HELIX
Environmental Planning

Del Prado Project

Draft Mitigated Negative Declaration

March 2016

Prepared for:
City of Escondido
Planning Division
201 North Broadway
Escondido, California 92025

Prepared by:
HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, California 91942

CITY OF ESCONDIDO
DEL PRADO PROJECT

DRAFT MITIGATED NEGATIVE DECLARATION

TABLE OF CONTENTS

Title	**Page**
Draft Mitigated Negative Declaration	1
Supplemental Comments	1
Introduction	1
Detailed Project Description/Location	3
Past Public Meetings	6
Anticipated Public Meetings/Hearings	6
Project Environmental Setting	6
I. Agriculture and Forestry Resources	7
II. Air Quality	8
III. Biological Resources	15
IV. Cultural Resources	17
V. Geology and Soils	23
VI. Greenhouse Gas Emissions	29
VII. Hazards and Hazardous Materials	32
VIII. Hydrology and Water Quality	37
IX. Land Use and Planning	46
X. Mineral Resources	48
XI. Noise	49
XII. Population and Housing	52
XIII. Public Services	53
XIV. Recreation	55
XV. Transportation/Traffic	55
XVII. Utilities and Service Systems	60
XVIII. Mandatory Findings of Significance	61
Summary of Design Measures and Mitigation Measures	62
Materials Used in Preparation of this Analysis	70
IS Checklist	A-1

TABLE OF CONTENTS (cont.)

FIGURES

Figure		Follows Page
1	Regional Location	2
2	Project Location	2
3	Project Vicinity	2
4a	Site/Grading Plan - Del Prado North	4
4b	Site/Grading Plan - Del Prado South	4
5a	Site Photos – North Lot Seen from Brotherton Road	6
5b	Site Photos – North and South Lots Seen from S. Centre City Parkway	6

TABLES

Table		Page
1	Estimated Maximum Daily Construction Emissions	11
2	Estimated Maximum Daily Operational Emissions	12
3	Concurrent Operational and Construction Emissions	12
4	Estimated Project Related GHG Emissions	31
5	Roadway Segment Conditions	57
6	Intersection Conditions	58

LIST OF APPENDICES

(Electronic copies of appendices included on CD in the back of this Draft Mitigated Negative Declaration.)

A. Air Quality and Greenhouse Gas Emissions Calculations
B. Archaeological and Paleontological Letter Report
C. Geotechnical Investigation
D. Phase I Environmental Site Assessment
E. Storm Water Quality Management Plan and Preliminary Drainage Study
F. Acoustical Analysis Report
G. Traffic Impact Study

ACRONYMS

AB	Assembly Bill
ADT	average daily trips
APN	Assessor's Parcel Number
AMSl	above mean sea level
ATS	advanced treatment systems
AQAI	Air Quality Impact Analysis
BAT	best available technology
BCT	best conventional pollutant control technology
BMPs	Best Management Practices
CalEEMod	California Emission Estimator Model
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CASQA	California Storm Water Quality Association
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CFG Code	California Fish and Game Code
C-G	Commercial General
CGS	California Geological Survey
City	City of Escondido
CMP	Congestion Management Program
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
County	San Diego County
CSMP	Construction Site Monitoring Program
cy	cubic yards
dB	decibels
dBA	A-weighted decibels
DMAs	drainage management areas
DPM	diesel particulate matter
E-CAP	Escondido Climate Action Plan
EMT	emergency medical technician
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency

GB	Green Building
GC	General Commercial
GHG	greenhouse gas
HCP	Habitat Conservation Plan
HELIX	HELIX Environmental Planning, Inc.
HMP	Hydromodification Management Plan
HRECs	Historical Recognized Environmental Conditions
HVAC	heating, ventilation and air conditioning
I-15	Interstate 15
IPM	integrated pest management
IS/MND	Initial Study/Mitigated Negative Declaration
JURMP	Jurisdictional Urban Runoff Management Plan
KOA	KOA Corporation
L_{EQ} (one hour)	one-hour average sound level
LID	low impact development
LOS	Level of Service
LUST	leaking underground storage tank
Masson	Masson & Associates
MBTA	Migratory Bird Treaty Act
MCAS	Marine Corps Air Station
MEI	maximally exposed individual
MEP	maximum extent practicable
MND	Mitigated Negative Declaration
mph	miles per hour
MT	metric tons
MTS	Metropolitan Transit System
NCCP	Natural Community Conservation Plan
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration
PCP	Pentachlorophenol
PD-R	Planned Development-Residential
PM_{10}	Particulate matter smaller than 10 microns in diameter
$PM_{2.5}$	Particulate matter smaller than 2.5 microns in diameter
ppv	peak particle velocity

RAQS	Regional Air Quality Strategy
REAP	Rain Event Action Plan
REC	Regional Environmental Conditions
Recuerdos	Recuerdos Research
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SDAB `	San Diego Air Basin
SDAPCD	San Diego County Air Pollution Control District
SDG&E	San Diego Gas & Electric
SIP	State Implementation Plan
SR	State Route
STC	Sound Transmission Control
SUSMP	Standard Urban Storm Water Mitigation Plan
SWPPP	Storm Water Pollution Prevention Plan
SWQMP	Storm Water Quality Management Plan
SWRCB	State Water Resources Control Board
TACs	Toxic Air Containments
TDS	total dissolved solids
TIS	Traffic Impact Study
USFWS	U.S. Fish and Wildlife Service
V/C	vehicle to capacity ratio
VdB	vibration decibels
VOCs	volatile organic compounds

THIS PAGE INTENTIONALLY LEFT BLANK

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

CASE NO.: ENV15-0011 "Del Prado Project"

DATE ISSUED: March 1, 2016

PUBLIC REVIEW PERIOD: March 4, 2016 – March 23, 2016

LOCATION: The approximately 4.9-acre project site consists of two adjacent but non-contiguous lots that are physically divided by a San Diego Gas & Electric (SDG&E) access driveway that crosses the site. The primarily vacant project site is generally located to the southwest of the intersection of S. Centre City Parkway and Brotherton Road in the City of Escondido (City). The approximately 3.5-acre northern portion of the project (north lot or "Del Prado North") is located along the western side of S. Centre City Parkway, immediately south of Brotherton Road. The approximately 1.4-acre southern portion of the project (south lot or "Del Prado South") is located west of S. Centre City Parkway and south of Del Prado North, and is separated from the north lot by the SDG&E access road that leads to the utility's Felicita substation. The project site encompasses assessor's parcel numbers (APNs) 238-130-11, -26, -27, -35, and -36.

PROJECT DESCRIPTION: The proposed project includes two Tentative Subdivision Maps (due to its location across two separate lots) and a Master and Precise Development Plan addressing the following general elements: (1) construction of 113 attached town home units on two lots, with 81 residences proposed for Del Prado North and 32 residences proposed for Del Prado South; (2) construction of private streets and parking areas within the project site; (3) shared recreational facilities including pool, bathing deck, trellis, BBQ area, and restroom facility; (4) demolition and removal of an existing single-family home located in the northwest corner of the site; and (5) landscaping and bioretention basins to provide flow control and water quality treatment of storm water runoff. Del Prado North is proposed at a density of approximately 24 units per acre, while Del Prado South is proposed at a density of approximately 23 units per acre.

The project would include an amendment to the South Escondido Boulevard Neighborhood Plan to allow an exclusively residential project within the existing Commercial General (C-G) Zone. The project also would include a Zone Change from C-G to Planned Development-Residential (PD-R) to coincide with the Master and Precise Development Plan. The proposed PD zoning would allow for the establishment of unique zoning and development standards for the site.

APPLICANT: Touchstone Communities

An Initial Study has been prepared to assess this project as required by the California Environmental Quality Act (CEQA) and State CEQA Guidelines, as well as related City Ordinances and Regulations. The Initial Study and Draft Mitigated Negative Declaration (IS/MND) are on file in the City of Escondido Planning Division and can be viewed on the City of Escondido website at: http://www.escondido.org/planning.aspx.

FINDINGS: The findings of this review are that the Initial Study identified impacts related to the issues of biological resources, tribal cultural resources, geology and soils, and noise that may be potentially significant, although associated mitigation measures would reduce these potential impacts to less-than-significant levels. All other project impacts studied were found to be less than significant.

Bill Martin
Assistant Planning Director

DRAFT MITIGATED NEGATIVE DECLARATION

(Case No.: ENV15-0011)
SUPPLEMENTAL COMMENTS

INTRODUCTION

This Draft Mitigated Negative Declaration (MND) assesses the environmental effects of the proposed project, involving the construction of 113 attached residential (townhome) units located on two neighboring lots within one non-contiguous project site in the southern portion of the City of Escondido (Figure 1, *Regional Location*). The two lots (north lot or "Del Prado North" and south lot or "Del Prado South") within the approximately 4.9-acre project site are located southwest of the intersection of Brotherton Road and S. Centre City Parkway. The approximately 3.5-acre north lot is separated from the approximately 1.4-acre south lot by a driveway allowing access to the SDG&E Felicita substation (Figure 2, *Project Location*). The two project lots are primarily undeveloped; however, an existing single-family home in the northwest corner of on the north lot and an existing building pad and parking lot associated with a former restaurant that was located in the southwest portion of the north lot would be demolished and removed as part of the site preparation work (Figure 3, *Project Vicinity*). In addition to the proposed townhomes, the project would include: private streets and parking areas within the project site; shared recreational facilities including pool, bathing deck, trellis, BBQ area, and restrooms; communal landscaping, pedestrian walkways, and entry monument sculpture/signage; and a series of bioretention basins to control and treat storm water runoff. The site is generally bound by Brotherton Road to the north, S. Centre City Parkway to the east, an SDG&E substation and residential uses to the west/southwest, and commercial uses to the south (refer to Figure 3). The proposed project includes two Tentative Subdivision Maps (due to its location across two separate lots) and a Master and Precise Development Plan. An amendment to the South Escondido Boulevard Area Plan to allow for an exclusively residential project would be included in the project, as would a Zone Change from the existing Commercial General (C-G) zoning to Planned Development-Residential (PD-R) site-specific zoning and development standards, with an overall zoning density of approximately 24 dwelling units per acre. An Initial Study Environmental Checklist was prepared for the project and is included as a separate attachment to the Supplemental Comments within this report. The information contained in the Initial Study Environmental Checklist and the Supplemental Comments will be used by the City to determine potential impacts associated with the proposed project.

The detailed Supplemental Comments included in this document identify and evaluate physical impacts to the environment associated with implementing the proposed project

based on preliminary review of various environmental factors identified in the attached Environmental Checklist. In analyzing the project, it has been determined that potentially significant impacts related to biological resources, tribal cultural resources, geology and soils, and noise would occur. Based on information and documentation incorporated in the analysis, it has been concluded that this Initial Study warrants issuing a MND in draft form. The MND acknowledges that certain aspects of the project would potentially cause significant impact(s) on the environment, but that those impacts would be reduced to a less-than-significant level by incorporating identified mitigation measures. The City is the CEQA lead agency for the project.

As mandated by Section 15105 of the State CEQA Guidelines, affected public agencies and the interested public may submit comments on the MND in writing before the end of the 20-day public review period starting on March 4, 2016 and ending on March 23, 2016. Written comments on this environmental document must be submitted to the following address by 5:00 p.m. on March 23, 2016. Following the close of the public review comment period, the City will consider this MND and all received comments in determining whether to approve this project.

City of Escondido
Planning Division
201 North Broadway
Escondido, CA 92025-2798
Contact: Jay Paul, Associate Planner
Telephone: (760) 839-4537
email: jpaul@escondido.org

Hard copies of this document and all associated technical reports, plans and applicable related materials are available for review during normal hours of operation for the duration of the public review period at the City of Escondido Planning Division. The Draft MND also can be viewed on the City of Escondido website at: http://www.escondido.org/planning.aspx. The following pertinent documents related to the proposed project are also incorporated herein by reference, pursuant to Section 15150 of the State CEQA Guidelines:

- Christian Wheeler Engineering (Christian Wheeler), 2015, Geotechnical Investigation Del Prado. August 31.
- HELIX Environmental Planning, Inc. (HELIX), 2015a, Air Quality and Greenhouse Gas Emissions Calculations for the Del Prado Project, August 17.
- HELIX, 2016, Acoustical Analysis Report for the Del Prado Project, February 23.
- KOA Corporation (KOA), 2015, Del Prado Escondido Traffic Impact Study, August.
- Masson & Associates (Masson), 2015a, Preliminary Drainage Study, July 24.
- Masson, 2016, Storm Water Quality Management Plan for Del Prado, January 29.

L:\PROJECTS\T\TCH\TCH-04_Woodys\Maps\IS\Fig1_Regional.mxd TCH-04 08/13/15-EV

Regional Location

DEL PRADO PROJECT

HELIX Environmental Planning

N 0 8 Miles

Figure 1

L:\PROJECTS\TI\TCH\TCH04_Woodys\Map\IS\Fig2_Location.mxd TCH04 09/18/2015 - EV

Project Location

DEL PRADO PROJECT

HELIX Environmental Planning

N

0 2,000 Feet

Figure 2

I:\PROJECTS\TJTCH\TCH-04_Woodys\Map\IS\Fig3_Vicinity_aerial.mxd TCH-04 09/11/2015 - NG

Project Vicinity

DEL PRADO PROJECT

HELIX Environmental Planning

N 0 300 Feet

Figure 3

- QA(2) Environmental, 2005, Phase I Environmental Site Assessment for Two Vacant Lots on West Side of South Center City Parkway, May 21.
- Recuerdos Research (Recuerdos), 2015, Archaeological and Paleontological Letter Report for a Negative Survey of the Del Prado North and South Project, September 23.

DETAILED PROJECT DESCRIPTION/LOCATION

The approximately 4.9-acre project site is divided into an approximately 3.5-acre north lot and approximately 1.4-acre south lot (i.e., Del Prado North and Del Prado South). The lots are physically separated by an SDG&E driveway used to access the Felicita substation located to the east of the south lot (refer to Figure 3). The project site is located in the southern portion of the City (refer to Figures 1 and 2). All immediately adjacent areas are within city limits. The project area generally is bound by S. Centre City Parkway on the east, Brotherton Road on the north, a KinderCare child care center and commercial strip mall to the south, single- and multi-family residential uses to the west and southwest, and the SDG&E Felicita substation to the west/southwest (refer to Figure 3). Nearby uses include neighborhood commercial centers to the south, north, and east; a motel; single- and multi-family residential uses; an animal hospital, restaurants, and vacant lots.

The proposed project consists of the construction of 113 attached residential units in a 3-story row townhome design. Del Prado North has an approximate area of 3.5 acres and would consist of 81 units at a density of 24 units per acre. Del Prado South is approximately 1.4 acres and would consist of 32 units at a density of 23 units per acre. To accomplish this, an amendment to the South Escondido Boulevard Neighborhood Plan would be included in the project to allow for exclusively residential development on the currently zoned C-G site, as would a Zone Change from the existing C-G zoning with a minimum residential density of 30 dwelling units per acre to PD-R zoning with a lower residential minimum density of about 24 dwelling units per acre. The project also includes private streets and driveways for vehicular access, 274 parking stalls, private balconies, shared recreational areas including a pool and barbeque area, landscaped and hardscape areas, storm drain improvements, bioretention areas, and monument sculpture/signage. An existing single-family residence located in the northwest corner of the northern lot, along with an existing building pad and parking area associated with a restaurant formerly located in the central portion of the northern lot, would be demolished prior to construction of the proposed townhomes. The project would also restripe parts of Brotherton Road and S. Centre City Parkway, as shown on Figure 4a (*Site/Grading Plan – Del Prado North*). Brotherton Road restriping would include a two-way turning lane for a total of three lanes and the addition of a stop sign and markings just west of the intersection with S. Centre City Parkway. S. Centre City Parkway restriping would include moving the northbound stop sign and markings to the north and adding a striped median around the stop sign.

