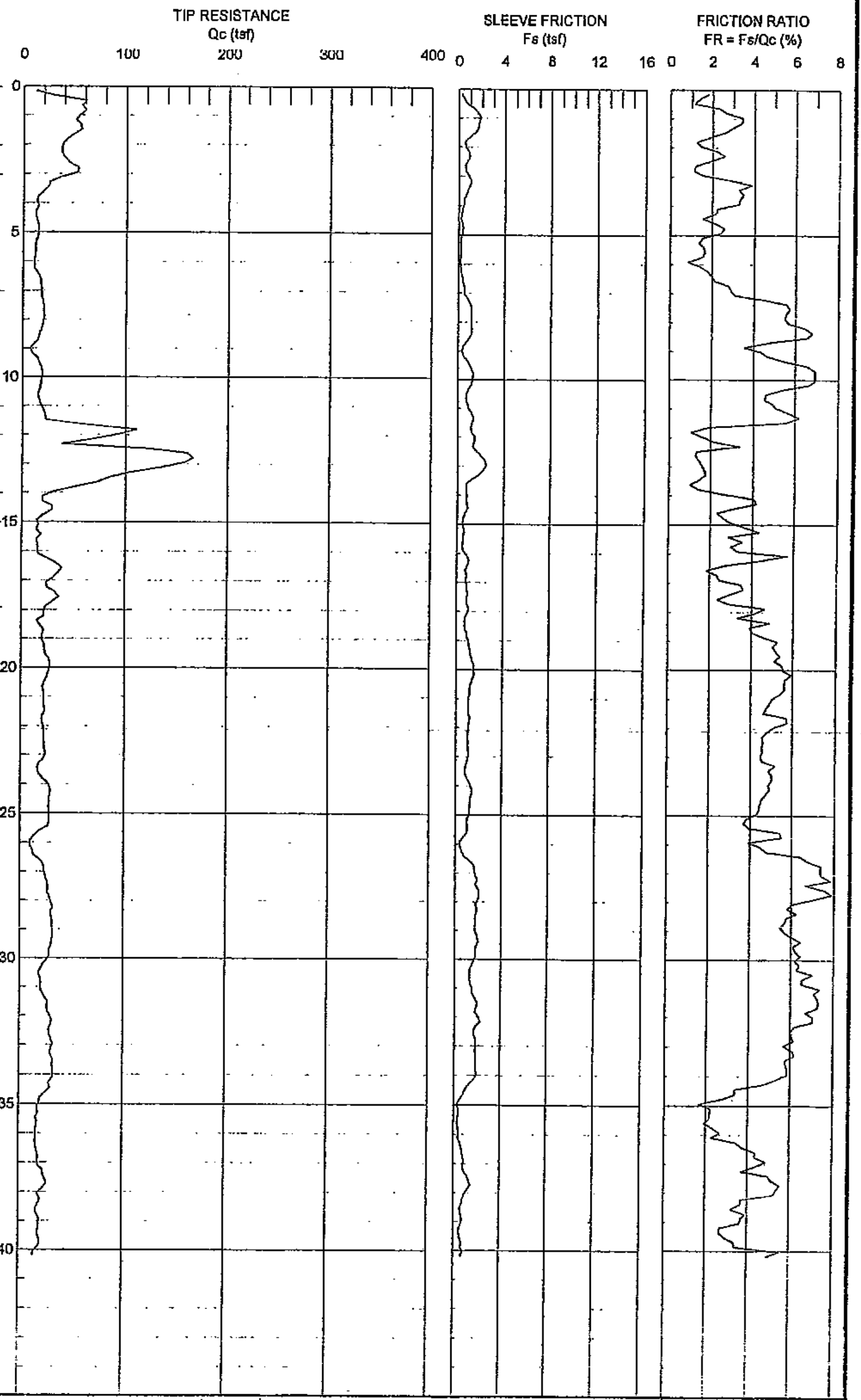
DEPTH (FEET)

INTERPRETED SOIL PROFILE
From Robertson & Campanella (1989)

GROUND EL +/-

Sandy Silt to Clayey Silt	ML	very dense
Sandy Silt to Clayey Silt	" "	dense
Silty Sand to Sandy Silt	SM/ML	dense
Clayey Silt to Silty Clay	ML/CL	very stiff
Clayey Silt to Silty Clay	" "	stiff
Clayey Silt to Silty Clay	" "	stiff
Clayey Silt to Silty Clay	" "	stiff
Clay	CL/CH	very stiff
Clay	" "	stiff
Clay	" "	stiff
Clay	" "	stiff
Clayey Silt to Silty Clay	ML/CL	hard
Silty Sand to Sandy Silt	SM/ML	dense
Silty Sand to Sandy Silt	" "	dense
Clayey Silt to Silty Clay	ML/CL	very stiff
Silty Clay to Clay	CL	stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Clayey Silt to Silty Clay	" "	very stiff
Silty Clay to Clay	CL	very stiff
Clay	CL/CH	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Silty Clay to Clay	CL	very stiff
Clay	CL/CH	very stiff
Clay	" "	stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Clayey Silt to Silty Clay	" "	stiff
Silty Clay to Clay	CL	stiff
Clay	CL/CH	very stiff
Silty Clay to Clay	CL	very stiff
Clayey Silt to Silty Clay	ML/CL	very stiff

End of Sounding @ 40.0 ft



Project No:
LE03146

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Plate
B-1

LANDMARK CONSULTANTS, INC.

CONE PENETROMETER INTERPRETATION (based on Robertson & Campanella, 1989, refer to Key to CPT logs)

Project: NWC Neckle Road and Hwy 86 Project No: LE03146 Date: 12/01/03

CONE SOUNDING: CPT-1

Est. GWT (ft): 10.0

Phi Correlation: 0 0-Schm(78),1-R&C(83),2-PHT(74)

Nk: 17.0

Base Depth meters	Base Depth feet	Avg Tip Qc, tsf	Avg Friction Ratio, %		1 Soil Type	Soil Classification	USC	Density or Consistency	Est. Density (pcf)	Qc to N	SPT N(60)	Cn or Cq	Norm. Qc1n	Est. % Fines	Rel. Dens. Dr (%)	Phi (deg.)	Su (tsf)	OCR
0.15	0.5	35.10	1.43	7	7	Silty Sand to Sandy Silt	SM/ML	very dense	115	4.5	8	2.00	66.4	40	103	42		
0.30	1.0	57.37	2.82	6	6	Sandy Silt to Clayey Silt	ML	very dense	115	3.5	16	2.00	108.4	40	102	42		
0.45	1.5	54.15	2.99	6	6	Sandy Silt to Clayey Silt	ML	very dense	115	3.5	15	2.00	102.4	45	92	41		
0.60	2.0	43.18	1.52	7	7	Silty Sand to Sandy Silt	SM/ML	dense	115	4.5	10	2.00	81.6	35	81	39		
0.75	2.5	38.12	2.24	6	6	Sandy Silt to Clayey Silt	ML	dense	115	3.5	11	2.00	72.1	45	73	38		
0.93	3.0	50.28	1.28	7	7	Silty Sand to Sandy Silt	SM/ML	dense	115	4.5	11	2.00	95.0	30	79	39		
1.08	3.5	28.87	3.35	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	12	2.00		60			1.69	>10
1.23	4.0	15.31	3.36	4	4	Silty Clay to Clay	CL	stiff	125	1.8	9	2.00		80			0.89	>10
1.38	4.5	13.03	1.98	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	5	2.00		70			0.75	>10
1.53	5.0	14.01	2.38	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	6	1.95		75			0.81	>10
1.68	5.5	12.77	1.54	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	5	1.85		65			0.73	>10
1.83	6.0	11.41	1.27	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	5	1.77		65			0.65	>10
1.98	6.5	13.92	1.96	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	6	1.69		70			0.80	>10
2.13	7.0	17.50	2.94	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	7	1.63		75			1.01	>10
2.28	7.5	19.18	5.34	3	3	Clay	CL/CH	very stiff	125	1.3	15	1.57		90			1.10	>10
2.45	8.0	20.03	5.59	3	3	Clay	CL/CH	very stiff	125	1.3	16	1.52		90			1.15	>10
2.60	8.5	17.14	6.59	3	3	Clay	CL/CH	stiff	125	1.3	14	1.47		100			0.98	>10
2.75	9.0	10.76	4.20	3	3	Clay	CL/CH	stiff	125	1.3	9	1.42		100			0.60	7.85
2.90	9.5	13.52	5.56	3	3	Clay	CL/CH	stiff	125	1.3	11	1.38		100			0.76	>10
3.05	10.0	18.43	6.93	3	3	Clay	CL/CH	very stiff	125	1.3	15	1.34		100			1.05	>10
3.20	10.5	16.59	5.55	3	3	Clay	CL/CH	stiff	125	1.3	13	1.33		100			0.94	>10
3.35	11.0	16.40	4.85	3	3	Clay	CL/CH	stiff	125	1.3	13	1.31		100			0.93	>10
3.50	11.5	21.92	5.82	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.29		95			1.25	>10
3.65	12.0	88.08	1.50	7	7	Silty Sand to Sandy Silt	SM/ML	dense	115	4.5	20	1.28	106.5	25	74	38		
3.80	12.5	76.64	2.27	7	7	Silty Sand to Sandy Silt	SM/ML	medium dense	115	4.5	17	1.27	91.7	40	70	38		
3.95	13.0	161.53	1.41	8	8	Sand to Silty Sand	SP/SM	very dense	115	5.5	29	1.25	191.4	20	92	41		
4.13	13.5	107.80	1.62	8	8	Sand to Silty Sand	SP/SM	dense	115	5.5	20	1.24	126.5	25	79	39		
4.28	14.0	52.32	1.68	7	7	Silty Sand to Sandy Silt	SM/ML	medium dense	115	4.5	12	1.23	60.8	40	58	36		
4.43	14.5	22.67	3.82	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	13	1.22		85			1.29	>10
4.58	15.0	21.27	2.63	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	9	1.20		80			1.21	>10
4.73	15.5	16.01	3.62	4	4	Silty Clay to Clay	CL	stiff	125	1.8	9	1.19		100			0.90	>10
4.88	16.0	14.79	3.88	4	4	Silty Clay to Clay	CL	stiff	125	1.8	8	1.18		100			0.83	9.59
5.03	16.5	32.30	2.94	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	13	1.17		70			1.85	>10
5.18	17.0	30.12	2.76	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	12	1.16		70			1.73	>10
5.33	17.5	31.27	2.98	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	13	1.15		70			1.79	>10
5.48	18.0	25.22	3.92	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	14	1.14		90			1.44	>10
5.65	18.5	18.31	4.06	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	10	1.13		100			1.03	>10
5.80	19.0	20.77	4.64	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.12		100			1.17	>10
5.95	19.5	22.93	5.20	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.11		100			1.30	>10
6.10	20.0	27.56	5.38	3	3	Clay	CL/CH	very stiff	125	1.3	22	1.10		100			1.57	>10
6.25	20.5	24.56	5.72	3	3	Clay	CL/CH	very stiff	125	1.3	20	1.09		100			1.39	>10
6.40	21.0	21.76	5.34	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.08		100			1.23	>10
6.55	21.5	22.77	4.75	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.07		100			1.28	>10
6.70	22.0	20.85	5.53	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.06		100			1.17	8.85
6.85	22.5	22.39	4.66	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.05		100			1.26	>10
7.00	23.0	23.35	4.53	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	13	1.04		100			1.32	>10
7.18	23.5	18.63	4.87	3	3	Clay	CL/CH	very stiff	125	1.3	15	1.03		100			1.04	6.65
7.33	24.0	21.57	4.98	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.03		100			1.21	8.41
7.48	24.5	28.29	4.74	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	16	1.02		100			1.60	>10
7.63	25.0	27.50	4.42	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	16	1.01		100			1.56	>10
7.78	25.5	27.12	3.85	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	11	1.00		95			1.53	>10
7.93	26.0	13.98	4.96	3	3	Clay	CL/CH	stiff	125	1.3	11	1.00		100			0.76	3.74
8.08	26.5	12.85	5.64	3	3	Clay	CL/CH	stiff	125	1.3	10	0.99		100			0.69	3.28
8.23	27.0	22.88	7.38	3	3	Clay	CL/CH	very stiff	125	1.3	18	0.98		100			1.28	8.00
8.38	27.5	25.92	7.37	3	3	Clay	CL/CH	very stiff	125	1.3	21	0.97		100			1.48	>10
8.53	28.0	28.16	6.96	3	3	Clay	CL/CH	very stiff	125	1.3	23	0.97		100			1.59	>10
8.68	28.5	30.67	5.94	3	3	Clay	CL/CH	very stiff	125	1.3	25	0.96		100			1.74	>10
8.85	29.0	31.26	5.62	3	3	Clay	CL/CH	very stiff	125	1.3	25	0.95		100			1.77	>10
9.00	29.5	31.33	6.19	3	3	Clay	CL/CH	very stiff	125	1.3	25	0.95		100			1.77	>10
9.15	30.0	27.85	6.27	3	3	Clay	CL/CH	very stiff	125	1.3	22	0.94		100			1.57	>10

LANDMARK CONSULTANTS, INC.