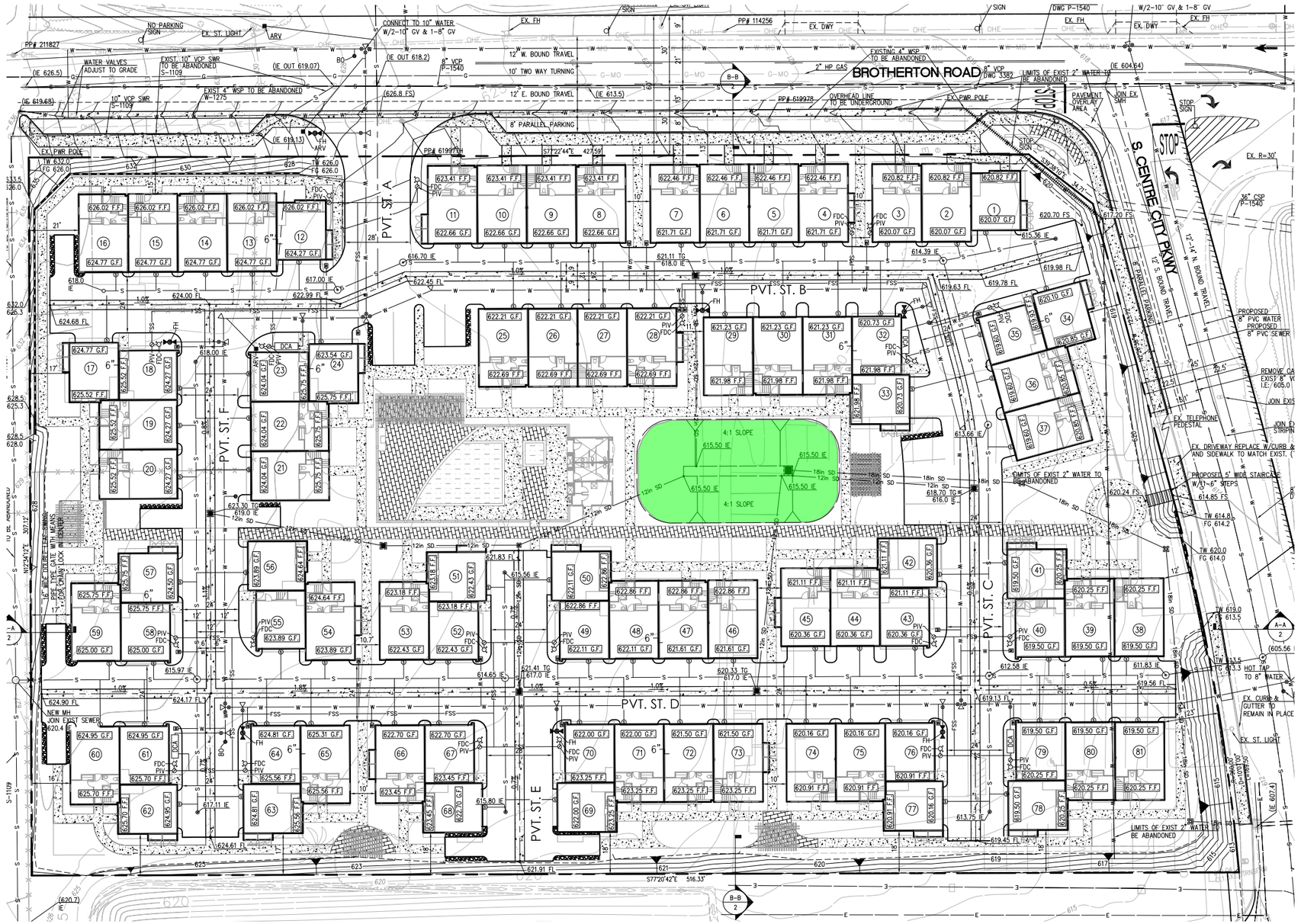
Grading and Drainage Improvements

The property is located on a gently sloping site with existing elevations ranging from 625 feet above mean sea level (AMSL) to 610 feet AMSL. Development of the site would require minimal grading beyond the remedial grading described below. The existing structures within the site would be demolished as part of the initial site preparation activities, which also would include removal of any remaining materials such as debris and vegetation (i.e., existing non-native shrubs and trees). Based on the recommendations of the site-specific Geotechnical Investigation (Christian Wheeler 2015), the upper five feet of soil from existing grade or proposed grade would be removed to expose competent underlying older alluvium or granitic rock. This would then be replaced with properly compacted fill. Fill could consist of older alluvium soils and undocumented fill from the site if relatively free of organic matter and deleterious material and debris. Deeper removals may be required if dry or loose material is encountered during grading, or if undocumented fill extends to a depth greater than five feet. If deemed necessary, import fill would consist of granular materials with a "very low" to "low" expansion potential.

Site demolition and grading activities are expected to last three months for both portions of the project site. The entirety of the Del Prado North and Del Prado South lots would be graded, removing approximately 12,000 and 2,200 cubic yards (cy), respectively. No blasting would be required. Depending on how the existing soil responds to grading operations, the north lot is expected to require the export of approximately 4,000 cy of soil, and the south lot is expected to require an import of approximately 2,000 cy of soil. Overall, there is expected to be a net export of approximately 2,000 cy of material from the combined project site. The combined number of truck trips for the grading phase of the project is estimated to be 123 round trips. Three scrapers, two bulldozers, and two loaders would be used during grading.

Two existing drainage basins are defined on the site, one on each lot. Both basins currently flow east-southeasterly onto S. Centre City Parkway into existing curb or grate inlets. Proposed on-site drainage for the north lot would allow runoff to drain via street gutters and a proposed storm drain system into a bioretention basin to be located in the middle of the north lot (Masson 2016). Proposed on-site drainage for the south lot would allow runoff to drain via the project's proposed street gutters and storm drain system toward a series of seven bioretention basins. Refer to Figure 4a and Figure 4b (*Site/Grading Plan – Del Prado South)*, respectively for proposed bioretention basin locations. Upon exiting the proposed treatment basins, flows from both lots would be conveyed via the proposed storm drain system to the existing off-site municipal storm drain system. Areas of proposed landscaping around the perimeter of the site would drain towards S. Centre City Parkway and directly into the off-site storm drain system via the associated curb and grate inlets. All runoff from the site would ultimately flow into San Dieguito River and then Lake Hodges.

Bioretention Basin



Source: Masson & Associates, Inc., 2016

1:\PROJECTS\TTCH\TCH-04_Woodys\Map\IS\Fig4a_SiteGrading_DelPradoNorth.mdd TCH-04 2/18/2016 - NG

Site/Grading Plan - Del Prado North

DEL PRADO PROJECT

Figure 4a

HELIX Environmental Planning

0 60 Feet

Source: Masson & Associates, Inc., 2016

Site/Grading Plan - Del Prado South

DEL PRADO PROJECT

HELIX Environmental Planning

0 60 Feet

Figure 4b

I:\PROJECTS\TT\TCH\TCH-04_Woodys\Map\IS\Fig4b_SiteGrading_DelPradoSouth.indd TCH-04 02/18/16 -CL

Construction of the Proposed Project

The proposed project's construction activities, including site preparation and development of both lots, are estimated to take 1.5 years. Demolition within the northern lot would include an existing single-family home. All existing on-site trees, shrubs, and vegetation (disturbed and non-native) also would be removed. Utilities are already located on the site; therefore, no new underground infrastructure is expected to be constructed. No pile driving or blasting would be required during demolition or construction. Construction equipment to be used includes bulldozers, loaders, scrapers, trenchers, compacters, forklifts, cranes, trucks, flatbeds, and generators.

Existing Structure Demolition/Removal

One single-family home is located on the site (northwest corner of north lot; refer to Figure 5a, *Site Photos – North Lot Seen from Brotherton Road*) and would require demolition prior to site grading and construction. As also shown on Figure 5a and Figure 5b, *Site Photos – North and South Lots Seen from S. Centre City Parkway*, a concrete pad and parking lot also are located on the north lot; these also would be removed at the beginning of site preparation. Any debris or deleterious material from demolition would be removed from the site. Furthermore, approximately ten existing trees and several large rocks located on the north lot (refer to Figure 5a); these also would be removed prior to grading or construction. Demolition activities are expected to last for one week. In addition to removal of the house and rocks/trees/vegetation, removal of approximately 900 square feet of asphalt, 250 square feet of concrete walkways, and 1,800 square feet of wood fencing would be required-an estimated total of seven truckloads of vegetation and other cleared materials are to be removed from the project site. It is estimated that an additional five truckloads of demolition debris would be hauled from the site. Equipment for the demolition process would require one medium sized track hoe, loader, and dump truck.

Proposed Landscaping

After completion of (and/or in concert with, as feasible) project construction activities, a landscaping and irrigation plan would be implemented for the project site by a qualified landscape contractor. The proposed planting palette would include a mixture of non-invasive and native plants requiring very low to medium water use (In-Site Landscape Architecture 2016). Approximately 100 new trees would be planted throughout the project site. Landscape water conservation measures include the selection of drought tolerant plants and installation of drip irrigation.

Summary of Project-related Equipment and Traffic

A preliminary list of project-related construction equipment includes bulldozers, loaders, track hoe, dump truck, water trucks, forklifts, skip-loaders, delivery trucks, compressors, and scrapers. As detailed above, site demolition and clearing would require hauling of an estimated 12 truckloads of vegetation, materials, and debris from the site. A total of 123 truck round trips are estimated during grading activities. Due to the size of the

project site and associated work area, it is anticipated that larger equipment types would be limited on either lot at any given time, with final equipment types and numbers to be determined by the project contractor(s). Based on the previous discussions, a total of approximately 2,000 cy of excavated material/cut hauling would be required for project construction.

Project Purpose and Objectives

The primary purpose of the proposed project is to provide housing by constructing 113 attached housing units on two vacant sites. As previously described, the project would also demolish an existing single-family residence, concrete pad, and parking lot. The project would allow continued access to the neighboring SDG&E substation via retention of an existing driveway.

PAST PUBLIC MEETINGS:

No previous public meetings have been conducted for the proposed project.

ANTICIPATED PUBLIC MEETINGS/HEARINGS:

Planning Commission:

The proposed project is tentatively scheduled for Planning Commission consideration at the April 12, 2016 Commission hearing, after the close of the public comment period. This date is subject to change. A separate public hearing notice will be mailed confirming the Planning Commission time and date.

City Council:

The proposed project is tentatively scheduled for City Council consideration at a future Council meeting after the close of the public comment period. No specific date has been set. A separate public hearing notice will be mailed confirming the City Council time and date.

PROJECT ENVIRONMENTAL SETTING:

The project site consists of two rectangular, vacant lots separated by an SDG&E access driveway (refer to Figures 5a and 5b for existing site photos). Existing vegetation present on the highly disturbed site is non-native and includes weedy grasses and forbs, shrubs, and trees such as mature eucalyptus and palms. Existing on-site development includes a single-family home located on the northwest corner of the north lot. Also on the north lot, a concrete pad and parking lot remains in place from a former restaurant which was located in the southeast portion of the lot. The topography of the site is relatively flat, with the entire site having less than a 10-percent slope. Existing elevations range from approximately 625 feet AMSL near the western site boundary of the site, to approximately 610 feet AMSL along the eastern site boundary where it slopes down towards S. Centre City Parkway. Brotherton Road meets Centre City Parkway at a signalized intersection to the northeast of the site. Access to the site is provided from Brotherton Road and

Looking south across north lot.

Looking southeast across north lot.

Looking south across east side of north lot with existing building pad and asphalt in background.

Looking southwest across north lot with existing house on the right side of the photo.

Site Photos - North Lot Seen from Brotherton Road

DEL PRADO PROJECT

Figure 5a

HELIX Environmental Planning

I:\PROJECTS\TCH\TCH-04_Woodys\Map\IS\Fig5a_SitePhotos.indd TCH-04 09/18/15 -EV

Looking north/northwest across north lot.

Looking west/northwest across north lot.

Looking west across south side of north lot/
former restaurant parking lot.

Looking southwest across south lot with SDG&E access road/
driveway on right side of photo

Site Photos - North & South Lots Seen from S. Centre City Parkway

DEL PRADO PROJECT

HELIX Environmental Planning

Figure 5b

I:\PROJECTS\TV\TCH\TCH-04_Woodys\Map\IS\Fig5b_SitePhotos.indd TCH-04 09/18/15 -EV

S. Centre City Parkway, which is a two-lane frontage road running parallel to, and immediately west of, Centre City Parkway. Centre City Parkway is designated as a Major Road and is constructed in the site vicinity as a divided roadway with two travel lanes in each direction. Brotherton Road is an unclassified street that lacks some improvements on the southern side of the street where it fronts the project site.

The project site is within an area described as transitional between low-density (primarily single-family) residential uses and commercial uses. Nearby residential sites include low-density residential developments to the west, and some medium-density developments immediately to the south as well as to the east along Centre City Parkway. Commercial developments are located along either side of Centre City Parkway within the site vicinity, with low-density residential neighborhoods located further to the east.

The five parcels that comprise the project site are zoned C-G, with a corresponding City of Escondido General Plan land use designation of General Commercial (GC). These designations are intended to accommodate a wide variety of retail and service activities along major thoroughfares (City of Escondido General Plan 2012a). As described above, the project proponent is seeking an amendment to the South Escondido Boulevard Neighborhood Plan, which currently only allows for residential uses in the C-G Zone if part of a mixed-use development. The project also proposes a Zone Change from the existing C-G zoning with a minimum residential density of 30 dwelling units per acre to PD-R zoning with a lower residential minimum density of approximately 24 dwelling units per acre. Zoning and land use designations in adjacent areas to the north, south, east and west include a mix of single- and multi-family residential and commercial.

I. AGRICULTURE AND FORESTRY RESOURCES

Significance Criteria and Impact Analysis

In determining whether impacts to forest resources, including timberland, are significant environmental effects, the City has referred to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land. The effects of a project on agriculture and forestry resources are considered significant if the proposed project would:

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;*

b. *Conflict with existing zoning for agricultural use, or a Williamson Act contract;*

c. *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g));*

d. Result in the loss of forest land or conversion of forest land to non-forest use; or

e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

The project site is identified as "Urban and Built-up Land" by the Farmland Mapping and Monitoring Program (California Department of Conservation 2013). It is not identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The project site also is not involved in a Williamson Act Contract or other agricultural land contract. The project site's land use designation and zoning are tied to commercial uses, with surrounding areas zoned and designated the same or for single- and multi-family medium-density residential uses; there are agricultural or forestry (including timber) uses on site or in the surrounding area. Furthermore, Figure VII-6 of the General Plan does not identify the Project site as an Agricultural Area (City 2012a). No conflicts with existing zoning for agricultural use, forest land, or timberland; or impacts to Farmland, agricultural activity, forest land, or timberland would occur as a result of the proposed project.

II. AIR QUALITY

Significance Criteria and Impact Analysis

Where applicable, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Impacts would be significant if the project would:

a. Conflict with or obstructs implementation of the applicable air quality plan;

The project site is located within the San Diego Air Basin (SDAB). The San Diego Air Pollution Control District (SDAPCD) manages air quality in the SDAB. Air quality plans applicable to the SDAB include the San Diego Regional Air Quality Strategy (RAQS) and applicable portions of the State Implementation Plan (SIP). The RAQS and SIP outline the SDAPCD's plans and control measures designed to attain state and federal air quality standards. The RAQS and SIP rely on San Diego Association of Government (SANDAG) growth projections, which are based in part on city and San Diego County (County) general plans. As such, projects that propose development consistent with the growth anticipated by the applicable general plan(s) are consistent with the RAQS and applicable portions of the SIP. In the event that a project proposes development which is less dense than anticipated within the General Plan, the project would likewise be consistent with the RAQS.

The applicable general plan for the City is the May 2012 General Plan (City 2012a). The General Plan Environmental Impact Report ([EIR] City 2012b) concluded that the overall increase in housing units and corresponding population associated with the 2012 General Plan would be consistent with the SANDAG projections identified for the City in the 2009 RAQS and concluded that the 2012 General Plan was therefore consistent with the RAQS. With implementation of the Neighborhood Plan amendment and zone change,

the project would result in a lower development intensity (i.e., approximately 24 dwelling units per acre) than accounted for in the 2012 General Plan. As such, the proposed project would be in conformance with the General Plan and would therefore be consistent with the RAQS and applicable portion of the SIP. Based on the foregoing, no impact would occur because the project would not conflict with implementation of applicable air quality plans.

As described below in Section X, *Land Use,* the project includes a zone change from C-G with a minimum density of 30 dwelling units per acre to a less dense PD-R residential project; as well as an amendment to the South Escondido Boulevard Neighborhood Plan, which is a General Plan overlay zone, to allow for exclusively residential development on a site zoned C-G.

b. Violate any air quality standard or contributes substantially to an existing or projected air quality violation;

Construction activities associated with the project would generate short-term emissions of volatile organic compounds (VOCs), oxides of nitrogen (NO_X), carbon monoxide (CO), and particulate matter (including both PM_{10}, and $PM_{2.5}$). Emissions would originate from off-road diesel equipment exhaust, employee and material delivery vehicle exhaust, re-entrained paved road dust, fugitive dust from land clearing, and off-gassing from paving activities. Following initial demolition, site preparation, and grading, vertical construction was assumed to occur in two phases. Phase 1 is expected to include the construction of 81 townhomes on the north lot. Construction of Phase 1 is expected to begin May 2017 and require approximately one year to complete. Phase 2 of development is expected to include the construction of 32 townhomes on the south lot. Construction of Phase 2 is expected to begin February 2018 and require approximately one year to complete. Construction activity is subject to the requirements established in Regulation 4, Rules 52, 54, 55, and 67, of the SDAPCD's rules and regulations.

Operational mobile source emissions would originate from traffic trips. California Emission Estimator Model (CalEEMod) defaults for trip length, distribution, and purpose were utilized. CalEEMod default ratios for weekday to weekend trips were applied to trip generation rates as provided in the *Del Prado Escondido Traffic Impact Study* to estimate average daily trips (ADT) (KOA 2015). Operational area source emissions would result from activities such as use of consumer products and landscaping maintenance activities. Operational energy source emissions would result from on-site natural gas usage.

The project's criteria pollutant emissions were calculated using the CalEEMod Version 2013.2.2. The emission sources include construction (off-road vehicles and fugitive dust), mobile (on-road vehicles), area (consumer products and landscape maintenance equipment), and energy (on-site natural gas usage) sources.

The General Plan EIR (as part of mitigation measure Air-1) requires all development projects to include the following construction dust control measures, which were taken

into account in the modeling assumptions. These control measures are to be included on all project construction contracts, grading permits, improvement plans, and final maps.

During grading activities for any future development within the General Plan Update planning area boundary, the on-site construction superintendent shall ensure implementation of standard best management practices to reduce the emissions of fugitive dust, including but not limited to the following actions:

- Water any exposed soil areas a minimum of twice per day, or as allowed under any imposed drought restrictions. On windy days or when fugitive dust can be observed leaving the construction site, additional water will be applied at a frequency to be determined by the onsite construction superintendent.

- Temporary hydroseeding with irrigation will be implemented on all graded areas on slopes, and areas of cleared vegetation will be revegetated as soon as possible following grading activities in areas that will remain in a disturbed condition (but will not be subject to further construction activities) for a period greater than three months during the construction phase.

- Operate all vehicles on the construction site at speeds less than 15 miles per hour (mph).

- Cover all stockpiles that will not be utilized within three days with plastic or equivalent material, to be determined by the onsite construction superintendent, or spray them with a non-toxic chemical stabilizer.

- If a street sweeper is used to remove any track-out/carry-out, only PM_{10}-efficient street sweepers certified to meet the most current South Coast Air Quality Management District Rule 1186 requirements shall be used. The use of blowers for removal of track-out/carry-out is prohibited under any circumstances.