CONE PENETROMETER INTERPRETATION (based on Robertson & Campanella, 1989, refer to Key to CPT logs)

Project: NWC Neckle Road and Hwy 86 Project No: LE03146 Date: 12/01/03

CONE SOUNDING: CPT-1

Est. GWT (ft): 10.0

Phi Correlation: 0 0-Schm(78),1-R&C(83),2-PHT(74)

Nk: 17.0

Base Depth meters	Base Depth feet	Avg Tip Qc, tsf	Avg Friction Ratio, %		1 Soil Type	Soil Classification	USC	Density or Consistency	Est. Density (pcf)	Qc to N	SPT N(60)	Cn or Cq	Norm. Qc1n	Est. % Fines	Rel. Dens. Dr (%)	Phi (deg.)	Su (tsf)	OCR
9.30	30.5	20.77	6.56	3	3	Clay	CL/CH	very stiff	125	1.3	17	0.94		100			1.15	5.76
9.45	31.0	20.31	6.79	3	3	Clay	CL/CH	very stiff	125	1.3	16	0.93		100			1.12	5.42
9.60	31.5	24.05	7.22	3	3	Clay	CL/CH	very stiff	125	1.3	19	0.92		100			1.34	7.00
9.75	32.0	27.29	7.00	3	3	Clay	CL/CH	very stiff	125	1.3	22	0.92		100			1.53	8.56
9.90	32.5	29.68	6.42	3	3	Clay	CL/CH	very stiff	125	1.3	24	0.91		100			1.67	>10
10.05	33.0	30.70	5.95	3	3	Clay	CL/CH	very stiff	125	1.3	25	0.91		100			1.73	>10
10.20	33.5	30.74	6.00	3	3	Clay	CL/CH	very stiff	125	1.3	25	0.90		100			1.73	>10
10.38	34.0	32.44	5.84	3	3	Clay	CL/CH	very stiff	125	1.3	26	0.90		100			1.83	>10
10.53	34.5	30.05	4.46	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	17	0.89		100			1.69	>10
10.68	35.0	21.38	2.62	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	9	0.89		100			1.18	9.19
10.83	35.5	17.37	2.19	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	0.88		100			0.94	6.21
10.98	36.0	16.64	2.32	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	0.88		100			0.90	5.65
11.13	36.5	16.54	3.47	4	4	Silty Clay to Clay	CL	stiff	125	1.8	9	0.87		100			0.89	4.09
11.28	37.0	18.74	4.53	3	3	Clay	CL/CH	very stiff	125	1.3	15	0.87		100			1.02	3.83
11.43	37.5	23.82	4.63	3	3	Clay	CL/CH	very stiff	125	1.3	19	0.86		100			1.32	5.53
11.58	38.0	22.31	5.38	3	3	Clay	CL/CH	very stiff	125	1.3	18	0.86		100			1.23	4.89
11.73	38.5	19.11	3.54	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	11	0.85		100			1.04	4.78
11.88	39.0	18.90	3.76	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	11	0.85		100			1.03	4.57
12.05	39.5	19.21	2.78	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	8	0.84		100			1.04	6.32
12.20	40.0	18.34	4.12	4	4	Silty Clay to Clay	CL	stiff	125	1.8	10	0.84		100			0.99	4.28

CLIENT: Victor Liu

PROJECT: NWC Neckle Road and Hwy 86 -- Imperial, CA

LOCATION: See Site and Exploration Plan

CONE PENETROMETER: HOLGUIN, FAHAN & ASSC. Truck Mounted Electric with 23 ton reaction weight

DATE: 12/01/03

LOG OF CONE SOUNDING DATA CPT-2

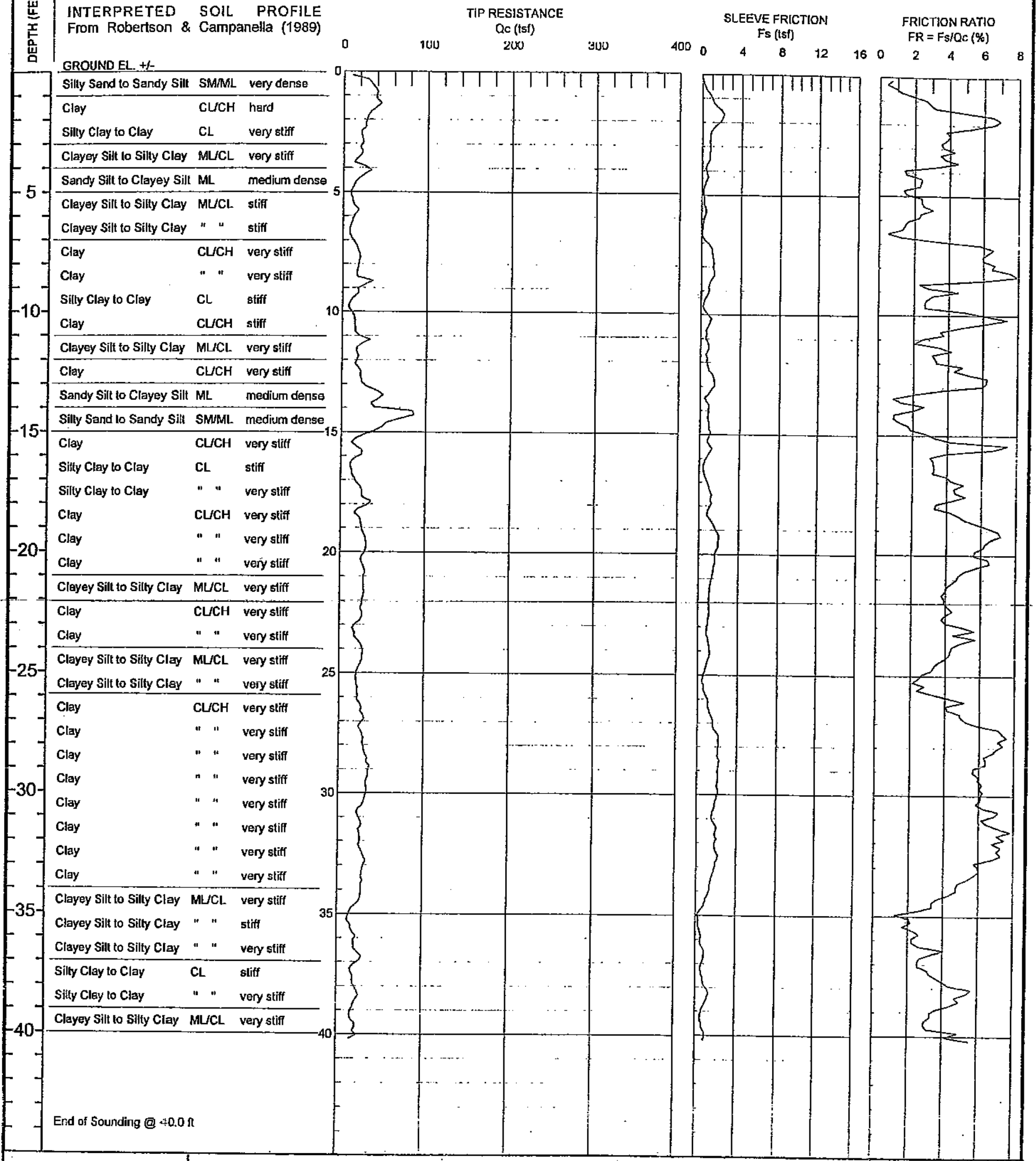
DEPTH (FEET)

INTERPRETED SOIL PROFILE
From Robertson & Campanella (1989)

GROUND EL. +/-

Silty Sand to Sandy Silt	SM/ML	very dense
Clay	CL/CH	hard
Silty Clay to Clay	CL	very stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Sandy Silt to Clayey Silt	ML	medium dense
Clayey Silt to Silty Clay	ML/CL	stiff
Clayey Silt to Silty Clay	" "	stiff
Clay	CL/CH	very stiff
Clay	" "	very stiff
Silty Clay to Clay	CL	stiff
Clay	CL/CH	stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Clay	CL/CH	very stiff
Sandy Silt to Clayey Silt	ML	medium dense
Silty Sand to Sandy Silt	SM/ML	medium dense
Clay	CL/CH	very stiff
Silty Clay to Clay	CL	stiff
Silty Clay to Clay	" "	very stiff
Clay	CL/CH	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Clay	CL/CH	very stiff
Clay	" "	very stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Clayey Silt to Silty Clay	" "	very stiff
Clay	CL/CH	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Clayey Silt to Silty Clay	" "	stiff
Clayey Silt to Silty Clay	" "	very stiff
Silty Clay to Clay	CL	stiff
Silty Clay to Clay	" "	very stiff
Clayey Silt to Silty Clay	ML/CL	very stiff

End of Sounding @ 40.0 ft



Project No:
LE03146

LANDMARK
Geo-Engineers and Geologists
a DBE/MBE/SBE Company

Plate
B-2

LANDMARK CONSULTANTS, INC.