The proposed project is smaller than the size listed in Table 4.3-12 of the General Plan EIR that would trigger the need for an air quality assessment (the trigger level for apartment uses with a density of 20 dwelling units/acre is 420 dwelling units; City 2012b). Nevertheless, anticipated project emissions were quantified to further demonstrate consistency with SDAPCD thresholds. Consistent with the General Plan EIR, emissions associated with the project were compared to SDAPCD's "Air Quality Impact Analysis (AQIA) Trigger Levels" as contained within SDAPCD Regulation II, Rule 20.2.

As shown in Table 1, *Estimated Maximum Daily Construction Emissions*, with implementation of construction Best Management Practices (BMPs) for dust control that would be incorporated as a matter or project design and in accordance with SDAPCD Rules, emissions of all criteria pollutants would be below the daily thresholds during construction. Associated construction-related impacts would be less than significant.

Table 1
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS

Construction Activity	Pollutant Emissions (pounds per day)				
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$
Demolition	1	9	7	1	1
Site Prep	3	34	26	7	5
Grading	7	83	57	11	7
North Site Paving	3	20	15	1	1
North Site Building Construction	3	21	27	3	2
North Site Architectural Coatings	2	2	3	<0.5	<0.5
South Site Paving	3	17	15	1	1
South Site Building Construction	3	19	25	3	2
South Site Architectural Coatings	1	2	3	<0.5	<0.5
Maximum Daily Emissions	***10***	***117***	***84***	***18***	***11***
AQIA Trigger Levels	75	250	550	100	55

Notes:
VOC and $PM_{2.5}$ thresholds based on County of San Diego Guidelines (County 2007)
Maximum emissions occur when Site Prep and Grading activities overlap.
Source: CalEEMod modeling by HELIX 2015 (output data is provided in Appendix A).

The main operational emissions sources associated with the project are associated with traffic; emissions associated with area sources such as consumer product use and landscaping would also be generated. Table 2, *Estimated Maximum Daily Operational Emissions*, presents a summary of maximum daily operational emissions for the proposed project at full buildout, and compares these emissions with the SDAPCD AQIA Trigger Levels. As shown therein, operational emissions for the proposed project would be substantially below the significance threshold for all criteria pollutants. Therefore, operation of the project would not violate any air quality standard or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment. Impacts related to project operation would be less than significant.

Table 2
ESTIMATED MAXIMUM DAILY OPERATIONAL EMISSIONS

Source	Pollutant Emissions (pounds per day)				
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	8	<0.5	9	<0.5	<0.5
Energy	<0.5	<0.5	<0.5	<0.5	<0.5
Mobile	3	7	33	6	2
Total Daily Emissions	***11***	***8***	***42***	***6***	***2***
AQIA Trigger Levels	75	250	550	100	55

Notes:
VOC and $PM_{2.5}$ thresholds based on County of San Diego Guidelines (County 2007)
Source: CalEEMod modeling by HELIX 2015 (output data is provided in Appendix A).

Due to the anticipated phasing, it is possible that occupation of Del Prado North may occur concurrently with construction of Del Prado South on the south lot. Table 3, *Concurrent Operational and Construction Emissions*, shows the worst-case daily emissions from this potential overlap. As shown therein, the combined construction and operational emissions would be below the significance threshold for all criteria pollutants.

Table 3
CONCURRENT OPERATIONAL AND CONSTRUCTION EMISSIONS

Source	Pollutant Emissions (pounds per day)				
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$
North Site Operation	4	5	30	4	1
South Site Construction	4	19	27	3	2
Total Daily Emissions	***8***	***24***	***57***	***7***	***3***
AQIA Trigger Levels	75	250	550	100	55

Notes:
VOC and $PM_{2.5}$ thresholds based on County of San Diego Guidelines (County 2007)
Source: CalEEMod modeling by HELIX 2015 (output data is provided in Appendix A).

As shown in Tables 1 through 3, emissions of criteria pollutants during construction and/or operation of the project, whether or not there is an overlap, would not exceed the daily thresholds for any of the criteria pollutants.

Based on the fact that construction emissions would be temporary and localized within the immediate project vicinity, as well as the data presented in the tables above, along with implementation of the noted measures as part of the project design, project-related construction emissions would result in a less-than-significant impact to air quality.

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);*

d. *Expose sensitive receptors to substantial pollutant concentrations;*

A cumulative impact arises when two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant impacts, meaning that the project's incremental effects must be viewed in connection with the effects of past, current, and probably future projects.

The generation of daily construction and operational emissions associated with cumulative development could result in a cumulative significant impact associated with the cumulative net increase of ozone, PM_{10}, and $PM_{2.5}$ for which the region is in non-attainment. The proposed project would be consistent with the RAQS, which is intended to bring the SDAB into attainment for all criteria pollutants. In addition, the daily emissions generated during construction and operation of the project would not exceed the significance thresholds that have been established as quality of life standards. Therefore, the project's contribution to cumulative air quality impacts would be less than significant.

Impacts to sensitive receptors are typically analyzed for operational period CO hotspots and exposure to diesel particulate matter (DPM). An analysis of the project's potential to expose sensitive receptors to these pollutants is provided below.

Carbon Monoxide Hotspots

A CO hotspot is an area of localized CO pollution caused by severe vehicle congestion on major roadways, typically near intersections. If a project increases average delay at signalized intersections operating at Level of Service (LOS) E or F or causes an intersection that would operate at LOS D or better without the project to operate at LOS E or F with the project, a quantitative screening is required. According to the *Del Prado Escondido Traffic Impact Study*, all are calculated to continue to operate at acceptable LOS with the project (KOA 2015). There would be no potential for a CO hotspot or exposure of sensitive receptors to substantial, project-generated local CO emissions. Associated hotspot impacts would be less than significant.

Exposure to Diesel Particulates

Construction activities would result in short-term, project-generated emissions of DPM from the exhaust of off-road, heavy-duty diesel equipment. The California Air Resources Board (CARB) identified DPM as a Toxic Air Contaminant (TAC) in 1998. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual (MEI) are higher if a fixed exposure occurs over a

longer time period. Health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, are typically based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project.

As presented earlier in Table III-1, maximum daily particulate emissions, which include DPM, would be relatively low when compared to the SDAPCD AQIA Trigger Level. Additionally, the construction period would be relatively short (less than 2 years), especially when compared to 70 years. Combined with the highly dispersive properties of DPM, construction-related emissions of TACs would not expose sensitive receptors to substantial emissions of TACs. Associated impact would be less than significant.

As the proposed project would involve the development of multi-family residential uses, project operation would not introduce any new stationary sources of TACs such as diesel-fueled backup generators that are more commonly associated with large commercial and industrial uses. In addition, the project is sited more than 2,000 feet away from the nearest freeway, well over the 500-foot threshold set by CARB to avoid exposure of residents to TACs. The site is not within buffer distances included in the General Plan EIR that would require preparation of a Health Risk Assessment (within 500 feet of a waste transfer facility or one mile of industrial land uses, medical facilities, or research and development facilities that generate a substantial source of TACs).

As such, the proposed project would not have the potential to expose sensitive receptors to TACs from mobile sources to an extent that health risks could result and associated impacts would be less than significant.

e. Create objectionable odors affecting a substantial number of people.

Project construction could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. Diesel exhaust and VOCs would be emitted during construction of the project. The odors of these emissions are objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not be at a level that would affect a substantial number of people. Further, construction operations would be temporary. As a result, impacts associated with odors during construction would be less than significant.

Land uses associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting activities, refineries, landfills, dairies, and fiberglass molding operations. The project would not place sensitive receptors within a close proximity to the listed odor sources. Impacts associated with odor sources would be less than significant.

Based on the foregoing discussions, significant air quality impacts are not anticipated and mitigation measures are not required.

III. BIOLOGICAL RESOURCES

Significance Criteria and Impact Analysis

The effects of a project on biological resources are considered to be significant if the proposed project would:

a. *Have a substantial adverse effect 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 Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS);*

b. *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS;*

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;*

The project site is surrounded by urbanized development (refer to Figure 3). The site itself consists of partially developed, heavily disturbed vacant lots with non-native forbs and grasses, non-native ornamental vegetation, and several mature eucalyptus trees. The majority of the undeveloped portions of the site are characterized by disturbed habitat, consisting of non-native, ruderal (weedy), herbaceous vegetation typical of fallow, vacant lots in urbanized areas of the region. The site is currently subject to regular disturbance associated with noise and lighting from the surrounding developed areas; vegetation maintenance and mowing activities; and pedestrian and off-highway vehicle use. Wildlife species with potential to use the site are expected to be limited to common, non-sensitive wildlife typical of urbanized areas. All of the existing vegetation on the site would be removed prior to the construction of the project. No wetlands as defined by Section 404 of the Clean Water Act occur on the site or would be directly impacted by the proposed project. No sensitive natural communities (including riparian habitat), sensitive plant or animal species, potential jurisdictional waters and wetlands (federally protected or otherwise), or other sensitive biological resources are known to occur on the site. Impacts to sensitive habitat, wetlands, or natural communities would not occur.

While eucalyptus trees are not considered sensitive, they do provide potential nesting habitat for sensitive raptors which are protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFG Code). As such, removal of the existing eucalyptus trees would represent a potentially significant impact if removal occurs during the raptor nesting season (January 15 through July 31). Direct impacts could occur as a result of removal of vegetation supporting an active nest. There also are existing eucalyptus trees immediately off site that could provide nesting habitat; accordingly, indirect impacts could occur as a result of construction noise and vibration

in the immediate vicinity of an active nest, such that the disturbance results in a nest failure. These impacts would be considered significant in violation of the MBTA and CFG Code and would require mitigation in the form of avoidance of nesting raptors.

Mitigation Measures

Because the project would have the potential to impact common (non-sensitive) nesting raptors, the following measure shall be implemented:

BIO-1 Avoidance of Nesting Raptors. To prevent impacts to nesting raptors protected under the federal MBTA and CFG Code, the City shall enforce the following:

1. If construction occurs during the raptor nesting season (January 15 through July 31), and where any mature tree or structure capable of supporting a raptor nest occurs within 500 feet of proposed project construction activities, the project applicant shall retain a qualified biologist to conduct a pre-construction survey for nesting raptors prior to clearing, grading and/or construction activities. The survey shall be conducted within 72 hours prior to the start of construction. The project applicant shall not be responsible for physically surveying off-site habitat where access is not permitted; the qualified biologist shall visually inspect these off-site areas with the aid of binoculars or a spotting scope.

2. If any nesting raptors are present on or within 500 feet of the proposed project construction area, the project applicant shall retain a qualified biologist to flag and demarcate the location of all nesting raptors and monitor construction activities. Active nests within off-site areas where access is not permitted shall not be flagged or demarcated. Temporary avoidance of active raptor nests, including the enforcement of an avoidance buffer of 500 feet, shall be required until the qualified biologist has verified that the young have fledged or the nest has otherwise become inactive. The avoidance buffer may be reduced at the discretion of the qualified biologist and with written consent from the USFWS and CDFW. If the qualified biologist determines that a narrower buffer is warranted, the qualified biologist shall provide USFWS and CDFW with a written explanation as to why. Based on the submitted explanation, USFWS and CDFW would determine whether to allow the narrower buffer. Avoidance buffers for active nests within off-site areas where existing developments already occur shall not be required.

With implementation of mitigation measure BIO-1, impacts to sensitive species would be less than significant.

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 developed project site is within a heavily urbanized commercial corridor and immediately adjacent to moderate-density residential areas; it does not serve or contribute to any wildlife corridors or linkages in the local or regional area. The disturbed project site does not contain any native natural communities and does not support native wildlife corridors or nursery sites, and building the proposed project would not impede the use of nursery sites in the local or regional area. No associated impacts would occur.

e. *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or*

Section 33-1068 of Article 55 in the Escondido Zoning Code places restrictions on the removal of vegetation, including the removal of mature trees. The project grading permit would serve as the vegetation removal permit. Trees would be replaced in conformance with the City's grading ordinance at a minimum 1:1 ratio. Associated impacts would be less than significant.

f. *Conflict with provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved state, regional, or local habitat conservation plan.*

The generally vacant project site is located on developed/disturbed land and entirely surrounded by existing urbanized development. The site is located within the boundaries of the Draft Escondido Multiple Habitat Conservation Program (MHCP) Subarea Plan; however, this plan has not yet been approved or adopted. Nevertheless, the site occurs entirely within an urbanized area and is not located within any of the Focused Planning Areas or other areas of biological importance identified in the MHCP. Therefore, the project would not conflict with any Habitat Conservation Plan, Natural Conservation Community Plan, or any other approved local, regional, or state habitat conservation plan. No impacts would occur.

IV. CULTURAL RESOURCES

An Archaeological and Paleontological Letter Report for a Negative Survey of the Del Prado North and South lots has been prepared for the proposed project by Recuerdos Research (Recuerdos 2015). The letter report documents the results of a records search and September 2015 field survey. The letter report is summarized below and the complete report is included in Appendix B of this document.

Significance Criteria and Impact Analysis

The effects of a project on cultural resources, including historical/archaeological, paleontological, and tribal cultural resources, are considered to be significant if the proposed project would:

a. *Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5;*

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5;

Historical Resources

According to §15064.5 of the State CEQA Guidelines, substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired. The north lot of the project site contains one house that was constructed in 1953 (Recuerdos 2015). The house is a single-family home typical of suburban homes in the area. The house does not represent a unique or outstanding architectural style and is not associated with persons important in the history of Escondido. Furthermore, the existing house is not identified as a significant cultural historic site in the City's General Plan EIR, and the Resource Conservation chapter of the General Plan does not designate the site as significantly historic or as part of the designated Old Escondido Neighborhood. No historical resources were recorded at the South Coast Information Center or as a result of the field survey (Recuerdos 2015). No impacts to historical resources would occur.

Archaeological Resources

Although the Recuerdos report notes that it is known that several Luiseño and Kumeyaay Indian sites are located along Escondido Creek to the north and the San Dieguito River to the south, it further notes that past research has indicated that the immediate vicinity was rarely inhabited. The results of the records search were negative; no archaeological resources were recorded on or near the project site; the field survey also was negative (Recuerdos 2015). Due to the partially developed and overwhelmingly disturbed nature of the project site, the potential for undiscovered subsurface archaeological resources is low; however, the potential still exists for discovery of unknown resources during site work. In the unlikely event that subsurface resources are encountered during construction activities, the project would comply with §15064.5 of the State CEQA Guidelines. Associated impacts would be less than significant.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Paleontological Resources

The proposed project is located in the Peninsular Ranges Geomorphic Province in an area underlain by Cretaceous granitic rock. Additional geologic/surficial units present within the site include artificial fill (e.g., in association with existing/previous development), and older alluvium (Christian Wheeler 2015; refer to Section VI and Appendix C for additional discussion of geologic units). The described geologic setting with a mixture of recent alluvial soils and older granitic base soils generally is not conducive to significant paleontological remains (Recuerdos 2015), as paleontological resources are typically associated with sedimentary rock and related deposits. Because

of the igneous nature of local bedrock and the age and origin of fill deposits, these materials exhibit no potential for the occurrence of sensitive paleontological resources. Specifically, igneous rocks have a molten origin and fill deposits are recent in age and generated through mechanical processes, with neither of these materials conducive to fossil formation/preservation. Furthermore, the general area is not known to have produced significant or substantial paleontological discoveries (Recuerdos 2015). Based on information provided in the City General Plan EIR(City 2012b), older alluvial deposits exhibit a moderate potential for sensitive paleontological resources, with units rated as moderate "…known to contain paleontological localities…" and "…judged to have a strong, but often unproven, potential for producing unique fossil remains." While this information may apply in some areas, the existing soils on the site exhibit no potential for the occurrence of sensitive paleontological resources; furthermore, Escondido and the general project area is not known to contain or have produced any significant paleontological resources or discoveries. Accordingly, the potential for discovery of unknown fossils during project ground disturbance would be considered relatively low to negligible. Associated impacts would be less than significant and no mitigation would be necessary.

Unique Geological Features

Unique geological features generally are defined to include geologic structures, formations, or other features that exhibit unusual or important characteristics in the context of scientific information (e.g., rare geologic/mineral assemblages or structural features), economic considerations (e.g., economically valuable mineral deposits), or cultural perception (e.g., prominent, unusual, and/or aesthetically pleasing rock outcrops or exposures). Because the project site is generally level and does not encompass any distinct or unique geologic characteristics, information or features as described, no associated impacts would result from proposed development.

d. Disturb any human remains, including those interred outside of formal cemeteries.

No cemeteries, formal or informal, have been identified on site or within the project vicinity. It is not anticipated that human remains would be encountered on the project site during construction-related activities. If human remains are encountered during the excavation and remedial grading stage of the project, however, the project would comply with §15064.5 of the State CEQA Guidelines, California Public Resources Code § 5097.98, and California Health and Safety Code § 7050.5 regarding the discovery and disposition of human remains. Associated impacts would be less than significant.

e. Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code § 21074?

Consultation with a California Native American Tribe that has requested such consultation with a lead agency may assist the lead agency, in this case the City, in determining whether the project may adversely affect Tribal Cultural Resources and, if so, how such effects may be avoided or mitigated. Whether the project would cause a

substantial adverse change in a site, feature, place, cultural landscape, sacred place, or object, with cultural value to a California Native American Tribe (i.e., Tribal Cultural Resource), must be addressed in this document, whether or not formal consultation has been requested by a Native American Tribe.

In accordance with Assembly Bill 52, the City of Escondido notified three Native American Tribes (San Luis Rey Band of Mission Indians; Rincon Band of Luiseño Indians; and Soboba Band of Luiseño Indians) that previously requested notification of proposed projects within the City. Representatives of the San Luis Rey Band of Mission Indians responded to the City and requested that formal consultation with the Tribe be conducted to discuss the cultural analysis prepared for the project, potential project impacts to Tribal Cultural Resources, and mitigation measures to reduce potential impacts to a less than significant level. The results of the consultation indicated that the project has the potential to impact Tribal Cultural Resources within the project area. Potential impacts to unidentified and unknown Tribal Cultural Resources within the project area are considered potentially significant; accordingly, the following mitigation measures, which were developed during the described consultation, would be implemented by the project applicant to reduce such impacts to below a level of significance:

CUL-1 The City of Escondido Planning Division ("City") recommends the applicant enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe that is traditionally and culturally affiliated with the Project Location ("TCA Tribe") prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources, and (2) to formalize protocols and procedures between the Applicant/Owner and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains, funerary objects, cultural and religious landscapes, ceremonial items, traditional gathering areas and cultural items, located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.

CUL-2 Prior to issuance of a grading permit, the applicant shall provide written verification to the City that a qualified archaeologist and a Native American monitor associated with a TCA Tribe have been retained to implement the monitoring program. The archaeologist shall be responsible for coordinating with the Native American monitor. This verification shall be presented to the City in a letter from the project archaeologist that confirms the selected Native American monitor is associated with a TCA Tribe. The City, prior to any pre-construction meeting, shall approve all persons involved in the monitoring program.

CUL-3 The qualified archaeologist and a Native American monitor shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.

CUL-4 During the initial grubbing, site grading, excavation or disturbance of the ground surface, the qualified archaeologist and the Native American monitor shall be on site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.

CUL-5 In the event that previously unidentified Tribal Cultural Resources are discovered, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.

CUL- 6 If a potentially significant tribal cultural resource is discovered, the archaeologist shall notify the City of said discovery. The qualified archaeologist, in consultation with the City, the TCA Tribe and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the tribal cultural resource's treatment and disposition shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor and be submitted to the City for review and approval.

CUL-7 The avoidance and/or preservation of the significant tribal cultural resource and/or unique archaeological resource must first be considered and evaluated as required by CEQA. Where any significant Tribal Cultural Resources and/or unique archaeological resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, then a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor, and shall be subject to approval by the City. The archaeological monitor, in consultation with the Native American monitor, shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.

CUL-8 As specified by California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted on-site and in situ where they were discovered by a forensic anthropologist, unless the forensic anthropologist and the Native American monitor agree to remove the remains to an off-site location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains in accordance with California Public Resources Code section 5097.98. The Native American remains shall be kept in-situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur on-site in the presence of a Native American monitor.

CUL-9 If the qualified archaeologist elects to collect any tribal cultural resources, the Native American monitor must be present during any testing or cataloging of those resources. Moreover, if the qualified Archaeologist does not collect the cultural resources that are unearthed during the ground disturbing activities, the Native American monitor, may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions. Any Tribal Cultural Resources collected by the qualified archaeologist shall be repatriated to the TCA Tribe. Should the TCA Tribe or other traditionally and culturally affiliated tribe decline the collection, the collection shall be curated at the San Diego Archaeological Center. All other resources determined by the qualified archaeologist, in consultation with the Native American monitor, to not be tribal cultural resources, shall be curated at the San Diego Archaeological Center.

CUL-10 Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner to be submitted with the report. The report will include California Department

of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.

V. GEOLOGY AND SOILS

Significance Criteria and Impact Analysis

A Geotechnical Investigation was prepared for development of the project site by Christian Wheeler (2015) and is summarized below, with the complete report included as Appendix C of this analysis. The Geotechnical Investigation concludes that the site is " suitable for the proposed development provided the geotechnical recommendations presented in this report are followed." Accordingly, the report identifies a number of recommendations associated with seismic and non-seismic concerns, to address potential impacts and provide conformance with associated regulatory standards. These include efforts such as standard plan review; pre-construction meetings; design and construction measures to implement regulatory/industry criteria; remedial grading; and site-specific geotechnical observations and testing during project excavation, grading, and construction activities. Applicable geotechnical recommendations are summarized below as appropriate, with additional detail provided in Appendix C.

The effects of a project on geology and soils are considered to be significant if the proposed project would:

a. *Expose people or structures to potentially 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);*
    ii. *Strong seismic ground shaking;*
    iii. *Seismic-related ground failure, including liquefaction; or*
    iv. *Landslides.*

Ground Rupture

The project Geotechnical Investigation concludes that "no active or potentially active faults are known to traverse the subject site.". Active faults are defined as those exhibiting historic seismicity or displacement of Holocene materials (less than approximately 11,000 years old), while potentially active faults have no historic seismicity and displace Pleistocene (between approximately 11,000 and 2 million years old) but not Holocene strata. The closest active faults to the project site are associated with the Newport-Inglewood and Rose Canyon faults, approximately 15 miles to the west. The noted Earthquake Fault Zone designations are generally intended to "[r]egulate development near active faults so as to mitigate the hazard of surface fault rupture" (California Geological Survey [CGS], 2007). The closest CGS Earthquake

Fault Zones to the project site are located along onshore sections of the Rose Canyon Fault approximately 20 miles to the southwest. Based on the described conditions, the potential for on-site ground rupture is considered negligible. Accordingly, associated potential impacts would be less than significant.

Ground Acceleration

The project site is within a seismically active region, and is potentially subject to strong ground acceleration (ground shaking) from earthquake events along major regional faults. Ground acceleration is expressed in terms of "g" forces, where g equals the acceleration due to gravity. The project Geotechnical Investigation notes that "…the site is located in an area that is relatively free of geological hazards that will have a significant effect on the proposed development…" but the report also concludes that "…the most likely geological hazard that could affect the site is ground shaking due to seismic activity along one of the regional active faults." The analysis concludes that "…construction in accordance with the requirements of the most recent edition of the California Building Code (CBC) and the local government agencies should provide a level of life-safety suitable for the type of development proposed." (Christian Wheeler 2015).

The Geotechnical Investigation goes on to state that grading should conform to the guidelines in Appendix J of the CBC, the minimum requirements of the City of Escondido, and the recommended specifications and provisions of the project-specific report, including: (1) appropriate site preparation (e.g., clearing/grubbing and removal of buried structures and significant root material); (2 implementation of geotechnical observation/testing and remedial grading as applicable; (3) appropriate excavation parameters, such as removal/replacement and/or recompaction of unsuitable materials including fill and applicable areas of older alluvium (at minimum, the upper five feet of existing soil shall be removed unless granitic rock is exposed at the base of removal); (5) proper engineered fill composition/placement methodology; and (6) appropriate design and construction of structures, foundations, trenches, manufactured slopes, retaining walls, pavement, and drainage/irrigation facilities (with detailed recommendations provided in Appendix C). These recommendations, which would be implemented as a matter of project design, are to be included on all project construction contracts, grading permits, improvement plans, and final maps. Based on conformance with these recommendations and related regulatory standards as part of the project design and construction requirements, potential impacts related to seismic ground acceleration from implementation of the proposed project would be less than significant.

Liquefaction and Related Effects

Liquefaction and related effects such as dynamic settlement can be caused by seismic ground shaking. Loose (cohesionless), saturated, and granular (low clay/silt content) soils with relative densities of less than approximately 70 percent are the most susceptible to these effects. Liquefaction results in a rapid pore-water pressure increase and a corresponding loss of shear strength, with affected soils behaving as a viscous liquid. Surface manifestations from these events can include loss of support for structures/foundations, excessive (dynamic) settlement, and other effects such as

lateral spreading (horizontal displacement on sloped surfaces as a result of underlying liquefaction). Based on such factors as depth to the groundwater table, the dense nature of on-site alluvial deposits and underlying bedrock, and grain-size distribution, the project Geotechnical Investigation concludes that the near-surface soils encountered at the site are not considered susceptible to liquefaction and related effects" As a result, potential impacts from liquefaction and related effects associated with project implementation would be less than significant.

Landslides

The project site and adjacent areas are relatively level, with on-site elevations ranging from approximately 607 to 635 feet above mean sea level. However, the project Geotechnical Investigation notes that the project site is located in Relative Landslide Susceptibility Area 2 according to the *Landslide Hazards in the Northern Part of the San Diego Metropolitan Area* (Tan 1995). Although Area 2 is considered to be "marginally susceptible" to landsliding, the project Geotechnical Investigation concludes that "…the potential for slope failures within the site is very low." Accordingly, potential impacts related to landslide hazards associated with project implementation would be less than significant.

b. Result in substantial soil erosion or the loss of topsoil

Implementation of the proposed project would increase the potential for erosion and transport of eroded material (sedimentation) both within and downslope of the project site. Specifically, proposed activities may involve: (1) removal of surface stabilizing features (e.g., vegetation); (2) excavation of compacted materials; and (3) redeposition of excavated and/or imported material as backfill in proposed development areas. While graded/excavated areas and fill materials would be stabilized through efforts such as compaction and installation of structures/hardscape and landscaping, erosion potential would be higher in the short-term than for existing conditions. Developed areas would be especially susceptible to erosion between the beginning of grading/construction and the installation of pavement or establishment of permanent cover in landscaped areas. Erosion and sedimentation are not considered to be significant long-term concerns for the proposed project, as developed areas would be stabilized through installation of structures/hardscape and landscaping as noted. The off-site transport of sediment also could potentially result in effects to downstream receiving water quality, such as increased turbidity and the provision of a transport mechanism for other contaminants that tend to adhere to sediment particles (e.g., hydrocarbons). Additional discussion of potential water quality effects associated with project-related erosion and sedimentation is provided below in Section IX.

Short-term erosion and sedimentation impacts would be addressed through conformance with applicable elements of the City storm water program and related National Pollutant Discharge Elimination System (NPDES) standards. Specifically, this would entail implementing appropriate measures to comply with requirements identified in sources that may include: (1) Section 33 of Article 55 (Grading and Erosion Control) of the City Municipal Code; (2) the City Jurisdictional Urban Runoff Management Plan

(JURMP, 2008) and related storm water standards; and (3) the NPDES Construction General Permit (NPDES No. CAS000002, State Water Resources Control Board [SWRCB] Order 2009-0009-DWQ, as amended).

Conformance with the noted NPDES and City standards is required prior to development of applicable sites exceeding one acre, and typically includes measures such as implementing an approved Storm Water Pollution Prevention Plan (SWPPP), an associated Construction Site Monitoring Program (CSMP), employee training, and minimum BMPs, as well as a Rain Event Action Plan (REAP) for applicable projects (i.e., those in Risk Categories 2 or 3 outlined below). Under the Construction General Permit, project sites are designated as Risk Level 1 through 3 based on site-specific criteria (e.g., erosion potential and receiving water risk), with Risk Level 3 sites requiring the most stringent controls. Based on the site-specific risk level designation, the SWPPP and related plans/efforts identify detailed measures to prevent and control the off-site discharge of pollutants (including sediment). Depending on the risk level, these may include mandatory technology-based action levels, effluent limitations, and advanced treatment systems (ATS). Specific pollution control measures require the use of best available technology (BAT) economically achievable and/or best conventional pollutant control technology (BCT) levels of treatment, with these requirements implemented through applicable BMPs. While site-specific measures vary with conditions such as risk level, proposed grading, and slope/soil characteristics, detailed guidance for construction-related BMPs is provided in the Construction General Permit, as well as additional sources including the City of Escondido Standard Urban Storm Water Mitigation Plan (SUSMP, 2011), and the California Storm Water Quality Association (CASQA) Storm Water Best Management Practices Handbooks (CASQA 2009). Specific requirements for the proposed project under this permit would be determined during SWPPP development, after completion of project plans and application submittal to the SWRCB.

Typical erosion and sediment control measures that may be required in the project SWPPP include the following: (1) seasonal grading restrictions during the rainy season (October 1 to April 30) for applicable areas; (2) preparation and implementation of a CSMP and, if applicable, a REAP to provide enhanced erosion and sediment control measures prior to predicted storm events; (3) use of erosion control/stabilizing measures such as geotextiles, mats, fiber rolls, or soil binders; (4) use of sediment controls to protect the site perimeter and prevent off-site sediment transport, including measures such as silt fencing, fiber rolls, gravel bags, temporary sediment basins, street sweeping, stabilized construction access points and sediment stockpiles, and use of properly fitted covers for sediment transport vehicles; (5) compliance with local dust control measures, and (6) implementation of additional BMPs as necessary to ensure adequate erosion/sediment control and regulatory conformance.

Based on implementation of appropriate erosion and sediment control BMPs as part of, and in conformance with, the project SWPPP and related City and NPDES requirements, associated potential erosion and sedimentation impacts would be avoided or reduced below a level of significance.

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;*

Based on the previously described nature and location of proposed facilities and the Geotechnical Investigation conclusions, project area soil and geologic conditions are generally suitable for proposed development, provided that proper design and construction measures are implemented. Potential liquefaction (and related effects such as lateral spreading) and landslide impacts are discussed above in association with items a.iii and a.iv of this section.

Potential impacts related to subsidence are not significant, based on the following considerations: (1) subsidence is typically associated with conditions such as groundwater (or other fluid) withdrawal, with such activities not proposed as part of the project and shallow groundwater not observed or expected to occur on site; (2) while the noted effects can also be associated with loading related to placement of larger surface structures, the project site is underlain by dense alluvium and granitic bedrock, which are generally not subject to subsidence; and (3) potentially less stable materials present within the project area (fill and surficial alluvium) would be addressed through the required inclusion of geotechnical recommendations and conformance with applicable regulatory requirements (as described in association with item a of this section and the project Geotechnical Investigation in Appendix C). Specifically, such measures would include provisions related to the removal of unsuitable materials; composition and placement methodology (e.g., compaction) of materials used as backfill; and appropriate seismic, manufactured slope, retaining wall, drainage, structure, foundation, and pavement design, pursuant to standards from regulatory/industry sources including the City and CBC. Conformance with the described geotechnical recommendations and regulatory/industry standards as a matter of project design would effectively avoid or reduce potential subsidence impacts below a level of significance.

Temporary excavations associated with proposed project construction (e.g., utility trenches) may involve vertical or near-vertical walls, and can exhibit instability and the potential for collapse related to loose or unstable soil and geologic materials. Such instability can be exacerbated through effects such as the potential occurrence of jointing and fracturing in local bedrock. The project Geotechnical Investigation identifies a number of recommendations to address potential instability in temporary excavations, including conformance with applicable Occupational Safety and Health Administration (OSHA) requirements such as slope limitations and shoring requirements. Conformance with these recommendations and associated regulatory requirements would avoid or reduce potential impacts related to temporary excavation stability below a level of significance.

An additional consideration for geologic stability involves the improper use of oversize materials in fill, which can result in effects such as differential compaction (varying levels of compaction over short distances) that may adversely affect surface and subsurface structures. The project Geotechnical Investigation identifies a number of

standard industry recommendations to address these potential effects, including maximum rock size restrictions for fill materials, and inspection of fill by the project geotechnical engineer. Conformance with these recommendations and related regulatory (CBC) and industry standards would avoid or reduce potential impacts from oversize materials below a level of significance.

Corrosion testing for sulfate content in on-site materials was conducted as part of the project Geotechnical Investigation (Appendix C). Based on the resulting laboratory analysis, the tested parameters were below established CBC thresholds for corrosive concerns related to sulfate; such levels are considered "negligible." The analysis also notes, however, that "…Christian Wheeler Engineering does not practice corrosion engineering…and we recommend that the client retain an engineering firm that specializes in this field to consult with them on this matter." Should such soils be present on the site, long-term exposure to soils with corrosive properties related to sulfates, as well as other factors including pH, chloride and resistivity values (i.e., the ability to restrict, or resist, electric current) could potentially result in deterioration and eventual failure of underground concrete and metal structures (such as foundations or utility lines); this would represent a potentially significant corrosive soils impact. Potentially significant impacts associated with hazards related to corrosive soils would be reduced to a level below significance through the following mitigation measure.

GEO-1 Implementation of Geotechnical Recommendations. The site-specific Geotechnical Investigation includes a number of general and specific recommendations that shall be implemented in the design and construction of the proposed project to minimize (a) the potential for exposure to soils with corrosive properties and associated potential for deterioration and eventual failure of underground concrete and metal structures, and (b) the potential concern associated with expansive soils on site, as summarized herein. Corrosion recommendations that shall be implemented include, but are not limited to: (1) further testing by a firm that specializes in corrosion engineering to determine next steps associated with corrosive soils, if any. Expansive soils recommendations that shall be implemented include, but are not limited to: (1) removal of unsuitable materials during site preparation and grading; (2) confirmation that fill material exhibits "very low" or "low" expansion potential (per CBC standards); and (3) testing of proposed fill materials for suitability (including expansion potential). Finally, site grading plans shall be reviewed by a qualified geotechnical consultant prior to final design submittal to determine if additional analysis and recommendations beyond those summarized above (and listed in full in the Geotechnical Investigation) are required. Any and all geotechnical recommendations shall be fully implemented in accordance with applicable industry/regulatory standards (e.g., the CBC requirements).

Implementation of this measure would effectively avoid or reduce potential impacts from corrosive soils to below a level of significance.

d. Be located on expansive soil, as defined in Section 1802.3.2 of the International Building Code, creating substantial risks to life or property;

Expansive (or shrink-swell) behavior in surface or near-surface materials is attributable to the water holding capacity of clay materials. Such behavior can adversely affect structural integrity (including underground pipelines) through shifting of foundations or supporting materials during the shrink-swell process. The project Geotechnical Investigation acknowledges that the anticipated foundation soils are expected to have a low expansive potential based on CBC criteria. Implementation of mitigation measure GEO-1, above, however, would reduce or avoid potentially significant impacts associated with construction on potentially expansive soils to below a level of significance; no additional mitigation is required.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

The proposed project would include connections to the existing municipal sewer system, and would not involve the use of septic tanks or alternative wastewater disposal systems. Accordingly, no related impacts would result from project implementation.