CONE PENETROMETER INTERPRETATION (based on Robertson & Campanella, 1989, refer to Key to CPT logs)

Project: NWC Neckle Road and Hwy 86 Project No: LE03146 Date: 12/01/03

CONE SOUNDING: CPT-2

Est. GWT (ft): 10.0

Phi Correlation: 0 0-Schm(78),1-R&C(83),2-PHT(74)

Base Depth meters	Base Depth feet	Avg Tip Qc, tsf	Avg Friction Ratio, %		1 Soil Type	Soil Classification	USC	Density or Consistency	Est. Density (pcf)	Qc to N	SPT N(60)	Cn or Cq	Norm. Qc1n	Est. % Fines	Rel. Dens. Dr (%)	Nk: Phi (deg.)	17.0 Su (tsf)	OCR
0.15	0.5	24.58	0.68	7	7	Silty Sand to Sandy Silt	SM/ML	very dense	115	4.5	5	2.00	46.5	35	93	41		
0.30	1.0	38.81	1.94	6	6	Sandy Silt to Clayey Silt	ML	dense	115	3.5	11	2.00	73.0	40	90	41		
0.45	1.5	41.20	3.65	5	5	Clayey Silt to Silty Clay	ML/CL	hard	120	2.5	18	2.00		55			2.42	>10
0.60	2.0	30.26	6.68	3	3	Clay	CL/CH	very stiff	125	1.3	24	2.00		80			1.77	>10
0.75	2.5	24.72	4.39	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	14	2.00		75			1.45	>10
0.93	3.0	22.33	3.68	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	13	2.00		70			1.30	>10
1.08	3.5	21.18	3.84	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	12	2.00		75			1.23	>10
1.23	4.0	18.54	3.08	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	7	2.00		70			1.08	>10
1.38	4.5	25.39	2.10	6	6	Sandy Silt to Clayey Silt	ML	medium dense	115	3.5	7	2.00	48.0	55	51	35		
1.53	5.0	11.95	1.73	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	5	1.92		70			0.69	>10
1.68	5.5	11.51	2.60	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	5	1.83		85			0.66	>10
1.83	6.0	15.02	2.07	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	6	1.75		70			0.86	>10
1.98	6.5	9.18	1.09	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	4	1.68		70			0.52	>10
2.13	7.0	10.65	3.48	4	4	Silty Clay to Clay	CL	stiff	125	1.8	6	1.61		95			0.60	>10
2.28	7.5	17.94	6.26	3	3	Clay	CL/CH	very stiff	125	1.3	14	1.55		95			1.03	>10
2.45	8.0	19.65	6.39	3	3	Clay	CL/CH	very stiff	125	1.3	16	1.50		95			1.13	>10
2.60	8.5	17.27	7.19	3	3	Clay	CL/CH	stiff	125	1.3	14	1.45		100			0.99	>10
2.75	9.0	26.91	3.24	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	11	1.41		65			1.55	>10
2.90	9.5	14.74	2.81	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	6	1.37		85			0.83	>10
3.05	10.0	9.22	4.57	3	3	Clay	CL/CH	stiff	125	1.3	7	1.34		100			0.51	4.89
3.20	10.5	14.71	6.06	3	3	Clay	CL/CH	stiff	125	1.3	12	1.32		100			0.83	>10
3.35	11.0	16.81	3.26	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	1.30		85			0.95	>10
3.50	11.5	24.69	3.23	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	10	1.29		75			1.41	>10
3.65	12.0	17.96	3.23	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	7	1.27		85			1.02	>10
3.80	12.5	18.95	4.79	3	3	Clay	CL/CH	very stiff	125	1.3	15	1.26		95			1.08	>10
3.95	13.0	23.03	6.16	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.25		100			1.31	>10
4.13	13.5	41.43	2.16	6	6	Sandy Silt to Clayey Silt	ML	medium dense	115	3.5	12	1.23	48.3	50	51	35		
4.28	14.0	38.93	2.01	6	6	Sandy Silt to Clayey Silt	ML	medium dense	115	3.5	11	1.22	44.9	50	49	35		
4.43	14.5	79.98	1.00	8	8	Sand to Silty Sand	SP/SM	medium dense	115	5.5	15	1.21	91.5	25	70	38		
4.58	15.0	47.56	2.12	6	6	Sandy Silt to Clayey Silt	ML	medium dense	115	3.5	14	1.20	53.9	50	54	36		
4.73	15.5	19.13	4.98	3	3	Clay	CL/CH	very stiff	125	1.3	15	1.19		100			1.08	>10
4.88	16.0	21.15	4.22	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	12	1.18		95			1.20	>10
5.03	16.5	12.20	3.22	4	4	Silty Clay to Clay	CL	stiff	125	1.8	7	1.16		100			0.67	6.32
5.18	17.0	15.45	4.40	3	3	Clay	CL/CH	stiff	125	1.3	12	1.15		100			0.86	7.00
5.33	17.5	23.91	4.65	3	3	Clay	CL/CH	very stiff	125	1.3	19	1.14		95			1.36	>10
5.48	18.0	31.62	3.66	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	13	1.13		80			1.81	>10
5.65	18.5	19.55	4.63	3	3	Clay	CL/CH	very stiff	125	1.3	16	1.12		100			1.10	>10
5.80	19.0	24.88	6.36	3	3	Clay	CL/CH	very stiff	125	1.3	20	1.11		100			1.41	>10
5.95	19.5	29.40	6.65	3	3	Clay	CL/CH	very stiff	125	1.3	24	1.10		100			1.88	>10
6.10	20.0	30.43	5.79	3	3	Clay	CL/CH	very stiff	125	1.3	24	1.09		95			1.74	>10
6.25	20.5	25.72	6.21	3	3	Clay	CL/CH	very stiff	125	1.3	21	1.08		100			1.46	>10
6.40	21.0	29.05	4.78	3	3	Clay	CL/CH	very stiff	125	1.3	23	1.07		95			1.65	>10
6.55	21.5	28.39	4.10	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	16	1.06		90			1.61	>10
6.70	22.0	27.86	2.73	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	11	1.05		80			1.58	>10
6.85	22.5	22.51	5.18	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.05		100			1.27	>10
7.00	23.0	22.89	4.24	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	13	1.04		100			1.29	>10
7.18	23.5	16.61	5.27	3	3	Clay	CL/CH	stiff	125	1.3	13	1.03		100			0.92	5.42
7.33	24.0	24.49	4.52	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	14	1.02		100			1.38	>10
7.48	24.5	27.28	3.91	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	16	1.01		95			1.54	>10
7.63	25.0	22.30	3.07	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	9	1.01		95			1.25	>10
7.78	25.5	19.57	2.48	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	8	1.00		95			1.09	>10
7.93	26.0	21.34	3.27	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	9	0.99		100			1.19	>10
8.08	26.5	24.39	4.53	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	14	0.99		100			1.37	>10
8.23	27.0	28.21	5.33	3	3	Clay	CL/CH	very stiff	125	1.3	23	0.98		100			1.59	>10
8.38	27.5	25.55	7.32	3	3	Clay	CL/CH	very stiff	125	1.3	20	0.97		100			1.44	9.59
8.53	28.0	29.05	7.13	3	3	Clay	CL/CH	very stiff	125	1.3	23	0.97		100			1.64	>10
8.68	28.5	31.77	6.48	3	3	Clay	CL/CH	very stiff	125	1.3	25	0.96		100			1.80	>10
8.85	29.0	34.88	5.89	3	3	Clay	CL/CH	very stiff	125	1.3	28	0.95		100			1.98	>10
9.00	29.5	33.91	6.01	3	3	Clay	CL/CH	very stiff	125	1.3	27	0.95		100			1.93	>10
9.15	30.0	32.99	6.09	3	3	Clay	CL/CH	very stiff	125	1.3	26	0.94		100			1.87	>10

LANDMARK CONSULTANTS, INC.

CONE PENETROMETER INTERPRETATION (based on Robertson & Campanella, 1989, refer to Key to CPT logs)

Project: NWC Neckle Road and Hwy 86 Project No: LE03146 Date: 12/01/03

CONE SOUNDING: CPT-2

Est. GWT (ft): 10.0

Phi Correlation: 0 0-Schm(78),1-R&C(83),2-PHT(74)

Base Depth meters	Base Depth feet	Avg Tip Qc, tsf	Avg Friction Ratio, %		1 Soil Type	Soil Classification	USC	Density or Consistency	Est. Density (pcf)	Qc to N	SPT N(60)	Cn or Cq	Norm. Qc1n	Est. % Fines	Rel. Dens. Dr (%)	Nk: Phi (deg.)	17.0 Su (tsf)	OCR
9.30	30.5	30.12	6.03	3	3	Clay	CL/CH	very stiff	125	1.3	24	0.93		100			1.70	>10
9.45	31.0	23.03	6.72	3	3	Clay	CL/CH	very stiff	125	1.3	18	0.93		100			1.28	6.65
9.60	31.5	26.22	7.09	3	3	Clay	CL/CH	very stiff	125	1.3	21	0.92		100			1.47	8.14
9.75	32.0	25.91	7.10	3	3	Clay	CL/CH	very stiff	125	1.3	21	0.92		100			1.45	7.85
9.90	32.5	26.66	7.20	3	3	Clay	CL/CH	very stiff	125	1.3	21	0.91		100			1.49	8.00
10.05	33.0	31.50	6.16	3	3	Clay	CL/CH	very stiff	125	1.3	25	0.91		100			1.78	>10
10.20	33.5	28.73	5.71	3	3	Clay	CL/CH	very stiff	125	1.3	23	0.90		100			1.61	8.85
10.38	34.0	28.38	4.77	3	3	Clay	CL/CH	very stiff	125	1.3	23	0.89		100			1.59	8.41
10.53	34.5	27.01	3.75	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	11	0.89		100			1.51	>10
10.68	35.0	16.98	2.38	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	0.88		100			0.92	6.10
10.83	35.5	13.39	1.96	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	5	0.88		100			0.71	4.00
10.98	36.0	18.69	2.38	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	7	0.88		100			1.02	6.88
11.13	36.5	20.56	3.05	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	8	0.87		100			1.13	8.00
11.28	37.0	25.40	2.60	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	10	0.87		100			1.41	>10
11.43	37.5	16.99	3.33	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	0.86		100			0.92	5.53
11.58	38.0	19.47	4.69	3	3	Clay	CL/CH	very stiff	125	1.3	16	0.86		100			1.06	3.91
11.73	38.5	24.09	5.01	3	3	Clay	CL/CH	very stiff	125	1.3	19	0.85		100			1.33	5.42
11.88	39.0	18.20	3.79	4	4	Silty Clay to Clay	CL	stiff	125	1.8	10	0.85		100			0.98	4.37
12.05	39.5	17.81	3.08	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	0.84		100			0.96	5.65
12.20	40.0	21.48	4.05	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	12	0.84		100			1.18	5.53

CLIENT: Victor Liu
PROJECT: NWC Neckle Road and Hwy 86 -- Imperial, CA
LOCATION: See Site and Exploration Plan

CONE PENETROMETER: HOLGUIN, FAHAN & ASSC. Truck Mounted Electric with 23 ton reaction weight
DATE: 12/01/03

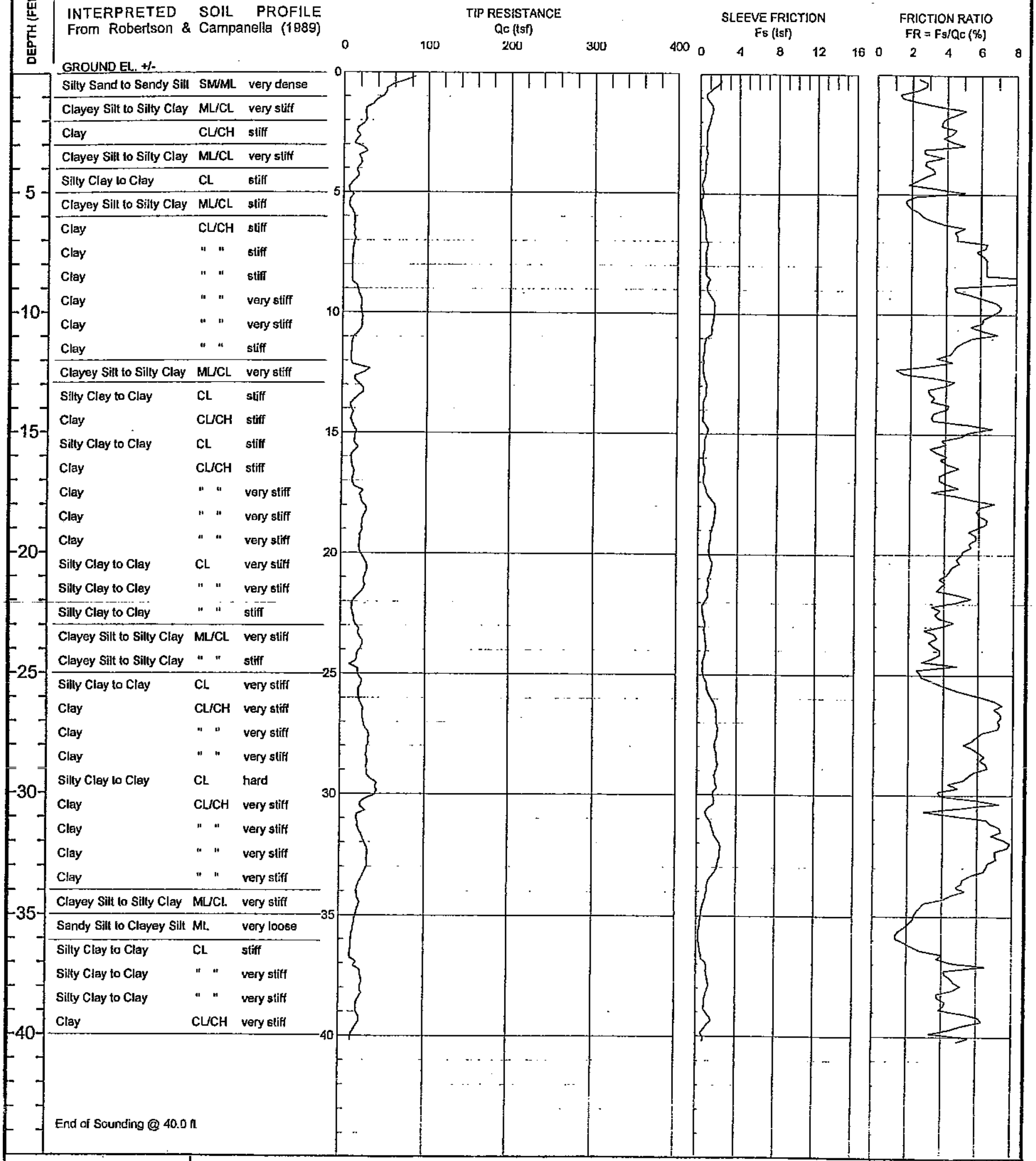
LOG OF CONE SOUNDING DATA CPT-3

DEPTH (FEET)