VI. GREENHOUSE GAS EMISSIONS

Significance Criteria and Impact Analysis

a. Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment; or

b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

The proposed project would generate GHG emissions from a variety of sources. First, GHG emissions would be generated during construction of the project. Once fully operational, the project's operations would generate GHG emissions from both area sources and mobile sources. Indirect emissions associated with the proposed residential uses include electrical consumption, water usage and wastewater generation, and solid waste disposal.

Based on a review of Appendix B of the *City of Escondido Greenhouse Gas Emissions Adopted CEQA Thresholds and Screening Tables* document (City 2013), it was determined that it would generally require up to 120 condominium/townhome dwelling units in order to generate 2,500 metric tons (MT) of carbon dioxide equivalents (CO_2e) per year. Given that the proposed project would only consist of the development of 113 condominium/townhome dwelling units, it is concluded that the GHG emissions generated by the project would be less than significant, provided that the project implements the efficiency measures required in the Escondido Climate Action Plan (E-CAP; City 2013) CEQA Thresholds for small projects:

- Energy efficiency of at least five percent greater than adopted Title 24 requirements; and
- Water conservation measures that match the CALGreen Building Code in effect as of January 2011.

As noted in the list of project design measures (see pages 59-61 of this MND), the project would achieve energy efficiency beyond current 2014 Title 24 standards. The water conservation measures required in the current 2014 CALGreen building code match or exceed the water conservation measures from the 2011 CALGreen building code. Nonetheless, pursuant to full disclosure under CEQA, the estimated construction and operational GHG emissions associated with the project have been quantified as part of this analysis to further confirm that the total annual emissions of the project would not exceed 2,500 MT CO_2e per year.

The proposed project consists of the construction of 113 condominium/townhouse dwelling units. The project's construction GHG emissions were estimated using the same assumptions and methods as the air quality analysis and shown in Table 4, *Estimated Project Related GHG Emissions.* As shown in Table 4, the total GHG emissions that are anticipated from construction of the proposed project would be approximately 1,332 MT CO_2e.

During operations, area and indirect emissions sources associated with the proposed project would primarily result from electricity and natural gas consumption, water and wastewater transport, and solid waste generation. GHG emissions from electricity consumed on site by the proposed project would be generated offsite by fuel combustion at the electricity provider. GHG emissions from water and wastewater transport are also indirect emissions resulting from the energy required to transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point. In addition, the residential uses at the project site would also generate mobile source emissions from motor vehicle trips generated by residents and visitors. The various operational GHG emissions associated with the proposed project are shown in Table 4. Overall, the proposed project's total annual GHG emissions resulting from construction and operational activities would be 1,406 MT CO_2e per year.

Table 4
ESTIMATED PROJECT RELATED GHG EMISSIONS

Emission Sources	Emissions (MT CO_2e)
Construction	
Total	1,332
Construction (amortized over 30 years)	*44*
Operations	
Area Sources	**1**
Energy Sources	**258**
Mobile Sources	**1,046**
Waste Sources	**12**
Water Sources	**45**
Operational Subtotal	*1,362*
Total Annual Project Emissions	***1,406***
City Screening Threshold	**2,500**
Significant Impact?	**No**

Note: Totals may not add up exactly due to rounding.
CalEEMod outputs provided in Appendix A

As shown in Table 4, the project's construction and operational GHG emissions would not exceed the City's threshold of 2,500 MT CO_2e per year. Thus the proposed project would not result in the generation of substantial levels of GHG emissions and would not result in emissions that would adversely affect the statewide attainment of GHG emission reduction goals of Assembly Bill (AB) 32. This impact would be less than significant.

As discussed above, the GHG emissions generated by the proposed project would not exceed the City's 2,500 MT CO_2e per year screening threshold. As the threshold has been developed as part of the E-CAP development review process, the project would not interfere with implementation of the E-CAP. Consequently, the implementation of the project would not hinder the ability of the State to achieve AB 32's goal of achieving 1990 levels of GHG emissions by 2020. In addition, once the energy and water consumption reductions from compliance with the mandatory requirements of CALGreen are accounted for, the GHG emissions associated with the proposed project would be even lower.

Consistency with CARB Scoping Plan

Out of the Recommended Actions contained in CARB's Scoping Plan, the actions that are most applicable to the project would be Actions E-1 and GB-1 (CARB 2014). CARB Scoping Plan Action E-1, together with Action GB-1 (Green Building), aims to reduce electricity demand by increased efficiency of Utility Energy Programs and adoption of

more stringent building and appliance standards. The proposed project would be required to include all mandatory green building measures for new residential developments under the CALGreen Code. Therefore, the proposed project would be consistent with the Scoping Plan measures through incorporation of stricter building and appliance standards.

Consistency with City of Escondido Climate Action Plan

As discussed previously, the E-CAP serves as an implementation tool of the city General Plan to guide development in the City to meet the objectives of conserving resources and reducing GHG emissions. Following the State's adopted AB 32 GHG reduction target, the E-CAP sets a goal to reduce its GHG emissions back to 1990 levels by the year 2020. This target was calculated as a 15-percent decrease from 2005 levels, as recommended in the AB 32 Scoping Plan. In order to reduce its GHG emissions by 15 percent from 2005 levels by 2020, the City estimated the community-wide emissions for the year 2020, based on population and housing growth projections associated with the assumptions used in the City's General Plan Update, which was completed in 2012. Through this forecast, the City was able to determine the amount of GHG emissions that would need to be reduced in order for the city to reach its reduction target by 2020.

Because development of the proposed project would be consistent with the land use designation for the project site identified in the City's General Plan Land Use and Community Form Element that allows for residential and commercial development, the GHG emissions associated with the project would have already been accounted for in the City's future emissions forecast. As such, implementation of the proposed project would be consistent with the E-CAP. Additionally, because the GHG emissions generated by the proposed project would not exceed the 2,500 MT CO_2e per year threshold established in the E-CAP and the project would include the two required measures found in the City E-CAP CEQA thresholds (City 2013), the project would not hinder the City's ability to reduce its GHG emissions in accordance with AB 32 requirements. Therefore, implementation of the proposed project would not adversely affect the statewide attainment of GHG emission reduction goals of AB 32 and associated impacts would be less than significant.

VII. HAZARDS AND HAZARDOUS MATERIALS

Significance Criteria and Impact Analysis

The effects of a project on hazards and hazardous materials are considered to be significant if the proposed project would:

a. *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;*

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 proposed project entails development of a residential site, and would generally not involve the transport, use, release or disposal of hazardous materials. Long-term project operation would potentially involve the use of chemical pesticides in certain instances (e.g., landscape maintenance), although the project includes measures to minimize and control such use, as outlined below in Section IX.

Project construction and demolition would involve the on-site use and storage of related hazardous materials such as vehicle/equipment fuels. Applicable regulatory requirements associated with the routine transport, use, or disposal of hazardous materials during construction- and demolition-related activities would be met through implementation of a SWPPP and related BMPs as described below in Section IX. The existing on-site house, which was built in 1953, may contain hazardous materials such as asbestos and lead-based paint. During demolition activities, these materials may be accidentally released into the environment. Before demolition, appropriate testing would be conducted to determine if asbestos and lead-based paint are present; if found, the materials would be removed and disposed of in accordance with all federal, state, and local regulations.

Based on review of the Government Code Section 65962.5 (Cortese List) data bases, no listed hazardous material/waste sites are located within the project site, although there are several nearby listed sites (California Environmental Protection Agency [CalEPA] 2015). As outlined below under Item d of this section, however, all but one of these listed sites are designated as "case closed" and the active site does not include soil or groundwater contamination that would be affected by proposed project development. It should also be noted that a Phase I Environmental Site Assessment (ESA) was conducted for a previously proposed project in the 1.43-acre southern portion of the site in 2005. This investigation concluded that no evidence of Recognized Environmental Conditions (RECs) or Historical Recognized Environmental Conditions (HRECs) was observed, and no further investigation was recommended ([QA]2 Environmental 2005).

Based on the described conditions, associated project-related impacts related to the transport, use, release or disposal of hazardous materials would be less than significant.

c. *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;*

There is one existing school (preschool/daycare) located within one-quarter mile of the project site; Escondido KinderCare at 2415 S. Centre City Parkway (adjacent to the southern portion of the project site). No other known existing or proposed schools are located within one-quarter mile of the project site, with the closest nearby schools located approximately 0.3 mile to the west (Miller Elementary School), 0.6 mile to the north (Juniper Elementary School), 0.75 mile to the northwest (First Years Preschool) and 0.8 mile to the southeast (LR Green Elementary School and Bear Valley Middle School). Based on the described conditions and the information provided above under Items a. and b. of this section, potential project-related impacts from hazardous

material/waste use, handling, or emission in association with existing or proposed schools would be less than significant.

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 create a significant hazard to the public or the environment;

Cortese List

As noted above under items a and b of this section, a search of the Government Code Section 65962.5 (Cortese List) data bases did not identify any on-site listings, although there are a number of nearby sites as outlined below (CalEPA 2015).

- Blue Ribbon Investments, Inc. (T0607301190). This site is a former ARCO facility (No. 1948) located at 2306 South Escondido Boulevard (approximately 150 feet east of the project site), and is listed for a release of gasoline from a leaking underground storage tank (LUST). Both soil and groundwater were affected by this release, although the soil contamination is limited to the subject property, and the local groundwater gradient is to the southeast (i.e., away from the proposed project site, Stantec 2013). Accordingly, the maximum identified groundwater contamination plume does not extend west of South Escondido Boulevard, and is thus not within or adjacent to the proposed project site (Stantec 2013). This case is identified as "open" and remediation/monitoring is ongoing.

- Blue Ribbon Investments, Inc. (T0608107392, T0608119285, T0608177469). These three LUST sites are located at 2306 South Escondido Boulevard (approximately 150 feet east of the project site), with one site listed for release of gasoline (T0608177469), no contaminates identified for the other two sites, and no affected media (i.e., soil or groundwater) identified for any of the three sites. All three listings are identified as "case closed" with associated closure dates of between September 1987 and November 1989.

- Brotherton Plaza (T0808141457). This is a LUST site with no specified contaminants or affected media located at 2250 South Escondido Boulevard (approximately 160 feet northeast of the project site). This listing is identified as "case closed" with a closure date of April 5, 2001.

- Centax Homes, Vacant Lot (T06019712312). This is a LUST site for waste oil contamination of soil located approximately 375 feet south of the project site (with no associated address). This listing is identified as "case closed" with a closure date of January 30, 2013.

As indicated from the above information, all of the Cortese List sites in the vicinity of the project site except one are closed, with contamination at the ongoing (open) listing (T0607301190) not extending within or adjacent to the project site. As a result, potential impacts related to listed hazardous material sites from implementation of the proposed project would be less than significant.

Electric and Magnetic Fields (EMF)

Electric and magnetic fields (EMF) are invisible lines of force that are present wherever electricity flows—around appliances and power lines, and in offices, schools, and homes. Electric fields are created by voltage and are shielded by most materials, including soil and concrete. Magnetic fields are created by current and, unlike electric fields, are not shielded by most materials. Both electric and magnetic field strengths diminish with increasing distance. EMF are low-energy, extremely low-frequency fields not to be confused with high-energy or ionizing radiation such as x-rays (SDG&E 2015).

Although not a Cortese List issue, EMF is being addressed in this document due to the adjacency of the existing SDG&E Felicita Substation to the project site (refer to Figure 3). Not specific to this project or to the subject substation but in general, concerns have been raised about a possible link between exposure to EMF and the occurrence of adverse health conditions in the public. Some EMF studies have reported a possible weak association between estimates of exposure to magnetic fields and certain types of cancer, for example. Other studies, however, have reported no effects (SDG&E 2015).

Over the past 30 years, hundreds of epidemiology and laboratory studies on the subject of potential health risks associated with EMF have been conducted worldwide. To assess potential health risks from power-frequency EMF, numerous internationally recognized scientific organizations and independent regulatory advisory groups have conducted scientific reviews of the EMF research literature. Reviews have been conducted by organizations and groups including the World Health Organization (WHO), National Radiological Protection Board, Health Council of the Netherlands, and California Department of Health Services, and have brought together panels of experts from a variety of disciplines to review the full body of research on this issue (SDG&E 2015).

Without exception, these major reviews have reported that the body of data does not demonstrate that exposure to power-frequency magnetic fields causes cancer or other health risks, although the possibility of such risks cannot completely be dismissed. The weakness of the reported associations, the lack of consistency, and the severe limitations in exposure assessment in the epidemiology studies--together with the lack of support from laboratory studies—were key considerations in the findings of the described scientific reviews (SDG&E 2015). As such, most reviews recommend further research, which is ongoing worldwide.

Finally, there are no California or Federal standards in place regulating environmental levels of magnetic field exposure for workers or the general public. The panels of experts charged with recommending exposure limits for electric and/or magnetic fields have concluded that no meaningful experimental data exist on which to base standards or limits to which the public is exposed (SDG&E 2015). Based on the foregoing, potential effects associated with EMF from the adjacent Felicita Substation is considered less than significant.

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, the project would result in safety hazard for people residing or working in the project area;

f. For a project within the vicinity of a private airstrip, the project would result in a safety hazard for people residing or working in the project area;

The project site is not located within an airport land-use plan or within two miles of a public/public use airport or private airstrip, with the closest such facilities including: (1) Lake Wohlford Resort Airport, approximately 7 miles to the northeast; (2) Ramona Airport, approximately 10 miles to the southeast; (3) Blackington Airport, approximately 11 miles to the north; (4) McClellan/Palomar Airport, approximately 11.5 miles to the west; and (5) Pauma Valley Airpark, approximately 15.6 miles to the north. Based on the described distances, no impacts related to airport or airstrip safety hazards would result from project implementation.

g. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan; or

Pertinent information regarding emergency response in the project site vicinity is provided in the County of San Diego General Plan (2011) and related documents, and in the City General Plan Community Protection Element (2012a). The County General Plan includes information on emergency evacuation in the Mobility and Safety elements, with reference to the Office of Emergency Services *Unified San Diego County Emergency Services Organization Operational Area Emergency Plan* (County 2010). Specifically, Annex Q (Evacuation) of the plan notes that: "Primary evacuation routes consist of major interstates, highways and prime arterials within San Diego County…," with I-5 and State Route (SR-) 78 identified in the project site vicinity. The County plan also notes that "Local jurisdictions will work with…applicable agencies/departments to identify evacuation points and transportation routes."

The City General Plan Community Protection Element identifies information related to emergency response in association with vehicular and aircraft (helicopter) access for police, fire and ambulance/Emergency Medical Technician (EMT) services, with no specific "emergency response or evacuation plans" included (City 2012a). In addition, the Community Protection Element includes a number of policies related to emergency response for the noted services, including provision of adequate staffing, equipment and response times, and also identifies a number of designated emergency evacuation routes, "…to aid in the orderly and rapid movement of people away from a threat or actual occurrence of a hazard." Several of these designated routes are located in the vicinity of the proposed project, and may be utilized by project-related traffic, including Interstate (I-) 15, Centre City Parkway, South Escondido Boulevard and West Felicita Avenue.

From the above information and the proposed project design, potential impacts to emergency response or evacuation plans would be less than significant, based on the

following considerations: (1) as described below in Section XVI, operational project traffic would not result in any significant impacts top local roadways or intersections, with no associated effects to emergency response or evacuation plans; (2) project construction would not involve any off-site roadway (or other applicable) improvements that would result in associated roadway/lane closures or related impacts to emergency response or evacuation plans; (3) indirect effects to regional and local roadways (including I-15 and the designated emergency evacuation routes noted above) from project-related construction traffic would be minor, due to the low ADT levels (approximately 30 trips) and the temporary nature of project construction; and (4) primary access to all major roadways from local properties would be maintained during construction and operation activities.

h. Expose people or structures to 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 located in a primarily urbanized area, with extensive residential (and related) development intermixed with minor agricultural uses, vacant and graded properties, and minor areas of native habitat (e.g., riparian vegetation along Kit Carson Creek approximately 1,200 feet to the north-northeast at its closest point). The project site and surrounding areas are within an area designated as a high risk zone for wildfire hazards in the City General Plan Community Protection Element (City 2012a). Associated potential wildfire impacts related to implementation of the proposed project would be less than significant, however, based on the described land use pattern in the site vicinity, as well as the fact that the project design incorporates a number of measures to address potential wildfire hazards, including fire-resistant landscaping, avoidance of excessive or overgrown vegetation, and provision of educational materials on wildfire prevention. In addition, the project would be constructed in conformance with current fire and building codes. Long-term operational fire hazards would be less than significant.

The construction phase of the project could potentially increase the risk of wildland fires on a short-term basis, if, for example, equipment-related fires were accidentally started at the site. The probability for such fires to occur is low, however, and construction equipment would be outfitted with spark arrestors and other fire protection features such as on-board fire extinguishers. As a result, potential impacts associated with short-term wildland fire hazards from project construction would be less than significant.

VIII. HYDROLOGY AND WATER QUALITY

A Drainage Study and a SWQMP have been prepared for the proposed project by Masson & Associates, Inc. (Masson 2015a and 2016, respectively). These studies are summarized below along with other applicable data, and the complete technical reports are included in Appendix E of this document.

Significance Criteria and Impact Analysis

The effects of a project on hydrology and water quality are considered to be significant if the proposed project would:

a. *Violate any water quality standards or waste discharge requirements, including but not limited to increasing pollutant discharges to receiving waters (consider temperature, dissolved oxygen turbidity and other typical storm water pollutants);*

b. *Have potentially significant adverse impacts on ground water resources, including but not limited to, 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 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);*

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/increased erosion or siltation on- or off-site;*

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 and/or significant adverse environmental impacts;*

e. *Cause significant alteration of receiving water quality during or following construction;*

f. *Cause an increase of impervious surfaces and associated runoff;*

g. *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;*

h. *Cause potentially significant adverse impact on ground water quality;*

i. *Cause or contribute to an exceedance of applicable surface or ground water receiving water quality objectives or degradation of beneficial uses;*

j. *Is the project tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list? If so, can it result in an increase in any pollutant for which the water body is already impaired;*

k. *Create or exacerbate already existing environmentally sensitive areas;*

l. *Create potentially significant environmental impact on surface water quality, to either marine, fresh or wetland waters;*

m. Impact aquatic, wetland or riparian habitat;

n. Otherwise substantially degrade water quality;

Significance Criteria and Impact Analysis

Water Quality (Threshold Items a., e., and g. through n.)

As outlined in the following analysis, potential project-related water quality impacts are associated with both short-term construction activities and long-term operation and maintenance. The discharge of short- and long-term pollutants from the project site could potentially result in significant water quality impacts to downstream receiving waters, including portions of Kit Carson Creek, the San Dieguito River and Lake Hodges that are designated as impaired on the Clean Water Act Section 303(d) List of Impaired Waters. Specifically, Kit Carson Creek is listed for Pentachlorophenol (PCP) and total dissolved solids (TDS); the San Dieguito River is listed for bacteria, nitrogen, phosphorus, TDS and toxicity; and Lake Hodges is listed for color, manganese, nitrogen, pH, phosphorus and turbidity (SWRCB 2015).

Because the proposed project does not include activities or facilities that could directly affect groundwater quality (e.g., septic systems or underground fuel tanks) associated potential project-related impacts are limited to the percolation of surface runoff and associated pollutants. As a result, the following assessment of potential water quality impacts is applicable to both surface and groundwater resources.

Short-term Construction Impacts

Potential water quality impacts related to on- and off-site project construction include erosion/sedimentation, the use and storage of construction-related hazardous materials (e.g., fuels, etc.), generation of debris from demolition activities, and disposal of extracted groundwater (if required), as outlined below.

Erosion and Sedimentation. The existing soils on the site include Bonsall sandy loam and Ramona sandy loam (see Attachment B of the SWQMP). These soils are not considered critical coarse sediments; therefore, none of these coarse sediments exist on site. Potential construction-related erosion/sedimentation impacts would be avoided or reduced below a level of significance through conformance with existing City Storm Water requirements and the related NPDES Construction General Permit. Specifically, this would entail implementing a SWPPP and related BMPs in conformance with applicable regulatory requirements.

Construction-related Hazardous Materials. Project construction would involve the use and/or storage of hazardous materials such as fuels, lubricants, solvents, concrete, paint, and portable septic system wastes. The accidental discharge of such materials during project construction could potentially result in significant impacts if these pollutants reach downstream receiving waters, particularly materials such as petroleum compounds that are potentially toxic to aquatic species in low concentrations. As previously noted, implementation of a SWPPP would be required under NPDES and

related City guidelines, and would include detailed measures to avoid or mitigate potential impacts related to the use and potential discharge of construction-related hazardous materials.

The project would include a number of preliminary construction BMPs, including measures related to the proper use and storage of hazardous materials. While detailed BMPs would be determined as part of the City/NPDES SWPPP process based on project-specific parameters, they are likely to include standard measures and guidelines from the City Storm Water Program and other sources such as CASQA (2009). Typical measures for control of construction-related hazardous materials that may be required in the project SWPPP include the following: (1) minimizing on-site hazardous material storage, and restricting storage locations to areas at least 50 feet from storm drains and surface waters; (2) maintaining written inventories, labels and warning signs for stored hazardous materials; (3) using berms, ditches, and/or impervious liners (or other applicable methods) in material storage and vehicle/equipment maintenance and fueling areas to provide an appropriate containment volume and prevent discharge in the event of a spill; (4) properly maintaining construction equipment and vehicles; (5) using appropriate sediment control devices/methods downstream of paving activities, and properly containing and disposing of wastes and/or slurry from sources including concrete, dry wall and paint, by using properly designed and contained washout areas; (6) providing training for applicable employees in the proper use, handling and disposal of hazardous materials, as well as appropriate action to take in the event of a spill; (7) storing absorbent and clean-up materials in readily accessible on-site locations; (8) properly locating, maintaining and containing portable wastewater facilities; (9) regularly (at least weekly) monitoring and maintaining hazardous material use/storage facilities and operations to ensure proper working order; and (10) implementing solid waste management efforts such as proper containment and disposal of construction debris.

Based on the implementation of appropriate BMPs as part of (and in conformance with) the project NPDES/City SWPPP and related requirements, associated impacts from construction-related hazardous materials would be less than significant.

Demolition-related Debris Generation. The proposed project would involve the demolition of existing on-site facilities including a residential structure and pavement. These activities would generate variable amounts of construction debris, potentially including concrete, asphalt, glass, metal, drywall, paint, insulation, fabric and wood. Demolition activities could also potentially generate particulates, as well as pollutants related to hazardous materials including lead-based paint and asbestos insulation as the existing on-site structure was built in 1953. The introduction of demolition-related particulates or hazardous material pollutants into local drainages or storm drain systems could potentially result in significant downstream water quality impacts.

Project construction would be subject to a number of regulatory controls related to demolition, including NPDES/City SWPPP requirements. The project SWPPP would include measures to address potential effects associated with pollutant generation from demolition activities as appropriate, with detailed requirements to be determined as part

of the SWPPP process. Typical measures for control of demolition-related hazardous materials that may be required in the project SWPPP include: (1) recycling appropriate (i.e., non-hazardous) construction debris for on- or off-site use whenever feasible; (2) using dust-control measures such as watering to reduce particulate generation for pertinent locations/activities (e.g., concrete removal); (3) using appropriate erosion prevention and sediment control measures downstream of all demolition activities; and (4) providing conformance with applicable requirements related to the removal, handling, transport and disposal of hazardous materials generated during demolition (if testing finds such materials to be present).

Based on implementation of appropriate BMPs as part of (and in conformance with) the project NPDES/City SWPPP, as well as conformance with applicable hazardous material regulations (if required), potential water quality impacts from project-related generation of demolition debris would be less than significant.

Disposal of Extracted Groundwater. Disposal of groundwater extracted during construction activities into local drainages and/or storm drain facilities could potentially generate significant water quality impacts through erosion/sedimentation, or the possible occurrence of pollutants in local groundwater aquifers. While shallow groundwater is not anticipated to be encountered during project-related excavation and construction (Geocon 2014), if dewatering is required the applicant and/or contractor would be required to conform with applicable criteria in the associated NPDES Groundwater Permit (NPDES No. CAG919002, Order No. R9-2008-0002). While specific BMPs to address potential water quality concerns from disposal of extracted groundwater would be determined based on site-specific parameters, they would likely include the following types of standard measures from the noted groundwater permit: (1) Using erosion and sediment controls similar to those described above in Section VI.b. for applicable areas/conditions (e.g., disposal of extracted groundwater on slopes or graded areas); (2) testing extracted groundwater for appropriate contaminants prior to discharge; and (3) treating extracted groundwater prior to discharge, if required, to provide conformance with applicable discharge criteria (e.g., through methods such as filtration, aeration, adsorption, disinfection, and/or conveyance to a municipal wastewater treatment plant).

Based on the required conformance with NPDES Groundwater Permit standards and the implementation of related BMPs, water quality impacts from project-related disposal of extracted groundwater (if required) would be less than significant.

Long-term Operation and Maintenance Impacts

The following anticipated pollutants of concern may occur from project operation: sediment; nutrients; heavy metals; trash and debris; oxygen demanding substances; oil and grease; bacteria and viruses; and pesticides. The discharge of these types of pollutants could potentially result in significant impacts to downstream receiving waters, including those with 303(d) impaired listings as previously described.

Pursuant to requirements under the NPDES Municipal Permit (No. R9-2013-0001, NPDES No. CAS019266, as amended) and related City standards (e.g., the City SUSMP), the proposed project would be required to implement appropriate measures to address potential long-term water quality concerns and ensure regulatory conformance. Specifically, this would include the designation of drainage management areas (DMAs) pursuant to the City SUSMP and implementation of appropriate site design, source control, and treatment control BMPs. The project SWQMP provides preliminary calculations of DMAs and proposed BMPs based on NPDES and City standards, with these measures outlined below.

Drainage Management Areas. The use of DMAs is intended to facilitate the design and sizing of applicable BMPs, with the project SWQMP identifying 5 DMAs within the project site (see DMA North and DMA South exhibits following SWQMP in Appendix E), and associated proposed BMPs as summarized below.

Site Design BMPs. Site design BMPs are intended to avoid and/or control post-development runoff, erosion potential and pollutants generation to the maximum extent practicable (MEP) by mimicking the natural hydrologic regime. The site design process employs design practices and techniques to effectively capture, filter, store, evaporate, detain and infiltrate runoff close to its source. Specific site design measures identified in the project SWQMP include: (1) minimizing impervious area, with 19 percent of the project area being pervious; (2) minimizing soil compaction; (3) landscaping with native and/or drought-tolerant species; (4) runoff collection; and (5) bioretention basins (discussed further under treatment control BMPs).

Source Control BMPs. Source control BMPs are intended to avoid or minimize the introduction of pollutants into storm drains and natural drainages to the MEP by reducing on-site pollutant generation and off-site pollutant transport. Source control BMPs identified in the project SWQMP are identified under three main topics: waste handling and disposal; building and grounds maintenance; and drainage system maintenance. Specifically, for waste handling and disposal, measures include but are not limited to: general storage container measures such as leak-proof lids and sweeping and cleaning of the storage area; controlling litter through sufficient number of receptacles and cleaning out of receptacles; and preventing storm water runoff from entering the waste management area. For building and grounds maintenance, measures include but are not limited to: pressure washing of buildings and rooftops; use of mulch or other erosion control measures on exposed soils; and following all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides. For drainage system maintenance, measures include but are not limited to: cleaning and inspection of catch basins and inlet structures; storm drain flushing if deposit problems are identified; and prevention of illicit connections and discharges.

Treatment Control BMPs. Treatment control BMPs are designed to remove pollutants from urban runoff for a design storm event to the MEP through means such as filtering, treatment, or infiltration. Treatment control BMPs are typically required to address the identified pollutants of concern and provide medium or high levels of removal efficiency

for these pollutants. Proposed treatment control BMPs include a number of bioretention facilities (i.e., one at Del Prado North, seven at Del Prado South; refer to Figures 4a and 4b, respectively), which would provide a medium or high rating for removal of all likely pollutants from storm water.

BMP Operation and Maintenance. The Identified BMPs include physical facilities such as no dumping markings and bioretention facilities that require ongoing monitoring and maintenance (pursuant to associated requirements in the City SUSMP). Accordingly, monitoring and maintenance efforts for all applicable BMPs would be implemented by the project applicant (e.g., via the homeowner's association). Specifically, this would entail entering into a written BMP Maintenance Agreement with the City, preparing/implementing a Maintenance Plan, monitoring and reporting to document that programs/activities are being implemented as designed, and providing adequate funding (e.g., through means such as a cash deposit, letter of credit, or other means acceptable to the City).

With implementation of the above-described (or other appropriate) design measures, the proposed project would conform with all applicable regulatory requirements related to long-term water quality concerns and associated impacts would be avoided or reduced below a level of significance.

Groundwater Resources (Threshold Item b.)

The proposed project would not result in increased use or extraction of local groundwater, with no associated impacts to groundwater supplies, aquifer volumes, or groundwater tables. In the unlikely event that shallow groundwater is encountered during project construction, temporary dewatering efforts would be implemented in conformance with applicable NPDES requirements as noted above. Based on the minor and temporary nature of such potential dewatering activities, no associated significant impacts from the drawdown or depletion of local groundwater resources would be anticipated.

The site is underlain by sandy loam soils, which have a slow to very slow infiltration rate and are not well suited for groundwater infiltration. While project implementation would include the installation of impervious surfaces such as structures and pavement, associated potential impacts to existing on-site recharge capacity would be less than significant based on the following considerations: (1) the site design includes extensive landscaping that would provide recharge capacity (with flows from rooftops and paved areas directed to landscaping as outlined above under the discussion of Water Quality); and (2) proposed LID/Treatment Control BMPs include several bioretention facilities, which would hold (retain) storm flows and provide opportunities for infiltration and associated groundwater recharge.

Drainage and Runoff (Threshold Items c., d., f. and g.)

Drainage Alteration

Surface flows within and from the project site are generally to the east and south, entering existing City storm water facilities in Centre City Parkway before ultimately discharging to the San Dieguito River and Lake Hodges approximately two miles to the south. While project implementation would result in some modification of the existing on-site drainage patterns and directions through proposed grading and construction, the overall existing on- and off-site drainage patterns would not be substantially altered. That is, flows from the site would continue to enter existing drainage facilities in Centre City Parkway, and ultimately flow south to the San Dieguito River and Lake Hodges. As a result, overall runoff patterns and directions would be maintained and project-related impacts to drainage alteration would be less than significant, including associated potential erosion and siltation effects (with additional information on potential erosion concerns provided above under the discussion of *Water Quality*).

The project SWQMP also includes an assessment of hydromodification[1] compliance (Masson 2016). The SWQMP analyzed whether the project site could achieve full infiltration of runoff; it was determined this would not be possible due to the poor infiltration characteristics of the sandy loam soils that underlay the site. However, based on associated storm water management modeling, the SWQMP hydromodification analysis concludes that the proposed project would comply with all applicable requirements through the use of bioretention facilities, as discussed above under *Water Quality*. These facilities would provide flow regulation (in addition to water quality treatment) and conformance with hydromodification requirements related to applicable design storm flows (Masson 2016). As a result, potential impacts related to hydromodification from implementation of the proposed project (including associated potential erosion and siltation effects in downstream waters) would be less than significant.

Runoff Rates and Amounts

As previously noted, project implementation would include the installation of impervious surfaces such as structures and pavement, with an associated increase in runoff generation. Specifically, calculated 50-year storm flows generated within the site would increase from the current level of approximately 7.0 cubic feet per second (cfs), to 12.1 cfs after proposed development (Masson 2015a). The proposed project design, however, includes the use of several bioretention basins as previously described. These basins would provide flow regulation as well as water quality treatment, with post-development 50-year storm flows from the site to be equal or less than current flows (Masson 2015b). As a result, potential impacts related to runoff rates and amounts, including associated storm drain capacity and flooding effects, would be less

[1] Hydromodification is defined in the Municipal Permit as the change in natural watershed hydrologic processes and runoff characteristics (infiltration and overland flow) caused by urbanization or other land use changes that result in increased stream flows, sediment transport, and morphological changes in the channels receiving the runoff.

than significant. Additionally, as noted above under the discussion of Drainage Alteration, the SWQMP hydromodification analysis concludes that the proposed project would comply with all applicable requirements. As a result, potential project-related hydromodification impacts, including associated potential flooding and related effects in downstream waters, would be less than significant.

o. 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;

p. Place project within a 100-year flood hazard area structures which would impede or redirect flood flows;

q. 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; or,

r. Inundate the site by seiche, tsunami, or mudflow.

Flooding/Inundation (Threshold Items o. through r.)

Floodplains

The project site and adjacent areas are mapped as Zone "X" by the Federal Emergency Management Agency (FEMA), with this designation defined as areas determined to be outside of the 500-year (and therefore the 100-year) floodplain (FEMA 2012a and 2012b). The closest mapped 100-year floodplain is located approximately 1,200 feet north-northeast of the site in association with Kit Carson Creek. Based on the described conditions, no impacts related to the placement of housing or other facilities within 100-year floodplains that could impede or redirect flood waters are anticipated from the proposed project.

Dam Inundation

The project site is not located within or adjacent to any mapped dam inundation areas, with the closest such designation located approximately 1,000 feet to the north in association with Lake Dixon (City 2012a). Based on the described conditions, no impacts related to dam inundation would result from project implementation.

Inundation by Seiche, Tsunami or Mudflow.

Tsunamis (commonly referred to as tidal waves) are sea waves generated by sources such as underwater earthquakes or volcanic eruptions, and can generate impacts related to inundation in coastal zones. Because the project site is located approximately 14 miles inland and between approximately 600 and 625 feet AMSL, no impacts related to inundation by tsunami are anticipated from project implementation.

Seiches are defined as wave-like oscillatory movements in enclosed or semi-enclosed bodies of water such as lakes or reservoirs, and are most typically associated with

seismic activity. Seiches can result in flooding damage and related effects (e.g., erosion) in surrounding areas from spilling or sloshing water, as well as increasing pressure on containment structures. The closest large water bodies to the project site include Lake Hodges (approximately 2.5 miles to the southwest), Olivenhain Reservoir (3.3 miles to the southwest), Dixon Lake (approximately 4.6 miles to the north-northeast), and Lake Wohlford (approximately 6.3 miles to the northeast). Based on the noted intervening distances to the project site, no seiche-related impacts would result from project implementation.

Proposed project facilities are generally not considered susceptible to inundation by mudflow, due to the relatively level nature of the site and vicinity (with the closest area of substantial topography located approximately two miles to the west). Accordingly, no mudflow-related impacts are anticipated in association with project implementation.

IX. LAND USE AND PLANNING

Significance Criteria and Impact Analysis

The effects of a project on existing or planned land uses are considered significant if the proposed project would:

a. *Physically divide an established community;*

The project proposes the development of 113 new town homes within an established community consisting of residential and commercial uses. The project would not prohibit access to, or otherwise physically divide, an established community. No associated impacts would occur.

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;*

As previously noted, the project site and applicable off-site areas along S. Centre City Parkway and Centre City Parkway are currently zoned C-G, with a corresponding General Plan land use designation of GC (with a minimum residential density of 30 dwelling units per acre). The City's GC designation is characterized by a broad range of service and retail uses in local commercial, community shopping/office complexes, and regional shopping centers (City 2012a). Adjacent areas within the City are zoned Single-family and Multi-family Residential, Planned Development Commercial, and C-G, with associated land use designations of Suburban Residential and GC. The project site also is within Area "B" of the South Escondido Boulevard Neighborhood Plan, which corresponds to an approximately 2.5-mile stretch of the South Escondido Boulevard commercial corridor in the vicinity of the site. The South Escondido Boulevard Neighborhood Plan was adopted in 1996 to assist in improving and revitalizing the neighborhood. The Plan includes goals and recommendations regarding existing and future land uses, development standards and regulations, and

design guidelines for the entire corridor; and restricts uses on the project site to commercial or mixed-use (i.e., commercial with a residential component).