INTERPRETED SOIL PROFILE
From Robertson & Campanella (1989)

GROUND EL. +/-		
Silty Sand to Sandy Silt	SM/ML	very dense
Clayey Silt to Silty Clay	ML/CL	very stiff
Clay	CL/CH	stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Silty Clay to Clay	CL	stiff
Clayey Silt to Silty Clay	ML/CL	stiff
Clay	CL/CH	stiff
Clay	" "	stiff
Clay	" "	stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Silty Clay to Clay	CL	stiff
Clay	CL/CH	stiff
Silty Clay to Clay	CL	stiff
Clay	CL/CH	stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Silty Clay to Clay	CL	very stiff
Silty Clay to Clay	" "	very stiff
Silty Clay to Clay	" "	stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Clayey Silt to Silty Clay	" "	stiff
Silty Clay to Clay	CL	very stiff
Clay	CL/CH	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Silty Clay to Clay	CL	hard
Clay	CL/CH	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Sandy Silt to Clayey Silt	ML	very loose
Silty Clay to Clay	CL	stiff
Silty Clay to Clay	" "	very stiff
Silty Clay to Clay	" "	very stiff
Clay	CL/CH	very stiff

End of Sounding @ 40.0 ft.



Project No:
LE03146

LANDMARK
Geo-Engineers and Geologists
a DBE/MBE/SBE Company

Plate
B-3

LANDMARK CONSULTANTS, INC.

CONE PENETROMETER INTERPRETATION (based on Robertson & Campanella, 1989, refer to Key to CPT logs)

Project: NWC Neckle Road and Hwy 86 Project No: LE03146 Date: 12/01/03

CONE SOUNDING: CPT-3

Est. GWT (ft): 10.0

Phi Correlation: 0 0-Schm(78),1-R&C(83),2-PHT(74)

Nk: 17.0

Base Depth meters	Base Depth feet	Avg Tip Qc, tsf	Avg Friction Ratio, %		1 Soil Type	Soil Classification	USC	Density or Consistency	Est. Density (pcf)	Qc to N	SPT N(60)	Cn or Cq	Norm. Qc1n	Est. % Fines	Rel. Dens. Dr (%)	Phi (deg.)	Su (tsf)	OCR
0.15	0.5	71.26	2.68	6	6	Sandy Silt to Clayey Silt	ML	very dense	115	3.5	20	2.00	134.7	35	124	45		
0.30	1.0	48.81	1.68	7	7	Silty Sand to Sandy Silt	SM/ML	very dense	115	4.5	11	2.00	92.3	35	97	42		
0.45	1.5	32.83	3.70	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	13	2.00		60			1.93	>10
0.60	2.0	26.23	4.06	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	15	2.00		70			1.54	>10
0.75	2.5	18.22	4.17	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	10	2.00		80			1.06	>10
0.93	3.0	15.63	4.38	3	3	Clay	CL/CH	stiff	125	1.3	13	2.00		90			0.91	>10
1.08	3.5	23.15	3.06	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	9	2.00		65			1.35	>10
1.23	4.0	19.69	2.92	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	8	2.00		70			1.14	>10
1.38	4.5	16.07	2.77	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	6	2.00		75			0.93	>10
1.53	5.0	7.68	3.42	3	3	Clay	CL/CH	firm	125	1.3	6	1.92		100			0.43	>10
1.68	5.5	8.46	1.89	5	5	Clayey Silt to Silty Clay	ML/CL	firm	120	2.5	3	1.83		85			0.48	>10
1.83	6.0	12.22	2.71	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	5	1.74		85			0.70	>10
1.98	6.5	13.41	4.46	3	3	Clay	CL/CH	stiff	125	1.3	11	1.67		95			0.77	>10
2.13	7.0	13.44	5.19	3	3	Clay	CL/CH	stiff	125	1.3	11	1.61		100			0.77	>10
2.28	7.5	11.86	6.03	3	3	Clay	CL/CH	stiff	125	1.3	9	1.55		100			0.67	>10
2.45	8.0	10.81	6.33	3	3	Clay	CL/CH	stiff	125	1.3	9	1.50		100			0.61	9.59
2.60	8.5	10.81	7.45	3	3	Clay	CL/CH	stiff	125	1.3	9	1.45		100			0.61	8.41
2.75	9.0	15.10	5.73	3	3	Clay	CL/CH	stiff	125	1.3	12	1.41		100			0.86	>10
2.90	9.5	20.66	6.21	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.37		95			1.18	>10
3.05	10.0	21.66	6.93	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.33		100			1.24	>10
3.20	10.5	23.06	5.89	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.31		95			1.32	>10
3.35	11.0	17.17	6.20	3	3	Clay	CL/CH	stiff	125	1.3	14	1.30		100			0.97	>10
3.50	11.5	11.11	4.66	3	3	Clay	CL/CH	stiff	125	1.3	9	1.28		100			0.62	5.76
3.65	12.0	9.93	4.03	3	3	Clay	CL/CH	stiff	125	1.3	8	1.27		100			0.55	4.68
3.80	12.5	23.52	1.89	6	6	Sandy Silt to Clayey Silt	ML	loose	115	3.5	7	1.25	27.9	65	35	33		
3.95	13.0	16.25	3.93	4	4	Silty Clay to Clay	CL	stiff	125	1.8	9	1.24		100			0.92	>10
4.13	13.5	22.62	3.14	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	9	1.23		80			1.29	>10
4.28	14.0	11.42	3.81	3	3	Clay	CL/CH	stiff	125	1.3	9	1.21		100			0.63	5.10
4.43	14.5	11.69	3.27	4	4	Silty Clay to Clay	CL	stiff	125	1.8	7	1.20		100			0.64	6.54
4.58	15.0	14.43	5.78	3	3	Clay	CL/CH	stiff	125	1.3	12	1.19		100			0.80	6.88
4.73	15.5	14.70	4.27	3	3	Clay	CL/CH	stiff	125	1.3	12	1.18		100			0.82	6.88
4.88	16.0	13.95	3.62	4	4	Silty Clay to Clay	CL	stiff	125	1.8	8	1.16		100			0.77	8.00
5.03	16.5	13.08	4.35	3	3	Clay	CL/CH	stiff	125	1.3	10	1.15		100			0.72	5.31
5.18	17.0	13.27	3.82	4	4	Silty Clay to Clay	CL	stiff	125	1.8	8	1.14		100			0.73	6.86
5.33	17.5	20.75	4.28	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	12	1.13		100			1.17	>10
5.48	18.0	25.52	6.17	3	3	Clay	CL/CH	very stiff	125	1.3	20	1.12		100			1.45	>10
5.65	18.5	27.57	6.10	3	3	Clay	CL/CH	very stiff	125	1.3	22	1.11		100			1.57	>10
5.80	19.0	24.42	5.94	3	3	Clay	CL/CH	very stiff	125	1.3	20	1.10		100			1.38	>10
5.95	19.5	21.87	5.69	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.09		100			1.23	>10
6.10	20.0	21.85	5.21	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.08		100			1.23	>10
6.25	20.5	28.99	4.69	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	17	1.07		95			1.65	>10
6.40	21.0	29.34	4.06	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	17	1.06		90			1.67	>10
6.55	21.5	27.44	3.82	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	11	1.05		90			1.56	>10
6.70	22.0	18.09	4.99	3	3	Clay	CL/CH	very stiff	125	1.3	14	1.05		100			1.01	6.54
6.65	22.5	13.46	3.53	4	4	Silty Clay to Clay	CL	stiff	125	1.8	8	1.04		100			0.73	5.10
7.00	23.0	16.32	4.07	4	4	Silty Clay to Clay	CL	stiff	125	1.8	9	1.03		100			0.90	6.86
7.18	23.5	21.32	3.32	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	9	1.02		100			1.19	>10
7.33	24.0	24.79	3.44	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	10	1.01		95			1.40	>10
7.48	24.5	18.79	3.32	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	8	1.01		100			1.04	>10
7.63	25.0	17.07	3.31	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	1.00		100			0.94	9.59
7.78	25.5	23.82	3.34	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	10	0.99		95			1.34	>10
7.93	26.0	21.23	5.37	3	3	Clay	CL/CH	very stiff	125	1.3	17	0.99		100			1.18	7.13
8.08	26.5	24.92	7.14	3	3	Clay	CL/CH	very stiff	125	1.3	20	0.98		100			1.40	9.39
8.23	27.0	26.91	7.24	3	3	Clay	CL/CH	very stiff	125	1.3	22	0.97		100			1.52	>10
8.38	27.5	31.91	6.45	3	3	Clay	CL/CH	very stiff	125	1.3	26	0.97		100			1.81	>10
8.53	28.0	32.56	5.52	3	3	Clay	CL/CH	very stiff	125	1.3	26	0.96		100			1.85	>10
8.68	28.5	31.23	6.17	3	3	Clay	CL/CH	very stiff	125	1.3	25	0.95		100			1.77	>10
8.85	29.0	31.59	6.27	3	3	Clay	CL/CH	very stiff	125	1.3	25	0.95		100			1.79	>10
9.00	29.5	36.97	4.99	3	3	Clay	CL/CH	hard	125	1.3	30	0.94		95			2.10	>10
9.15	30.0	42.25	4.16	5	5	Clayey Silt to Silty Clay	ML/CL	hard	120	2.5	17	0.93		85			2.41	>10

LANDMARK CONSULTANTS, INC.

CONE PENETROMETER INTERPRETATION (based on Robertson & Campanella, 1989, refer to Key to CPT logs)

Project: NWC Neckle Road and Hwy 86 Project No: LE03146 Date: 12/01/03

CONE SOUNDING: CPT-3

Est. GWT (ft): 10.0

Phi Correlation: 0 0-Schm(78),1-R&C(63),2-PHT(74)

Base Depth meters	Base Depth feet	Avg Tip Qc, tsf	Avg Friction Ratio, %		1 Soil Type	Soil Classification	USC	Density or Consistency	Est. Density (pcf)	Qc to N	SPT N(60)	Cn or Cq	Norm. Qc1n	Est. % Fines	Rel. Dens. Dr (%)	Nk: Phi (deg.)	17.0 Su (tsf)	OCR
9.30	30.5	26.20	6.08	3	3	Clay	CL/CH	very stiff	125	1.3	21	0.93		100			1.47	8.41
9.45	31.0	23.20	4.66	3	3	Clay	CL/CH	very stiff	125	1.3	19	0.92		100			1.29	6.54
9.60	31.5	21.50	7.12	3	3	Clay	CL/CH	very stiff	125	1.3	17	0.92		100			1.19	5.76
9.75	32.0	27.50	7.38	3	3	Clay	CL/CH	very stiff	125	1.3	22	0.91		100			1.54	8.56
9.90	32.5	32.39	7.27	3	3	Clay	CL/CH	very stiff	125	1.3	26	0.91		100			1.83	>10
10.05	33.0	32.20	6.73	3	3	Clay	CL/CH	very stiff	125	1.3	28	0.90		100			1.82	>10
10.20	33.5	28.02	5.73	3	3	Clay	CL/CH	very stiff	125	1.3	22	0.90		100			1.57	8.27
10.38	34.0	21.47	5.07	3	3	Clay	CL/CH	very stiff	125	1.3	17	0.89		100			1.18	5.21
10.53	34.5	21.99	3.85	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	13	0.88		100			1.21	6.76
10.68	35.0	20.79	2.56	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	8	0.88		100			1.14	8.56
10.83	35.5	17.42	2.12	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	0.88		100			0.94	6.10
10.98	36.0	15.08	1.41	6	6	Sandy Silt to Clayey Silt	ML	very loose	115	3.5	4	0.87	12.4	100	11	30		
11.13	36.5	13.87	2.75	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	5	0.87		100			0.72	3.91
11.28	37.0	16.76	4.91	3	3	Clay	CL/CH	stiff	125	1.3	13	0.86		100			0.90	3.21
11.43	37.5	25.28	4.29	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	14	0.86		100			1.40	7.85
11.58	38.0	25.93	4.84	3	3	Clay	CL/CH	very stiff	125	1.3	21	0.85		100			1.44	6.10
11.73	38.5	24.11	3.92	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	14	0.85		100			1.33	6.88
11.88	39.0	20.71	4.41	3	3	Clay	CL/CH	very stiff	125	1.3	17	0.84		100			1.13	4.09
12.05	39.5	23.21	5.88	3	3	Clay	CL/CH	very stiff	125	1.3	19	0.84		100			1.28	4.89
12.20	40.0	16.19	4.45	3	3	Clay	CL/CH	stiff	125	1.3	13	0.84		100			0.86	2.82

CLIENT: Victor Liu
PROJECT: NWC Neckle Road and Hwy 86 -- Imperial, CA
LOCATION: See Site and Exploration Plan

CONE PENETROMETER: HOLGUIN, FAHAN & ASSC. Truck Mounted Electric with 23 ton reaction weight
DATE: 12/01/03

LOG OF CONE SOUNDING DATA CPT-4

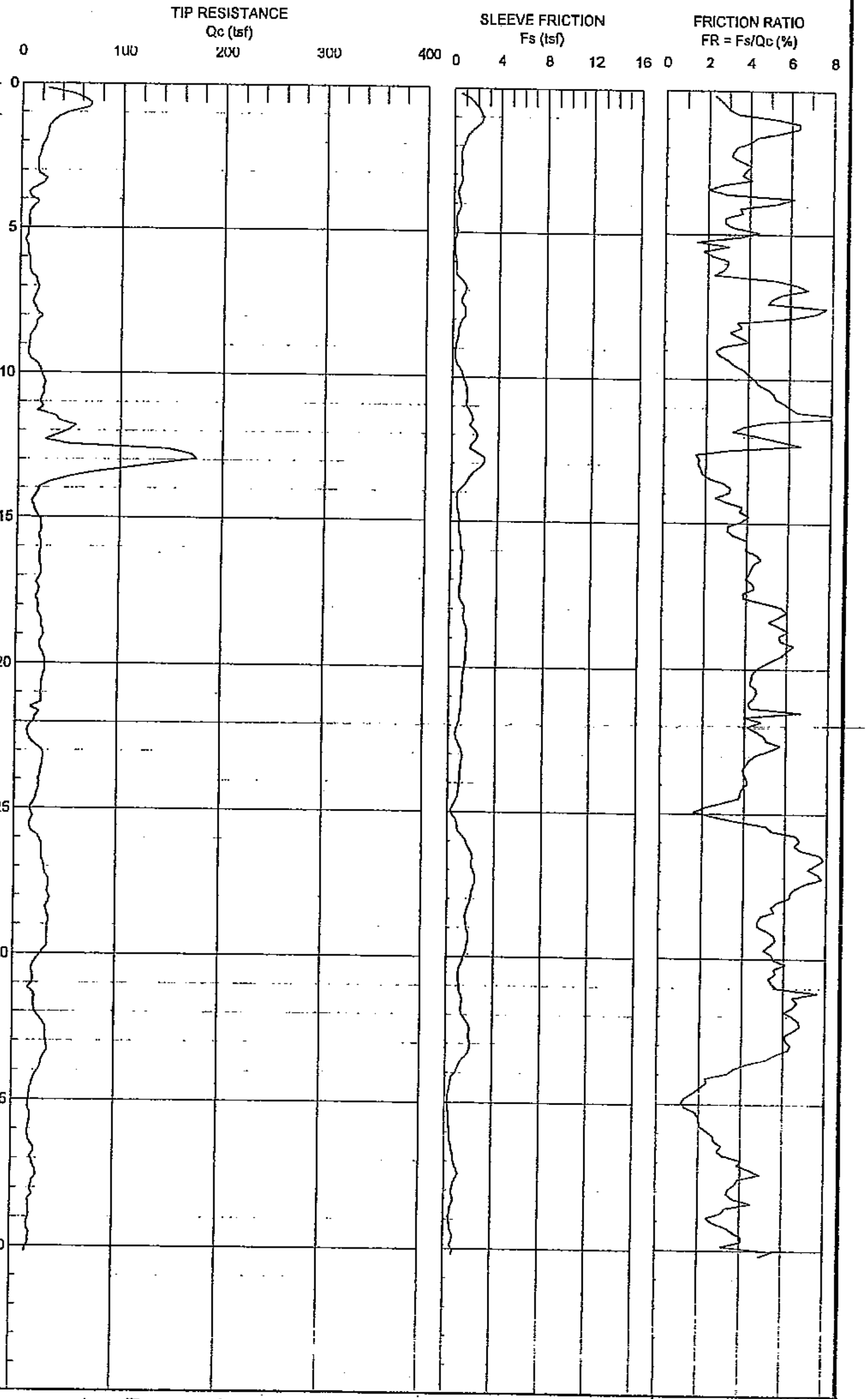
DEPTH (FEET)

INTERPRETED SOIL PROFILE
From Robertson & Campanella (1989)

GROUND EL. +/-

Sandy Silt to Clayey Silt	ML	very dense
Clay	CL/CH	very stiff
Silty Clay to Clay	CL	very stiff
Silty Clay to Clay	" "	stiff
Silty Clay to Clay	" "	stiff
Silty Clay to Clay	" "	firm
Clay	CL/CH	stiff
Clay	" "	stiff
Silty Clay to Clay	CL	stiff
Silty Clay to Clay	" "	stiff
Clay	CL/CH	very stiff
Clay	" "	hard
Sandy Silt to Clayey Silt	ML	dense
Sandy Silt to Clayey Silt	" "	medium dense
Silty Clay to Clay	CL	stiff
Silty Clay to Clay	" "	very stiff
Silty Clay to Clay	" "	very stiff
Clay	CL/CH	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Silty Clay to Clay	CL	very stiff
Clay	CL/CH	very stiff
Clay	" "	stiff
Silty Clay to Clay	CL	very stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Clay	CL/CH	stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Silty Clay to Clay	CL	very stiff
Sandy Silt to Clayey Silt	ML	very loose
Clayey Silt to Silty Clay	ML/CL	stiff
Clayey Silt to Silty Clay	" "	very stiff
Silty Clay to Clay	CL	very stiff
Clayey Silt to Silty Clay	ML/CL	stiff
Silty Clay to Clay	CL	stiff

End of Sounding @ 40.0 ft



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Project No:
LE03146

LANDMARK
Geo-Engineers and Geologists
a DBE/MBE/SBE Company

Plate
B-4

LANDMARK CONSULTANTS, INC.

CONE PENETROMETER INTERPRETATION (based on Robertson & Campanella, 1989, refer to Key to CPT logs)

Project: NWC Neckle Road and Hwy 86 Project No: LE03146 Date: 12/01/03

CONE SOUNDING: CPT-4

Est. GWT (ft): 10.0

Phi Correlation: 0 0-Schm(78),1-R&C(83),2-PHT(74)