The project site is located in the Centre City Parkway/Brotherton Road Target Area, which is described in the General Plan. The guiding principles for this target area include increased density that is in close proximity to transit and services. The project is consistent with this target area as it would provide increased density in the area that is near bike lanes (on Centre City Parkway) and within 0.5 mile of the nearest bus stop (Metropolitan Transit System [MTS] Bus Route 350).

There is no commercial component to the proposed project; rather, the project proposes 113 residential units on two lots with approximately 23 and 24 units per acre, respectively. To accomplish this, an amendment to the South Escondido Boulevard Neighborhood Plan is proposed to allow an exclusively residential project within a C-G zone, and a zoning change is proposed from C-G to PD-R, with a lower minimum density. The project site is not located within the coastal zone, and is not subject to general plan, specific plan or other known land use policies/regulations intended to avoid or mitigate environmental effects. Accordingly, with implementation of the proposed zoning change and amendment to the South Escondido Boulevard Neighborhood Plan, the proposed project would result in less-than-significant impacts related to conflicts with applicable zoning, general plan or other land use regulations.

c. *Conflict with any applicable habitat conservation plan or natural community conservation plan;*

As discussed above in Section III, *Biological Resources*, the project site would not conflict with any applicable habitat conservation plan or natural community conservation plan. No associated impacts would occur.

d. *Have a substantial adverse effect on a scenic vista;*

e. *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;*

The heavily disturbed project site is located along a developed corridor with both neighborhood and commercial uses on all sides. No scenic vistas or view corridors toward the project site or adjacent properties would be affected. The project would not damage scenic resources as there are no designated on-site scenic resources due to the disturbed nature of the site and developed nature of the surrounding area. The project would not disturb ridges, hilltops, natural rock outcroppings, or interfere with any open space areas in a natural state. There are no historic buildings or state scenic highways in the vicinity of the site, and the project site is not located within the Interstate 15 scenic corridor as defined in the City General Plan Resource Conservation Element (City 2012a). No impacts to scenic vistas or scenic resources would occur.

f. *Substantially degrade the existing visual character or quality of the site and its surroundings;*

The largely vacant project site is located in a developed area, which predominantly consists of single- and multi-family residential and commercial uses. The introduction of additional homes in this area, specifically along the urbanized Centre City Parkway/South Escondido Boulevard corridor, would be compatible with surrounding multi-story residential and commercial development in the vicinity in terms of bulk and scale. In addition, the developed project site would represent an aesthetic improvement over the existing condition of the site, which is heavily disturbed (refer to Figures 5a and 5b). Proposed development standards for the site would be consistent with the City's design standards for the area. Based on the foregoing, the project would be visually compatible with, and would not result in degradation of, the existing visual character or quality of the site and its surroundings. Temporary construction-related effects on the visual character and quality of the site would not result in significant impacts as they would be short-term and temporary in nature. Associated impacts would be less than significant.

g. *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.*

Existing outdoor lighting sources in the project site vicinity vary in intensity; those to the west are primarily associated with residential uses, which generally are minor and of low wattage, while those to the north, east, and south are associated with commercial uses which tend to be of higher wattage and frequency. Project construction would be limited to daylight hours and thus would not require lighting. As such, construction-related impacts from light and glare would not occur. While permanent exterior lighting associated with the proposed townhomes and parking areas would be installed for wayfinding and security purposes, these lights would be required to comply with Section 33-711, Article 35 (Outdoor Lighting) of the Escondido Municipal Code. The proposed townhome units would not include large expanses of glass or windows, and no significant sources of glare are proposed. Based on the described conditions, any associated potential light and glare impacts would be less than significant.

X. MINERAL RESOURCES

Significance Criteria and Impact Analysis

The effects of a project on mineral resources are considered to be significant if the proposed project would:

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; or*

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.*

According to Figure 4-11-1 of the General Plan EIR, no existing or past mineral extraction facilities are located on the project site (City 2012b). Historically, the site has not been associated with mineral mining or excavation. Therefore, no impacts to the

loss of a known mineral resource or locally-important mineral resource recovery site would occur.

XI. NOISE

Significance Criteria and Impact Analysis

The effects of a project on noise are considered to be significant if the proposed project would result in:

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;*

An Acoustical Analysis Report was prepared for the proposed project by HELIX (HELIX 2016); this document is summarized in the following analysis and included as Appendix F of this MND.

Construction Noise

Construction-noise impacts from the project include noise generated from equipment involved with grading and with demolition of the existing single-family home and concrete pads on the site; these construction activities are typically significantly louder than other activities. Construction activities would comply with Section 17-234 and 17-238 of the Escondido Municipal Code, which prohibits construction on Sundays and holidays and allows construction between 7:00 AM and 6:00 PM on weekdays and between 8:00 AM and 5:00 PM on Saturdays. The code also prohibits construction noise levels in excess of a 75 decibels (dB) one-hour average sound level (L_{EQ} [1 hour]).

Equipment used during demolition would include a front end loader and a dump truck and during grading would include a dozer and an excavator. The highest impact level from the operation of a front end loader and a dump truck to the nearest residence would be 74.2 dB L_{EQ} (1 hour). A dozer or an excavator would not be expected to be operating simultaneously; the highest impact level from this equipment would be 71.7 dB L_{EQ} (1 hour) for a dozer and 70.7 dB L_{EQ} (1 hour) for an excavator. Therefore, construction noise levels would not exceed Municipal Code limits, and impacts would be less than significant.

Transportation Noise

As stated in the City's General Plan Community Protection Element, the noise level goal for multi-family residential uses is 65 A-weighted decibels (dBA) community noise equivalent level (CNEL) at the exterior use areas. In addition, Title 24 of the California Code of Regulations establishes an interior noise standard of 45 dBA CNEL. The Acoustical Analysis Report used the highest traffic volumes from the Traffic Impact Study ([TIS] KOA 2015) under the Near-term Future Plus Project scenario to conservatively estimate on-site exterior noise levels from traffic. As determined by the

report, no exterior use areas would exceed the City standard of 65 dBA CNEL and impacts to exterior use areas associated with traffic noise would be less than significant.

Traditional architectural materials are normally able to reduce exterior to interior noise by up to 15 dBA. Because building façade noise levels may exceed 60 CNEL at the proposed residences facing Brotherton Road or S. Centre City Parkway (i.e., at both Del Prado North and Del Prado South; refer to Figures 4a and 4b), traditional architectural materials would not be expected to attenuate interior noise to a level of 45 CNEL. Therefore, interior noise levels are likely to exceed the Title 24 interior noise standard of 45 CNEL, resulting in a potentially significant impact. These impacts would be reduced below a level of significance through implementation of the following mitigation measure.

NOI-1 **Interior Noise Attenuation.** Interior noise levels for the proposed residences shall not exceed 45 CNEL. Once specific building plan information is available, additional exterior-to-interior noise analysis shall be conducted for the proposed residences that face Brotherton Road or S. Centre City Parkway where exterior noise levels are expected to exceed 60 CNEL to demonstrate that interior levels do not exceed 45 CNEL. The information in the analysis shall include wall heights and lengths, room volumes, window and door tables typical for a building plan, as well as information on any other openings in the building shell. The analysis shall also assume a "windows-closed" condition and that vehicles on Centre City Parkway are traveling at 50 mph. With this specific building plan information, the analysis shall determine the predicted interior noise levels at the planned on-site buildings. If predicted noise levels are found to be in excess of 45 CNEL, the report shall identify architectural materials or techniques that could be included to reduce noise levels to 45 CNEL in habitable rooms. Standard measures such as glazing with Sound Transmission Control (STC) ratings from a STC 22 to STC 60, as well as walls with appropriate STC ratings (34 to 60), should be considered.

Appropriate means of air circulation and provision of fresh air would be provided to allow windows to remain closed for extended intervals of time so that acceptable interior noise levels can be maintained. The mechanical ventilation system would meet the criteria of the International Building Code (Chapter 12, Section 1203.3 of the 2001 California Building Code).

Operational Noise Sources

The anticipated primary project operational noise sources include vehicular traffic, heating, ventilation and air conditioning (HVAC) systems, and nuisance noise. Potential impacts from these sources are discussed below.

Off-site Transportation Noise. A significant direct impact would occur from project-generated traffic if buildings where people normally sleep and institutional land uses with primarily daytime and evening uses are exposed to noise level increases in excess

of the incremental noise standards in Figure VI-14 of the General Plan Community Protection Element (City 2012a). Although the project would increase noise along surrounding roadways, no increases would exceed incremental noise standards under either the Existing Plus Project traffic scenario or the Near-term Future scenario. Therefore, impacts from off-site transportation noise would be less than significant.

Heating, Ventilation, and Air Conditioning Systems. Stationary operational noise sources are regulated by the limits within City Municipal Code Section 17-229, which states that noise from multi-family residential uses shall not exceed 55 dBA L_{EQ} from 7:00 AM to 10:00 PM and 50 dBA L_{EQ} from 10:00 PM to 7:00 AM. A typical HVAC system would generate a noise level of 56 dBA L_{EQ} at a distance of 7 feet. The closest residential property line to a ground-mounted project HVAC unit would be the residence adjacent to the northwestern property line of the north lot, located approximately 30 feet from the nearest proposed HVAC unit. At this distance, the unit was modeled to generate a noise level of 43 dBA L_{EQ} at the residential property line. Therefore, HVAC unit noise would not exceed 50 dBA L_{EQ}, and impacts would be less than significant.

Landscape Equipment and Nuisance Noise. General residential noise sources such as landscape equipment and other intermittent or neighborhood noise such as amplified music or barking dogs (often characterized as nuisance noise) are regulated by the limits within Escondido Municipal Code Sections 17-237 and 17-240 of the noise ordinance. Nuisance noise is difficult to control due to the variety of noise sources and intermittent nature of the impact. Compliance with the noise ordinance would limit exposure to nuisance noise and impacts would be less than significant.

b. Exposure of persons to, or generation of, excessive ground-borne vibration or ground-borne noise levels;

The technical evaluation in Appendix F includes an assessment of ground-borne noise and vibration associated with project construction. Based upon City General Plan Community Protection Element standards, a significant impact would occur if project construction activities would expose vibration-sensitive uses to vibration levels that exceed 65 vibrations decibels (VdB), residences and buildings where people normally sleep to 80 VdB, or institutional land uses with primarily daytime uses to 83 VdB.

This analysis identifies the use of a vibratory roller as the most likely sources of ground-borne noise and vibration impacts, and provides the following conclusions:

- A vibratory roller would generate approximately 80 VdB at 75 feet and 83 VdB at 60 feet. Therefore, if a vibratory roller would be operated within 75 feet of nearby residences or within 60 feet of the adjacent KinderCare childcare center, impacts would be potentially significant. These impacts would be reduced below a level of significance through implementation of the following mitigation measure:

- It should be noted that provided that a vibratory roller is operated at a distance further than 25 feet, peak particle velocity (PPV) would not exceed 0.2 inches per second, and building damage would not be expected to occur.

NOI-2 **Vibration Attenuation.** The construction contractor shall not operate a vibratory roller, or equipment with the potential to result in an equivalent level of vibration, that results in a level that exceeds 80 VdB at off-site residences or 83 VdB at the off-site KinderCare childcare center. Operation of a vibratory roller or equivalent shall be avoided within 75 feet of any off-site residence or 60 feet of the off-site childcare center.

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

Refer to Operational Noise Sources under XI(a.). The project would not create a substantial permanent increase in ambient noise levels in the project vicinity and associated impacts would be less than significant.

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

Refer to Construction Noise under XI(a.). The project would comply with applicable noise regulations to minimize temporary or periodic increases in ambient noise levels due to construction. There would be no substantial periodic increase in ambient noise from project operation. Therefore, impacts would be less than significant.

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, significant impact would occur if the project exposed people residing or working in the project area to excessive noise levels; or

f. For a project within the vicinity of a private airstrip, if the project exposed people residing or working in the project area to excessive noise levels.

As noted in the Escondido General Plan Update EIR, the two nearest public airports to the City are the McClellan-Palomar Airport and Ramona Airport. Additionally, portions of the City are subject to periodic flyovers from Marine Corps Air Station (MCAS) Miramar. However, the entire City is outside of the 60 CNEL noise contours for these airports. The project site is not within two miles of any private airstrip. Therefore, impacts associated with airports and airstrips would not occur.

XII. POPULATION AND HOUSING

Significance Criteria and Impact Analysis

The effects of a project on population and housing are considered to be significant if the proposed project would:

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);

The proposed project would directly add to the City's population by providing additional housing. The proposed project would increase the number of dwelling units within the City by 112 (as it would add 113 units while displacing one unit). According to SANDAG's 2014 population and housing estimates, the average household size in Escondido is 3.12 people. Applying this rate, an additional 112 units could result in a population increase of approximately 349 people.

Construction of 113 dwelling units (112 net new) would not result in substantial indirect growth inducement, however, because: (1) no obstacles to population growth would be removed, such as provision of an essential public service or access to a previously inaccessible area, (2) the project would not induce further growth through the expansion or extension of existing services, utilities, or infrastructure, and (3) this development would support General Plan Housing Policy 1.1 to "expand the stock of all housing while preserving the health, safety, and welfare of residents, and maintaining the fiscal stability of the City." In addition, the project site is within a developed urbanized area largely surrounded by existing residential development, and served by existing proximate infrastructure. Therefore, growth-inducing impacts resulting from project implementation would be less than significant.

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Implementation of the proposed project would displace one existing single-family home. The loss of this residence would not be considered a substantial displacement of housing or a substantial displacement of people, nor would it necessitate the construction of replacement housing. Furthermore, the loss of this unit would allow for construction of 113 new (112 net new) townhome dwelling units. Therefore, impacts associated with displacement of substantial numbers of existing housing or people would not occur.

XIII. PUBLIC SERVICES

Significance Criteria and Impact Analysis

The effects of a project on public services are considered to be significant if the proposed project would:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government 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:

1. *Fire Protection*
2. *Police Protection*

Although implementation of the proposed project could result in an estimated increase of 349 persons in the area, this increase is expected to generate an incrementally increased demand for fire and police protection services. It is likely that some future residents of the proposed project are existing Escondido residents, perhaps already residing within the same community as the project site. The proposed project is not expected to result in levels of demand for fire or police protection such that they would drive the need for new or altered fire or police protection facilities or related infrastructure that could result in significant adverse physical impacts.

3. *Schools*
4. *Parks*
5. *Other Public Facilities*

Implementation of the proposed project could result in an estimated increase of 349 persons in the area, which is anticipated to increase demand on local school facilities only incrementally. As described above, not all future residents of the proposed would necessarily represent new residents, as they may already reside within the City or even within the community where the project site is located. Furthermore, not all residents of the project would be school-age children or would have school-age children. Nevertheless, the project developer would pay statutory school fees pursuant to Education Code Section 17620 and Government Code Section 65995. Therefore, with payment of required fees, the proposed project is not anticipated to require construction of additional schools that could result in physical impacts, and associated impacts would be less than significant. The project would incrementally increase the demand for park space and could increase usage at existing City parks. The project, however, does include some recreational facilities and would not require the construction of new or expansion of existing park facilities. Therefore, there would not be an associated significant impact to parks. The construction of 113 single-family homes would result in a relatively small increase in population (e.g., an estimated 349 people) creating minimal additional demand on other public facilities (i.e., libraries, childcare centers) within the City; however, this minor additional demand is not expected to require the construction of new or expanded public facilities and associated impacts would be less than significant.

XIV. RECREATION

Significance Criteria and Impact Analysis

The effects of a project on recreation are considered to be significant if the proposed project would:

a. *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;*

b. *Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.*

The project proposes the development of 113 townhomes that could cause an incremental increase in the use of existing neighborhood and regional parks and recreation facilities. Any associated increase in the use of these facilities, however, would be minor and is not expected to lead to or accelerate substantial physical deterioration of such facilities. Furthermore, any potential impacts would be offset by the project's payment of Park and Facilities Impact Fees, which are paid upon issuance of building permits; associated impacts would be less than significant.

The project does propose the development of recreational facilities for use by residents, including a pool, but it would not require the construction or expansion of other recreational facilities. The proposed internal recreational facilities are not expected to have an adverse physical effect on the environment, and associated impacts would be less than significant.

XV. TRANSPORTATION/TRAFFIC

A Traffic Impact Study (TIS) has been prepared for the proposed project by KOA Corporation (KOA 2015). The study is summarized below, and the complete TIS is included in Appendix G of this document.

Significance Criteria and Impact Analysis

The effects of a project on transportation/traffic are considered to be significant if the proposed project would:

a. *Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit?*

Roadway segment and intersection operating conditions are typically described in terms of LOS. LOS is a scale used to indicate the quality of traffic flow on roadway segments

and at intersections, with a range from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion). Based upon SANTEC/ITE guidelines and the City of Escondido Traffic Analysis Guideline, if roadway segments or intersections are operating at LOS D or better, impacts are not considered significant (refer to Appendix A of the TIS for more information).