Base Depth meters	Base Depth feet	Avg Tip Qc, tsf	Avg Friction Ratio, %		1 Soil Type	Soil Classification	USC	Density or Consistency	Est. Density (pcf)	Qc to N	SPT N(60)	Cn or Cq	Norm. Qc1n	Est. % Fines	Rel. Dens. Dr (%)	Nk: Phi (deg.)	17.0 Su (tsf)	OCR
0.15	0.5	45.51	2.53	6	6	Sandy Silt to Clayey Silt	ML	very dense	115	3.5	13	2.00	86.0	45	111	44		
0.30	1.0	61.03	3.83	5	5	Clayey Silt to Silty Clay	ML/CL	hard	120	2.5	24	2.00		50			3.59	>10
0.45	1.5	31.60	6.08	3	3	Clay	CL/CH	very stiff	125	1.3	25	2.00		75			1.85	>10
0.60	2.0	24.98	3.90	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	14	2.00		70			1.46	>10
0.75	2.5	19.48	3.28	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	8	2.00		75			1.14	>10
0.93	3.0	16.30	3.83	4	4	Silty Clay to Clay	CL	stiff	125	1.8	9	2.00		85			0.95	>10
1.08	3.5	21.56	2.94	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	9	2.00		65			1.26	>10
1.23	4.0	10.51	4.78	3	3	Clay	CL/CH	stiff	125	1.3	8	2.00		100			0.60	>10
1.38	4.5	13.25	3.34	4	4	Silty Clay to Clay	CL	stiff	125	1.8	8	2.00		85			0.76	>10
1.53	5.0	8.32	3.48	3	3	Clay	CL/CH	firm	125	1.3	7	1.91		100			0.47	>10
1.68	5.5	6.60	2.45	4	4	Silty Clay to Clay	CL	firm	125	1.8	4	1.81		100			0.37	>10
1.83	6.0	8.45	2.72	4	4	Silty Clay to Clay	CL	firm	125	1.8	5	1.73		95			0.48	>10
1.98	6.5	10.30	3.43	4	4	Silty Clay to Clay	CL	stiff	125	1.8	6	1.66		95			0.58	>10
2.13	7.0	17.11	6.27	3	3	Clay	CL/CH	stiff	125	1.3	14	1.60		100			0.98	>10
2.28	7.5	14.62	5.92	3	3	Clay	CL/CH	stiff	125	1.3	12	1.54		100			0.83	>10
2.45	8.0	18.32	5.63	3	3	Clay	CL/CH	very stiff	125	1.3	15	1.49		90			1.05	>10
2.60	8.5	15.70	3.44	4	4	Silty Clay to Clay	CL	stiff	125	1.8	9	1.44		85			0.89	>10
2.75	9.0	10.23	3.08	4	4	Silty Clay to Clay	CL	stiff	125	1.8	6	1.40		100			0.57	9.00
2.90	9.5	9.81	3.00	4	4	Silty Clay to Clay	CL	stiff	125	1.8	6	1.38		100			0.54	7.41
3.05	10.0	20.13	4.04	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	12	1.32		85			1.15	>10
3.20	10.5	24.38	4.88	3	3	Clay	CL/CH	very stiff	125	1.3	20	1.31		85			1.40	>10
3.35	11.0	22.44	5.68	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.29		95			1.28	>10
3.50	11.5	26.33	6.88	3	3	Clay	CL/CH	very stiff	125	1.3	21	1.28		95			1.51	>10
3.65	12.0	48.88	3.85	5	5	Clayey Silt to Silty Clay	ML/CL	hard	120	2.5	20	1.26		60			2.84	>10
3.80	12.5	38.45	5.04	3	3	Clay	CL/CH	hard	125	1.3	31	1.25		75			2.22	>10
3.95	13.0	163.55	1.60	8	8	Sand to Silty Sand	SP/SM	very dense	115	5.5	30	1.23	190.8	20	92	41		
4.13	13.5	105.28	1.92	7	7	Silty Sand to Sandy Silt	SM/ML	dense	115	4.5	23	1.22	121.7	30	78	39		
4.28	14.0	33.29	3.06	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	13	1.21		65			1.92	>10
4.43	14.5	16.81	3.07	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	1.20		90			0.95	>10
4.58	15.0	17.33	3.84	4	4	Silty Clay to Clay	CL	stiff	125	1.8	10	1.19		100			0.98	>10
4.73	15.5	22.91	3.18	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	9	1.18		80			1.30	>10
4.88	16.0	22.31	4.11	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	13	1.16		90			1.27	>10
5.03	18.5	22.07	4.43	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	13	1.15		95			1.25	>10
5.18	17.0	22.73	4.14	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	13	1.14		95			1.29	>10
5.33	17.5	20.63	4.05	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	12	1.13		95			1.17	>10
5.48	18.0	20.29	5.52	3	3	Clay	CL/CH	very stiff	125	1.3	16	1.12		100			1.14	>10
5.65	18.5	22.59	5.44	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.11		100			1.28	>10
5.80	19.0	25.68	5.80	3	3	Clay	CL/CH	very stiff	125	1.3	21	1.10		100			1.46	>10
5.95	19.5	23.19	6.04	3	3	Clay	CL/CH	very stiff	125	1.3	19	1.09		100			1.31	>10
6.10	20.0	27.70	4.90	3	3	Clay	CL/CH	very stiff	125	1.3	22	1.08		95			1.58	>10
6.25	20.5	27.18	4.29	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	16	1.07		90			1.54	>10
6.40	21.0	24.65	4.51	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	14	1.06		100			1.39	>10
6.55	21.5	21.34	5.06	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.05		100			1.20	9.19
6.70	22.0	20.30	4.31	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	12	1.05		100			1.14	>10
6.85	22.5	12.62	4.85	3	3	Clay	CL/CH	stiff	125	1.3	10	1.04		100			0.68	3.66
7.00	23.0	20.35	5.16	3	3	Clay	CL/CH	very stiff	125	1.3	16	1.03		100			1.14	7.70
7.18	23.5	26.96	4.09	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	15	1.02		95			1.53	>10
7.33	24.0	24.30	4.08	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	14	1.01		100			1.37	>10
7.48	24.5	22.66	3.84	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	13	1.01		100			1.27	>10
7.63	25.0	18.46	2.24	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	7	1.00		95			1.02	>10
7.78	25.5	16.49	3.75	4	4	Silty Clay to Clay	CL	stiff	125	1.8	9	0.99		100			0.91	6.21
7.93	26.0	17.82	6.19	3	3	Clay	CL/CH	stiff	125	1.3	14	0.98		100			0.98	5.31
8.08	26.5	26.44	7.19	3	3	Clay	CL/CH	very stiff	125	1.3	21	0.98		100			1.49	>10
8.23	27.0	28.52	7.41	3	3	Clay	CL/CH	very stiff	125	1.3	23	0.97		100			1.61	>10
8.38	27.5	32.75	7.11	3	3	Clay	CL/CH	very stiff	125	1.3	26	0.96		100			1.86	>10
8.53	28.0	33.94	6.05	3	3	Clay	CL/CH	very stiff	125	1.3	27	0.96		100			1.93	>10
8.68	28.5	32.44	5.23	3	3	Clay	CL/CH	very stiff	125	1.3	26	0.95		100			1.84	>10
8.85	29.0	33.87	4.86	3	3	Clay	CL/CH	very stiff	125	1.3	27	0.94		100			1.92	>10
9.00	29.5	33.16	5.46	3	3	Clay	CL/CH	very stiff	125	1.3	27	0.94		100			1.88	>10
9.15	30.0	29.67	5.33	3	3	Clay	CL/CH	very stiff	125	1.3	24	0.93		100			1.67	>10

LANDMARK CONSULTANTS, INC.

CONE PENETROMETER INTERPRETATION (based on Robertson & Campanella, 1989, refer to Key to CPT logs)

Project: NWC Neckle Road and Hwy 86 Project No: LE03146 Date: 12/01/03

CONE SOUNDING: CPT-4

Est. GWT (ft): 10.0

Phi Correlation: **0** 0-Schm(78),1-R&C(83),2-PHT(74)

Base Depth meters	Base Depth feet	Avg Tip Qc, tsf	Avg Friction Ratio, %		1 Soil Type	Soil Classification	USC	Density or Consistency	Est. Density (pcf)	Qc to N	SPT N(60)	Cn or Cq	Norm. Qc1n	Est. % Fines	Rel. Dens. Dr (%)	Nk: Phi (deg.)	17.0 Su (tsf)	OCR
9.30	30.5	20.14	5.73	3	3	Clay	CL/CH	very stiff	125	1.3	16	0.93		100			1.11	5.31
9.45	31.0	19.45	5.42	3	3	Clay	CL/CH	very stiff	125	1.3	16	0.92		100			1.07	4.89
9.60	31.5	18.69	6.91	3	3	Clay	CL/CH	very stiff	125	1.3	15	0.91		100			1.03	4.47
9.75	32.0	20.87	6.30	3	3	Clay	CL/CH	very stiff	125	1.3	17	0.91		100			1.15	5.31
9.90	32.5	28.33	6.67	3	3	Clay	CL/CH	very stiff	125	1.3	23	0.90		100			1.59	8.70
10.05	33.0	32.56	6.17	3	3	Clay	CL/CH	very stiff	125	1.3	26	0.90		100			1.84	>10
10.20	33.5	32.91	5.69	3	3	Clay	CL/CH	very stiff	125	1.3	26	0.89		100			1.86	>10
10.38	34.0	27.68	3.75	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	11	0.89		100			1.55	>10
10.53	34.5	21.16	2.22	6	6	Sandy Silt to Clayey Silt	ML	loose	115	3.5	6	0.88	17.7	100	21	31		
10.68	35.0	17.33	1.41	6	6	Sandy Silt to Clayey Silt	ML	very loose	115	3.5	5	0.88	14.4	100	15	30		
10.83	35.5	16.94	1.71	6	6	Sandy Silt to Clayey Silt	ML	very loose	115	3.5	5	0.87	14.0	100	14	30		
10.98	36.0	17.42	2.16	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	0.87		100			0.94	6.00
11.13	36.5	17.84	2.86	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	0.87		100			0.97	6.10
11.28	37.0	20.65	3.69	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	12	0.86		100			1.13	5.65
11.43	37.5	23.22	4.44	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	13	0.86		100			1.28	6.65
11.58	38.0	20.23	3.52	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	8	0.85		100			1.10	7.13
11.73	38.5	18.48	3.83	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	11	0.85		100			1.00	4.47
11.88	39.0	17.89	2.73	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	0.84		100			0.97	5.65
12.05	39.5	17.09	3.89	4	4	Silty Clay to Clay	CL	stiff	125	1.8	10	0.84		100			0.92	3.83
12.20	40.0	16.69	4.25	3	3	Clay	CL/CH	stiff	125	1.3	13	0.84		100			0.89	3.00

CLIENT: Victor Liu
PROJECT: NWC Neckle Road and Hwy 86 -- Imperial, CA
LOCATION: See Site and Exploration Plan

CONE PENETROMETER: HOLGUIN, FAHAN & ASSC. Truck Mounted Electric with 23 ton reaction weight
DATE: 12/01/03

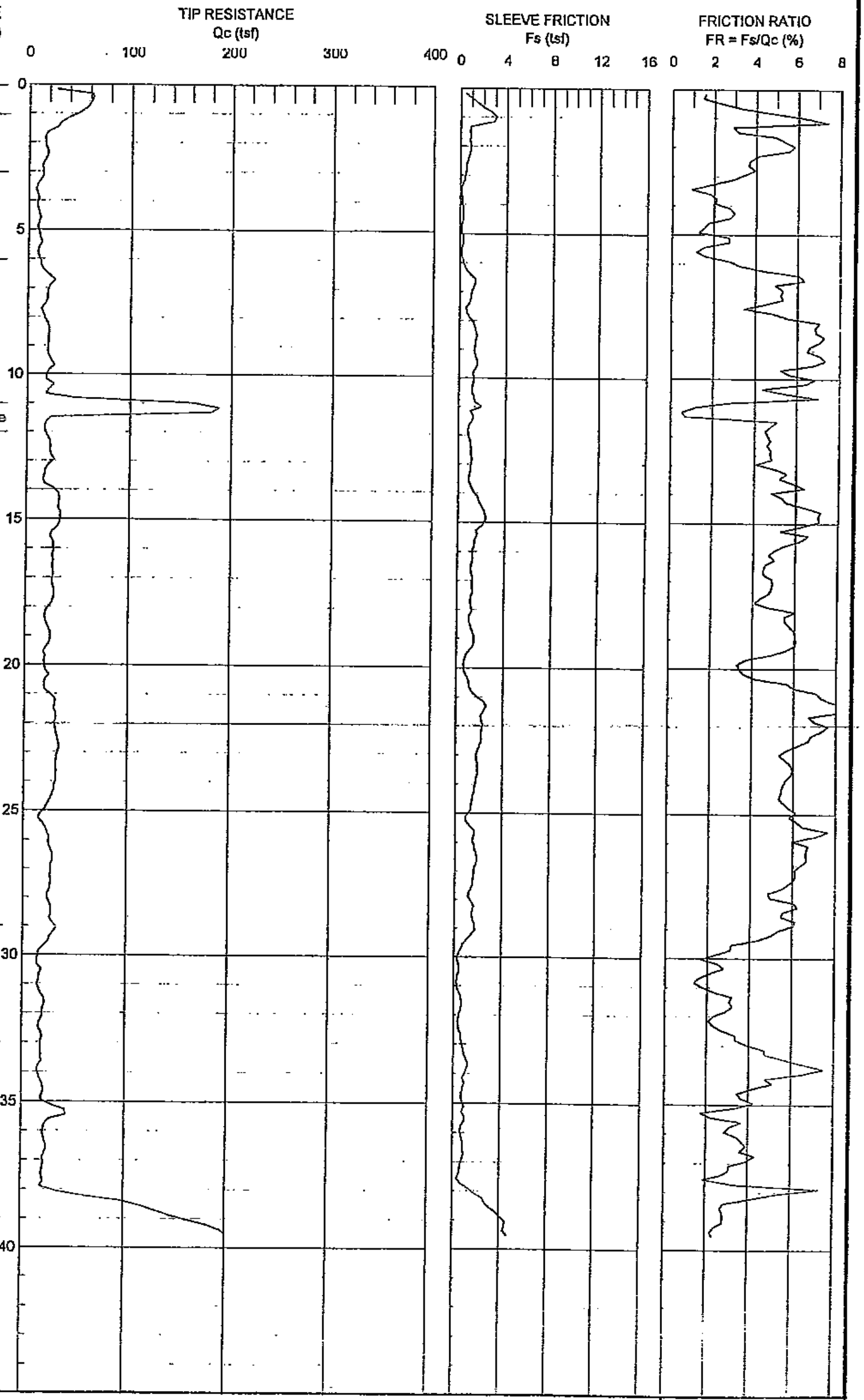
LOG OF CONE SOUNDING DATA CPT-5

INTERPRETED SOIL PROFILE
From Robertson & Campanella (1989)

GROUND EL. +/-

Sandy Silt to Clayey Silt	ML	very dense
Clay	CL/CH	very stiff
Silty Clay to Clay	CL	stiff
Clayey Silt to Silty Clay	ML/CL	stiff
Clayey Silt to Silty Clay	" "	stiff
Clayey Silt to Silty Clay	" "	stiff
Clay	CL/CH	very stiff
Clay	" "	stiff
Clay	" "	very stiff
Clay	" "	very stiff
Silty Clay to Clay	CL	hard
Sandy Silt to Clayey Silt	ML	medium dense
Clay	CL/CH	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clay	" "	very stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Clayey Silt to Silty Clay	" "	stiff
Clayey Silt to Silty Clay	" "	very stiff
Clayey Silt to Silty Clay	" "	stiff
Clay	CL/CH	stiff
Silty Clay to Clay	CL	very stiff
Clayey Silt to Silty Clay	ML/CL	very stiff
Silty Clay to Clay	CL	very stiff
Silty Clay to Clay	" "	very stiff
Sandy Silt to Clayey Silt	ML	densa

End of Sounding @ 39.5 ft



Project No:
LE03146

LANDMARK
Geo-Engineers and Geologists
a DBE/MBE/SBE Company

Plate
B-5

CONE PENETROMETER INTERPRETATION (based on Robertson & Campanella, 1989, refer to Key to CPT logs)

Project: NWC Neckle Road and Hwy 86 Project No: LE03146 Date: 12/01/03

CONE SOUNDING: CPT-5

Est. GWT (ft): 10.0

Phi Correlation: 0 0-Schm(78),1-R&C(83),2-PHT(74)

Base Depth meters	Base Depth feet	Avg Tip Qc, tsf	Avg Friction Ratio, %		1 Soil Type	Soil Classification	USC	Density or Consistency	Est. Density (pcf)	Qc to N	SPT N(60)	Cn or Cq	Norm. Qc1n	Est. % Fines	Rel. Dens. Dr (%)	Nk: Phi (deg.)	17.0 Su (tsf)	OCR
0.15	0.5	50.52	1.79	7	7	Silty Sand to Sandy Silt	SM/ML	very dense	115	4.5	11	2.00	95.5	35	114	44		
0.30	1.0	54.84	4.75	4	4	Silty Clay to Clay	CL	hard	125	1.8	31	2.00		55			3.22	>10
0.45	1.5	32.39	4.48	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	19	2.00		65			1.90	>10
0.60	2.0	16.34	5.37	3	3	Clay	CL/CH	stiff	125	1.3	13	2.00		95			0.96	>10
0.75	2.5	17.74	4.47	3	3	Clay	CL/CH	very stiff	125	1.3	14	2.00		85			1.04	>10
0.93	3.0	14.14	3.66	4	4	Silty Clay to Clay	CL	stiff	125	1.8	8	2.00		85			0.82	>10
1.08	3.5	11.50	1.88	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	5	2.00		75			0.66	>10
1.23	4.0	8.84	2.00	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	4	2.00		85			0.51	>10
1.38	4.5	9.61	2.84	4	4	Silty Clay to Clay	CL	stiff	125	1.8	5	2.00		95			0.55	>10
1.53	5.0	10.09	1.54	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	4	1.91		75			0.58	>10
1.68	5.5	11.59	2.06	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	5	1.81		75			0.68	>10
1.83	6.0	10.90	2.55	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	4	1.74		85			0.62	>10
1.98	6.5	16.74	5.63	3	3	Clay	CL/CH	stiff	125	1.3	13	1.66		95			0.96	>10
2.13	7.0	22.43	5.15	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.60		80			1.30	>10
2.28	7.5	18.30	4.42	3	3	Clay	CL/CH	very stiff	125	1.3	15	1.54		85			1.05	>10
2.45	8.0	15.09	5.82	3	3	Clay	CL/CH	stiff	125	1.3	12	1.49		100			0.88	>10
2.60	8.5	20.25	7.02	3	3	Clay	CL/CH	very stiff	125	1.3	16	1.44		100			1.16	>10
2.75	9.0	20.19	6.74	3	3	Clay	CL/CH	very stiff	125	1.3	16	1.40		100			1.18	>10
2.90	9.5	21.21	7.07	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.36		100			1.21	>10
3.05	10.0	21.88	5.91	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.33		95			1.25	>10
3.20	10.5	22.10	5.40	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.31		90			1.26	>10
3.35	11.0	75.43	3.72	5	5	Clayey Silt to Silty Clay	ML/CL	hard	120	2.5	30	1.29		50			4.40	>10
3.50	11.5	130.32	2.11	7	7	Silty Sand to Sandy Silt	SM/ML	dense	115	4.5	29	1.28	157.8	25	86	40		
3.65	12.0	18.07	4.65	3	3	Clay	CL/CH	very stiff	125	1.3	14	1.27		95			1.02	>10
3.80	12.5	21.84	4.72	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.25		90			1.24	>10
3.95	13.0	24.51	4.56	3	3	Clay	CL/CH	very stiff	125	1.3	20	1.24		85			1.40	>10
4.13	13.5	18.95	5.26	3	3	Clay	CL/CH	very stiff	125	1.3	15	1.22		100			1.07	>10
4.28	14.0	20.18	5.71	3	3	Clay	CL/CH	very stiff	125	1.3	16	1.21		100			1.14	>10
4.43	14.5	31.94	5.76	3	3	Clay	CL/CH	very stiff	125	1.3	26	1.20		90			1.84	>10
4.58	15.0	32.49	7.12	3	3	Clay	CL/CH	very stiff	125	1.3	26	1.19		95			1.87	>10
4.73	15.5	29.87	6.08	3	3	Clay	CL/CH	very stiff	125	1.3	24	1.17		95			1.70	>10
4.88	16.0	25.91	5.38	3	3	Clay	CL/CH	very stiff	125	1.3	21	1.16		95			1.48	>10
5.03	16.5	26.38	4.70	3	3	Clay	CL/CH	very stiff	125	1.3	21	1.15		90			1.50	>10
5.18	17.0	26.52	4.78	3	3	Clay	CL/CH	very stiff	125	1.3	21	1.14		90			1.51	>10
5.33	17.5	27.22	4.67	3	3	Clay	CL/CH	very stiff	125	1.3	22	1.13		90			1.55	>10
5.48	18.0	24.60	4.97	3	3	Clay	CL/CH	very stiff	125	1.3	20	1.12		100			1.40	>10
5.65	18.5	19.46	5.62	3	3	Clay	CL/CH	very stiff	125	1.3	16	1.11		100			1.09	9.19
5.80	19.0	23.68	6.03	3	3	Clay	CL/CH	very stiff	125	1.3	19	1.10		100			1.34	>10
5.95	19.5	21.16	5.48	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.09		100			1.19	>10
6.10	20.0	19.25	3.46	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	11	1.08		100			1.08	>10
6.25	20.5	21.22	4.49	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.07		100			1.19	9.59
6.40	21.0	21.28	6.83	3	3	Clay	CL/CH	very stiff	125	1.3	17	1.06		100			1.20	9.39
6.55	21.5	29.78	8.20	3	3	Clay	CL/CH	very stiff	125	1.3	24	1.05		100			1.70	>10
6.70	22.0	30.67	7.14	3	3	Clay	CL/CH	very stiff	125	1.3	25	1.04		100			1.75	>10
6.85	22.5	31.49	6.95	3	3	Clay	CL/CH	very stiff	125	1.3	25	1.03		100			1.79	>10
7.00	23.0	33.79	5.72	3	3	Clay	CL/CH	very stiff	125	1.3	27	1.03		95			1.93	>10
7.18	23.5	31.65	5.82	3	3	Clay	CL/CH	very stiff	125	1.3	25	1.02		100			1.80	>10
7.33	24.0	31.58	5.72	3	3	Clay	CL/CH	very stiff	125	1.3	25	1.01		100			1.80	>10
7.48	24.5	29.04	5.40	3	3	Clay	CL/CH	very stiff	125	1.3	23	1.00		100			1.65	>10
7.63	25.0	22.97	5.83	3	3	Clay	CL/CH	very stiff	125	1.3	18	1.00		100			1.29	8.41
7.78	25.5	16.55	6.18	3	3	Clay	CL/CH	stiff	125	1.3	13	0.99		100			0.91	4.78
7.93	26.0	23.30	6.90	3	3	Clay	CL/CH	very stiff	125	1.3	19	0.98		100			1.31	8.27
8.08	26.5	28.52	6.67	3	3	Clay	CL/CH	very stiff	125	1.3	21	0.97		100			1.49	>10
8.23	27.0	27.20	6.21	3	3	Clay	CL/CH	very stiff	125	1.3	22	0.97		100			1.53	>10
8.38	27.5	26.43	5.80	3	3	Clay	CL/CH	very stiff	125	1.3	21	0.96		100			1.49	9.79
8.53	28.0	24.21	5.29	3	3	Clay	CL/CH	very stiff	125	1.3	19	0.95		100			1.36	8.00
8.68	28.5	27.06	5.75	3	3	Clay	CL/CH	very stiff	125	1.3	22	0.95		100			1.52	9.79
8.85	29.0	29.34	5.82	3	3	Clay	CL/CH	very stiff	125	1.3	23	0.94		100			1.66	>10
9.00	29.5	27.01	4.14	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	15	0.94		100			1.52	>10
9.15	30.0	17.02	2.41	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	0.93		100			0.93	7.13

LANDMARK CONSULTANTS, INC.

CONE PENETROMETER INTERPRETATION (based on Robertson & Campanella, 1989, refer to Key to CPT logs)

Project: NWC Neckle Road and Hwy 86 Project No: LE03146 Date: 12/01/03

CONE SOUNDING: CPT-5

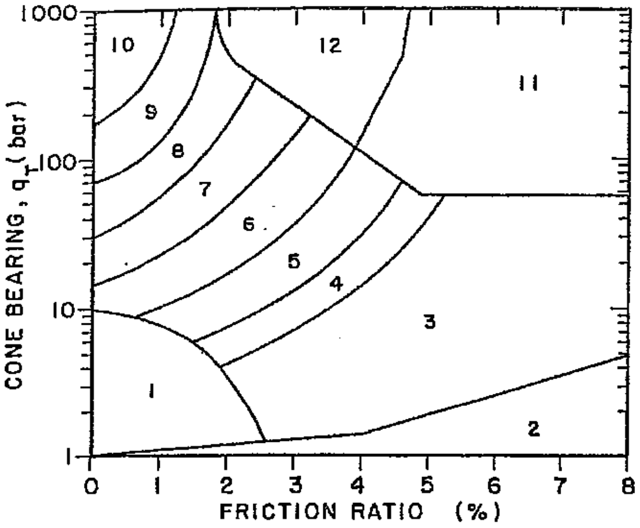
Est. GWT (ft): 10.0

Phi Correlation: 0 0-Schm(78),1-R&C(83),2-PHT(74)

Base Depth meters	Base Depth feet	Avg Tip Qc, tsf	Avg Friction Ratio, %		1 Soil Type	Soil Classification	USC	Density or Consistency	Est. Density (pcf)	Qc to N	SPT N(60)	Cn or Cq	Norm. Qc1n	Est. % Fines	Rel. Dens. Dr (%)	Nk: Phi (deg.)	17.0 Su (tsf)	OCR
9.30	30.5	16.11	2.49	5	5	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	6	0.92		100			0.87	6.43
9.45	31.0	15.84	1.61	6	6	Sandy Silt to Clayey Silt	ML	very loose	115	3.5	5	0.92	13.8	100	14	30		
9.60	31.5	18.51	2.87	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	7	0.91		100			1.01	7.85
9.75	32.0	20.32	2.82	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	8	0.91		100			1.12	9.19
9.90	32.5	17.19	2.35	5	6	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.5	7	0.90		100			0.94	6.65
10.05	33.0	18.70	3.54	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	11	0.90		100			1.02	5.53
10.20	33.5	18.47	5.08	3	3	Clay	CL/CH	very stiff	125	1.3	15	0.89		100			1.01	4.09
10.38	34.0	16.82	6.90	3	3	Clay	CL/CH	stiff	125	1.3	13	0.89		100			0.91	3.50
10.53	34.5	18.63	4.72	3	3	Clay	CL/CH	very stiff	125	1.3	15	0.88		100			1.02	4.00
10.68	35.0	19.79	3.79	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	11	0.88		100			1.08	5.65
10.83	35.5	38.38	2.47	6	6	Sandy Silt to Clayey Silt	ML	loose	115	3.5	11	0.87	31.7	80	39	33		
10.98	36.0	23.55	3.23	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	9	0.87		100			1.30	>10
11.13	36.5	22.74	3.66	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	13	0.87		100			1.25	6.85
11.28	37.0	21.67	3.80	4	4	Silty Clay to Clay	CL	very stiff	125	1.8	12	0.86		100			1.19	6.10
11.43	37.5	20.28	2.59	5	5	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.5	8	0.86		100			1.11	7.27
11.58	38.0	24.94	5.35	3	3	Clay	CL/CH	very stiff	125	1.3	20	0.85		100			1.38	5.76
11.73	38.5	92.04	3.23	6	6	Sandy Silt to Clayey Silt	ML	medium dense	115	3.5	26	0.85	73.7	60	63	37		
11.88	39.0	145.37	2.83	7	7	Silty Sand to Sandy Silt	SM/ML	dense	115	4.5	32	0.84	115.9	45	77	39		
12.05	39.5	192.02	2.34	7	7	Silty Sand to Sandy Silt	SM/ML	dense	115	4.5	43	0.84	152.4	35	85	40		
12.20	40.0	NA	NA	****	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Simplified Soil Classification Chart

After Robertson & Campanella (1989)



Geotechnical Parameters from CPT Data:

Equivalent SPT N(60) blow count = Qc/(Qc/N Ratio)

N1(60) = Cn*N(60) Normalized SPT blow count

Cn = 1/(p'o)^0.5 < 1.6 max. from Liao & Whitman (1986)

p'o = effective overburden pressure (tsf) using unit densities given below and estimated groundwater table.

Dr = Relative density (%) from Jamiolkowski et. al. (1986) relationship
= -98 +68*log(Qc/p'o^0.5) where Qc, p'o in tonne/sqm

Note: 1 tonne/sqm = 0.1024 tsf, 1 bar =1.0443 tsf

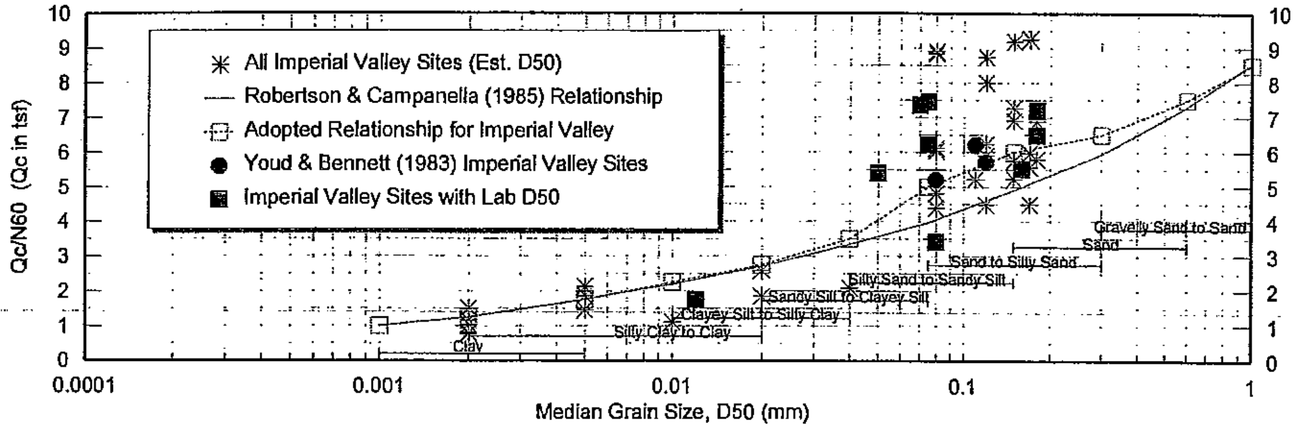
Phi = Friction Angle estimated from either:

1. Roberton & Campanella (1983) chart:
   Phi = 5.3 + 24*(log(Qc/p'o))+3(log(Qc/p'o))^2
2. Peck, Hansen & Thomburn (1974) N-Phi Correlation
3. Schmertman (1978) chart [Phi = 28+0.14*Dr for fine uniform sands]

Su = undrained shear strength (tsf)
= (Qc-p'o)/Nk where Nk varies from 10 to 22, 17 for OC clays

OCR = Overconsolidation Ratio estimated from Schmertman (1978) chart using Su/p'o ratio and estimated normal consolidated Su/p'o

Variation of Qc/N Ratio with Grain Size



Note: Assumed Properties and Adopted Qc/N Ratio based on correlations from Imperial Valley, California soils

Table of Soil Types and Assumed Properties

Zone	Soil Classification	UCS	Density (pcf)	R&C Qc/N	Adopted Qc/N	Est. PI	Fines (%)	D50 (mm)
1	Sensitive fine grained	ML	120	2	2	NP-15	65-100	0.020
2	Organic Material	OL/OH	120	1	1	--	--	--
3	Clay	CL/CH	125	1	1.25	25-40+	90-100	0.002
4	Silty Clay to Clay	CL	125	1.5	2	15-40	90-100	0.010
5	Clayey Silt to Silty Clay	ML/CL	120	2	2.75	5-25	90-100	0.020
6	Sandy Silt to Clayey Silt	ML	115	2.5	3.5	NP-10	65-100	0.040
7	Silty Sand to Sandy Silt	SM/ML	115	3	5	NP	35-75	0.075
8	Sand to Silty Sand	SP/SM	115	4	6	NP	5-35	0.150
9	Sand	SP	110	5	6.5	NP	0-5	0.300
10	Gravelly Sand to Sand	SW	115	6	7.5	NP	0-5	0.600
11	Overconsolidated Soil	--	120	1	1	NP	90-100	0.010
12	Sand to Clayey Sand	SP/SC	115	2	2	NP-5	--	---

Su (tsf)	Consistency
0-0.13	very soft
0.13-.25	soft
0.25-0.5	firm
0.5-1.0	stiff
1.0-2.0	very stiff
>2.0	hard

Dr (%)	Relative Density
0-15	very loose
15-35	loose
35-65	medium dense
65-85	dense
>85	very dense

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Key to CPT Interpretation of Logs

Plate
B-6

APPENDIX C

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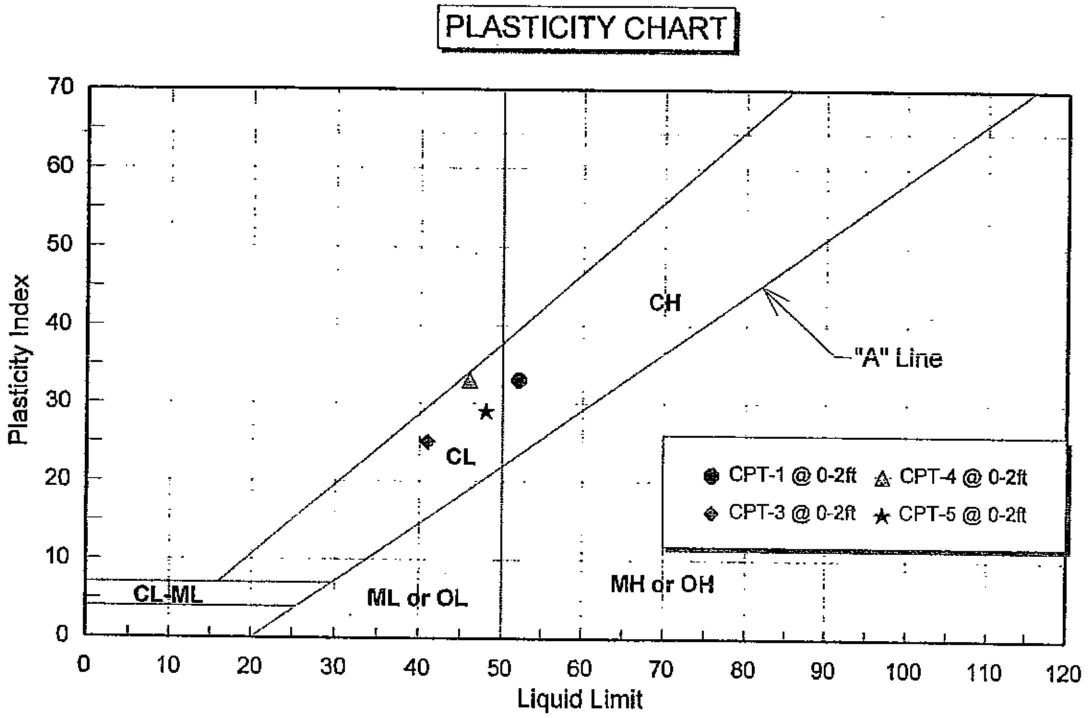
CLIENT: Victor Liu
PROJECT: NWC Neckle Road and Hwy 86
JOB NO: LE03146
DATE: 12/01/03

ATTERBERG LIMITS (ASTM D4318)

Sample Location	Sample Depth (ft)	Liquid Limit (LL)	Plastic Limit (PL)	Plasticity Index (PI)	USCS Classif-ation
CPT-1	0-2	52	19	33	CH
CPT-3	0-2	41	16	25	CL
CPT-4	0-2	46	13	33	CL
CPT-5	0-2	48	19	29	CL



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Atterberg Limits Test Results

Plate C-1

LANDMARK CONSULTANTS, INC.

CLIENT: Victor Liu
PROJECT: NWC Neckle Road and Hwy 86
JOB NO: LE03146
DATE: 12/01/03

CHEMICAL ANALYSES

Boring:	CPT-1	CPT-2	CPT-3	CPT-4	CPT-5	CalTrans
Sample Depth, ft:	0-2	0-2	0-2	0-2	0-2	Method
pH:	6.1	6.4	6.0	6.5	6.3	643
Electrical Conductivity (mmhos):	1.5	3.6	1.2	4.4	5.6	424
Resistivity (ohm-cm):	315	195	450	200	30	643
Chloride (Cl), ppm:	1,140	4,917	800	2,390	7,510	422
Sulfate (SO4), ppm:	1,140	4,620	1,220	7,660	6,830	417

General Guidelines for Soil Corrosivity

Material Affected	Chemical Agent	Amount in Soil (ppm)	Degree of Corrosivity
Concrete	Soluble Sulfates	0 -1,000	Low
		1,000 - 2,000	Moderate
		2,000 - 20,000	Severe
		> 20,000	Very Severe
Normal Grade Steel	Soluble Chlorides	0 - 200	Low
		200 - 700	Moderate
		700 - 1,500	Severe
		> 1,500	Very Severe
Normal Grade Steel	Resistivity	1-1,000	Very Severe
		1,000-2,000	Severe
		2,000-10,000	Moderate
		> 10,000	Low

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Selected Chemical Analyses Results

Plate C-2

LANDMARK CONSULTANTS, INC.

CLIENT: Victor Liu
PROJECT: NWC Neckle Road and Hwy 86
JOB NO: LE03146
DATE: 12/01/03

EXPANSION INDEX TEST (UBC 29-2 & ASTM D4829)

Sample Location & Depth (ft)	Initial Moisture (%)	Compacted Dry Density (pcf)	Final Moisture (%)	Volumetric Swell (%)	Expansion Index (EI)	Expansive Potential
CPT-4 0-2 ft.	14.5	91.7	35.8	9.8	**95 ***	High

UBC CLASSIFICATION

0-20	Very Low
20-50	Low
50-90	Medium
90-130	High
130+	Very High

Note: * The measured EI have been adjusted to the estimated EI at 50% saturation in accordance with Section 10.1.2 of ASTM D4829.

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Expansion Index
Test Results

Plate
C-3

APPENDIX D

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