The scope of the study area analyzed in the TIS is based on the City's Traffic Impact Analysis Guideline, discussions with City staff, and a working knowledge of the local transportation system. The study area included the following eight roadway segments and five intersections:

Roadway Segments

- S. Centre City Parkway from Brotherton Road to Citracado Parkway
- Centre City Parkway north of Brotherton Road
- Centre City Parkway from Brotherton Road to Citracado Parkway
- Centre City Parkway south of Citracado Parkway
- Brotherton Road from Charise Street to S. Centre City Parkway
- Brotherton Road from S. Centre City Parkway to Centre City Parkway
- Citracado Parkway west of S. Centre City Parkway
- Citracado Parkway from S. Centre City Parkway to Centre City Parkway

Intersections

- Charise Street/Project Driveway #1 at Brotherton Road
- S. Centre City Parkway at Brotherton Road
- Centre City Parkway at Brotherton Road
- S. Centre City Parkway at Citracado Parkway
- Centre City Parkway at Citracado Parkway

According to the TIS, the proposed addition of 113 multi-family units is expected to generate 904 ADT with a total of 72 AM peak-hour trips (14 in, 58 out), and 90 PM peak-hour trips (63 in, 27 out).

Roadway segment capacities and corresponding LOS are listed in Table 5, *Roadway Segment Conditions*. As shown in the table, the additional trips associated with the project would not cause the LOS of any roadway segment to decrease in the Existing Plus Project scenario; therefore, the project would not cause direct impacts to roadway segments.

To analyze cumulative impacts, four cumulative projects in the study area circulation network were identified, including three residential projects and one commercial project (refer to Table 4-1 of the TIS for more information). The trips from these cumulative

projects in the vicinity of the project site were added to the project intersections and roadway segments. As can be seen in Table 5, the combined trips of the project and cumulative projects would not cause the LOS of any segment to decrease to an unacceptable level in the Near-term Future Plus Project scenario. Therefore, all roadway segments would continue to operate at acceptable levels with the proposed project in place. Associated roadway segment impacts would be less than significant.

Table 5
ROADWAY SEGMENT CONDITIONS

Roadway Segment	Existing		Existing Plus Project		Near-term Future		Near-term Future Plus Project	
	V/C[1]	LOS[2]	V/C	LOS	V/C	LOS	V/C	LOS
S. Centre City Parkway								
Brotherton Road to Citracado Parkway	0.021	A	0.064	A	0.064	A	0.107	A
Centre City Parkway								
North of Brotherton Road	0.634	C	0.641	C	0.655	C	0.663	C
Brotherton Road to Citracado Parkway	0.656	C	0.668	C	0.684	C	0.696	C
South of Citracado Parkway	0.659	C	0.670	C	0.682	C	0.693	C
Brotherton Road								
Charise Street to S. Centre City Parkway	0.076	A	0.138	A	0.222	A	0.284	A
S. Centre City Parkway to Centre City Parkway	0.084	A	0.127	A	0.187	A	0.230	A
Citracado Parkway/Gamble Lane								
S. Centre City Parkway to Centre City Parkway	0.476	B	0.501	B	0.545	C	0.570	C

[1] V/C = Vehicle to Capacity ratio
[2] LOS = Level of Service
Source: KOA Corporation 2015

Intersection delays and corresponding LOS are listed in Table 6, *Intersection Conditions*. As shown in the table, the additional traffic generated by the project would not cause the LOS of any intersection to decrease in the Existing Plus Project scenario. In addition, the combined traffic of the project and cumulative projects would not cause the LOS of any intersection to decrease to an unacceptable level in the Near-term Future Plus Project scenario. Therefore, all study area intersections would continue to operate at acceptable levels during the AM and PM peak hour periods with the proposed project in place. Associated intersection impacts would be less than significant.

Table 6
INTERSECTION CONDITIONS

Intersection	Existing		Existing Plus Project		Near-term Future		Near-term Future Plus Project	
	Delay[1]	LOS[2]	Delay	LOS	Delay	LOS	Delay	LOS
AM Peak Hour								
Brotherton Rd & Charise St / Project Driveway # 1[3]	8.8	A	9.1	A	8.9	A	9.3	A
Brotherton Rd & S. Centre City Pkwy[3]	9.2	A	9.5	A	10.1	B	10.4	B
Brotherton Rd & Centre City Pkwy[3]	13.8	B	14.3	B	14.7	B	15.2	C
W. Citracado Pkwy & S. Centre City Pkwy[3]	10.9	B	11.4	B	12.1	B	12.7	B
W. Citracado Pkwy & Centre City Pkwy[4]	10.1	B	13.7	B	11.3	B	15.0	B
S. Centre City Pkwy & Project Driveway #2[3]	-	-	8.5	A	-	-	8.5	A
PM Peak Hour								
Brotherton Rd & Charise St / Project Driveway # 1[3]	8.8	A	9.2	A	8.9	A	9.4	A
Brotherton Rd & S. Centre City Pkwy[3]	8.9	A	9.5	A	9.8	A	10.5	A
Brotherton Rd & Centre City Pkwy[3]	16.7	C	16.8	C	17.2	C	17.2	C
W. Citracado Pkwy & S. Centre City Pkwy[3]	11.6	B	12.1	B	13.0	B	13.8	B
W. Citracado Pkwy & Centre City Pkwy[4]	9.8	A	14.2	B	10.2	B	14.7	B
S. Centre City Pkwy & Project Driveway #2[3]	-	-	8.4	A	-	-	8.4	A

[1] Delay = Second per vehicle
[2] LOS = Level of Service
[3] Unsignalized intersection
[4] Signalized intersection
Source: KOA Corporation 2015

The TIS determined that no road network changes would be required for the project, the proposed parking meets City requirements, and the proposed on-site circulation would be adequate based on the types of vehicles anticipated to frequently enter and exit the site.

Pedestrian access would be provided via sidewalks on Brotherton Road and S. Centre City Parkway along the project frontage. No sidewalks currently exist along the project frontage (refer to Figures 5a and 5b); therefore, the project would improve pedestrian circulation in the area. No bike lanes exist or are proposed on these streets; however, dedicated bike lanes are present on the nearby Centre City Parkway. Regarding mass

transit, while there is currently no transit service directly to the project site, MTS Bus Route 350 stops at the intersection of Escondido Boulevard and Sunset Drive, approximately 0.5 mile from the project site. The project does not propose changes to existing bus stops. Therefore, no impacts related to these issues would occur.

Based on the above considerations, the project would not conflict with applicable plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system.

b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Refer to response to Issue XV.a. SANDAG prepared the Congestion Management Program (CMP) for the San Diego region, which includes the City (SANDAG 2008). The CMP requires a traffic analysis for all large-scale projects that generate at least 2,400 daily trips or 200 or more peak-hour trips. The project does not meet the daily or peak-hour trip generation threshold as it would generate 904 ADT and 162 peak hour trips; therefore, no detailed CMP arterial analysis is required and no associated impacts would occur.

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 closest public airport is Ramona Airport, located approximately ten miles southeast of the project site. The closest private airport is Lake Wohlford Resort Airport, which is located approximately seven miles northeast of the site. The project site is not within the airport influence area for either the Ramona or Lake Wohlford airport. In addition, the proposed project would not include aviation components or structures where height would be an aviation concern and, therefore, would not affect air traffic patterns. No associated impacts would occur.

d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

The project would provide striping modifications to Brotherton Road and S. Centre City Parkway, including the addition of a stop sign to eastbound Brotherton Road before S. Centre City Parkway and a two-way turning lane on Brotherton Road. These changes would likely increase safety on the roadways by providing an additional stop and a committed area to turn. Therefore, the project would not include the construction of hazards (e.g., sharp curves or dangerous intersections), and would not result in incompatible uses with the surrounding developed area. Therefore, no associated impacts would occur.

e. Result in inadequate emergency access;

Impacts to emergency vehicle access along S. Centre City Parkway and/or Brotherton Road in the project site vicinity during construction are not expected to occur. Construction activity is expected to remain within the limits of the project site, lane closures on adjacent roadways are not anticipated, and access to public roadways by emergency vehicles would be maintained at all times. Accordingly, impacts associated with emergency access would be less than significant.

f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Refer to response to Issue XV.a.-b. regarding public transit, bicycle, or pedestrian facilities. Implementation of the project would not conflict or interfere with policies contained in the Mobility and Infrastructure Element of the City's General Plan regarding alternative transportation modes. No associated impacts would occur.

XVII. UTILITIES AND SERVICE SYSTEMS

Significance Criteria and Impact Analysis

The effects of the project on utilities and service systems are considered to be significant if the proposed project would:

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

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 proposed project would generate a small increase in wastewater due to the addition of an estimated 349 residents to the generally vacant project site. However, treatment of wastewater generated by the project is anticipated to be routine and is not expected to exceed wastewater treatment requirements of the Regional Water Quality Control Board (RWQCB).

The proposed project would require the use of water and wastewater treatment facilities; however, the relatively small residential project is not of a scale that would substantially increase the demand for wastewater treatment services and would not require the need for new or expanded water or wastewater treatment facilities. Adequate municipal services are available to serve the project. Impacts associated with water or wastewater treatment would be less than significant.

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;

Refer to responses to Issues VIII. c., d., f., and g. The proposed project would create an increase in runoff due to the addition of impervious surfaces compared to existing conditions. However, the addition of eight bioretention basins across the site would help reduce the amount of flow exiting the site (Masson 2015a). Proposed on-site and existing off-site drainage facilities are expected to be sufficient to convey post-development flows. No expansion of existing facilities would be required, and the construction of project-specific drainage facilities would not result in significant environmental effects. Associated storm water drainage impacts would be less than significant.

d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;

e. Result in a determination by the wastewater treatment provider which serves, or may serve, the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;

The proposed project would create a need for additional water supplies and wastewater treatment services over existing conditions on the generally vacant project site. However, the project is not of a scale that would result in a substantial increase in demand for water supplies or services, nor would it require preparation of a Water Supply Assessment. The 113-unit project also would not require the need for new or expanded wastewater treatment capacity or facilities. Existing services would be sufficient to serve the proposed development and associated water supply and wastewater treatment impacts would be less than significant.

f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or

g. Comply with federal, state and local statutes and regulations related to solid waste.

The project would create solid waste that would be served by regional landfills. The 113-unit project is not of a scale that would significantly impact solid waste hauling services or landfill facilities. Both construction (including demolition) and operation of the proposed project would comply with applicable federal, state, and local statutes and regulations related to solid waste, and associated impacts would be less than significant.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

Potentially significant impacts to the environment resulting from the proposed project have been identified for the areas of biological resources, cultural resources (Tribal Cultural Resources), geology and soils, and noise. With implementation of identified project mitigation measures, however, the project is not expected to have any significant impacts, either long-term or short-term, or result in any substantial adverse effects on human beings, either directly or indirectly. Specifically, the project would not degrade the quality of the environment for plant or animal communities, substantially reduce the

habitat of a fish or wildlife species, cause fish or wildlife populations to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of endangered plants or animals. The project would also not eliminate important examples of the major periods of California history or prehistory. As described, project-related effects either would be avoided by incorporation of project design measures, or mitigated to levels below significance, and no cumulatively considerable impacts would occur. Therefore, the proposed project would not have a significant individual or cumulatively considerable impact on the environment.

SUMMARY OF DESIGN MEASURES AND MITIGATION MEASURES

Design Measures

Air Quality Design Measures

To minimize air quality impacts during construction, the project is required to include the following construction dust control measures into the proposed design. These measures, which would be implemented as a matter of project design, are to be included on all project construction contracts, grading permits, improvement plans, and final maps.

During grading activities for any future development within the General Plan Update planning area boundary, the on-site construction superintendent shall ensure implementation of standard best management practices to reduce the emissions of fugitive dust, including but not limited to the following actions:

- Water any exposed soil areas a minimum of twice per day, or as allowed under any imposed drought restrictions. On windy days or when fugitive dust can be observed leaving the construction site, additional water will be applied at a frequency to be determined by the onsite construction superintendent.

- Temporary hydroseeding with irrigation will be implemented on all graded areas on slopes, and areas of cleared vegetation will be revegetated as soon as possible following grading activities in areas that will remain in a disturbed condition (but will not be subject to further construction activities) for a period greater than three months during the construction phase.

- Operate all vehicles on the construction site at speeds less than 15 miles per hour.

- Cover all stockpiles that will not be utilized within three days with plastic or equivalent material, to be determined by the onsite construction superintendent, or spray them with a non-toxic chemical stabilizer.

- If a street sweeper is used to remove any track-out/carry-out, only PM_{10}-efficient street sweepers certified to meet the most current South Coast Air Quality Management District Rule 1186 requirements shall be used. The use of blowers for removal of track-out/carry-out is prohibited under any circumstances.

Geology and Soils Design Measures

To minimize potential impacts related to seismic ground acceleration, the project would include the following design parameters and recommendations into the proposed design. These measures, which would be implemented as a matter of project design, are to be included on all project construction contracts, grading permits, improvement plans, and final maps.

- Conformance with applicable criteria of the CBC.
- Implementation of appropriate site preparation activities (e.g., clearing/grubbing and removal of buried structures).
- Implementation of geotechnical observation/testing and remedial grading as applicable.
- Implementation of appropriate excavation parameters, such as removal/replacement and/or recompaction of unsuitable materials including fill and applicable areas of older alluvium.
- Conformance with proper engineered fill composition/placement methodology
- Appropriate design and construction of structures, foundations, trenches, manufactured slopes, retaining walls, pavement, and drainage/irrigation facilities.

Greenhouse Gas Design Measures

Greenhouse gas emissions generated by the project would be less than significant, provided that the project implements the efficiency measures required in the Climate Action Plan CEQA Thresholds for small projects. These measures, which would be implemented as a matter of project design, are to be included on all project construction contracts, grading permits, improvement plans, and final maps.

- Attainment of energy efficiency of at least five percent greater than adopted Title 24 requirements.
- Implementation of water conservation measures that match the CALGreen Building Code in effect as of January 2011.

Hazards and Hazardous Materials Design Measures

To minimize potential wildfire impacts, the project would incorporate the following design measures to address potential hazards. These measures, which would be

implemented as a matter of project design, are to be included on all project construction contracts, grading permits, improvement plans, and final maps.

- Incorporation of fire-resistant landscaping.
- Avoidance of excessive or overgrown vegetation.
- Provision of educational materials on wildfire prevention to residents.
- Preparation and implementation of a fire protection plan.

Mitigation Measures

Biological Resources Mitigation Measure

To reduce potentially significant impacts to sensitive biological resources to less-than-significant levels, the following mitigation measure is required.

BIO-1 Avoidance of Nesting Raptors. To prevent impacts to nesting raptors protected under the federal MBTA and CFG Code, the City shall enforce the following:

1. If construction occurs during the raptor nesting season (January 15 through July 31), and where any mature tree or structure capable of supporting a raptor nest occurs within 500 feet of proposed project construction activities, the project applicant shall retain a qualified biologist to conduct a pre-construction survey for nesting raptors prior to clearing, grading and/or construction activities. The survey shall be conducted within 72 hours prior to the start of construction. The project applicant shall not be responsible for physically surveying off-site habitat where access is not permitted; the qualified biologist shall visually inspect these off-site areas with the aid of binoculars or a spotting scope.

2. If any nesting raptors are present on or within 500 feet of the proposed project construction area, the project applicant shall retain a qualified biologist to flag and demarcate the location of all nesting raptors and monitor construction activities. Active nests within off-site areas where access is not permitted shall not be flagged or demarcated. Temporary avoidance of active raptor nests, including the enforcement of an avoidance buffer of 500 feet, shall be required until the qualified biologist has verified that the young have fledged or the nest has otherwise become inactive. The avoidance buffer may be reduced at the discretion of the qualified biologist and with written consent from the USFWS and CDFW. If the qualified biologist determines that a narrower buffer is warranted, the qualified biologist shall provide USFWS and CDFW with a written explanation as to why. Based on the submitted explanation, USFWS and CDFW would determine whether to allow the narrower buffer. Avoidance buffers for active nests within off-site areas where existing developments already occur shall not be required.

Cultural Resources Mitigation Measures

To reduce potentially significant impacts to sensitive cultural resources (Tribal Cultural Resources) to less-than-significant levels, the following mitigation measures are required.

CUL-1 The City of Escondido Planning Division ("City") recommends the applicant enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe that is traditionally and culturally affiliated with the Project Location ("TCA Tribe") prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources, and (2) to formalize protocols and procedures between the Applicant/Owner and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains, funerary objects, cultural and religious landscapes, ceremonial items, traditional gathering areas and cultural items, located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.

CUL-2 Prior to issuance of a grading permit, the applicant shall provide written verification to the City that a qualified archaeologist and a Native American monitor associated with a TCA Tribe have been retained to implement the monitoring program. The archaeologist shall be responsible for coordinating with the Native American monitor. This verification shall be presented to the City in a letter from the project archaeologist that confirms the selected Native American monitor is associated with a TCA Tribe. The City, prior to any pre-construction meeting, shall approve all persons involved in the monitoring program.

CUL-3 The qualified archaeologist and a Native American monitor shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.

CUL-4 During the initial grubbing, site grading, excavation or disturbance of the ground surface, the qualified archaeologist and the Native American monitor shall be on site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.

CUL-5 In the event that previously unidentified Tribal Cultural Resources are discovered, the qualified archaeologist and the Native American monitor, shall have the authority to temporarily divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.

CUL- 6 If a potentially significant tribal cultural resource is discovered, the archaeologist shall notify the City of said discovery. The qualified archaeologist, in consultation with the City, the TCA Tribe and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the tribal cultural resource's treatment and disposition shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor and be submitted to the City for review and approval.

CUL-7 The avoidance and/or preservation of the significant tribal cultural resource and/or unique archaeological resource must first be considered and evaluated as required by CEQA. Where any significant Tribal Cultural Resources and/or unique archaeological resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, then a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor, and shall be subject to approval by the City. The archaeological monitor, in consultation with the Native American monitor, shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.

CUL-8 As specified by California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted on-site and in situ where they were discovered by a forensic anthropologist, unless the forensic anthropologist and the Native American monitor agree to remove the remains to an off-site location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the

remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains in accordance with California Public Resources Code section 5097.98. The Native American remains shall be kept in-situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur on-site in the presence of a Native American monitor.

CUL-9 If the qualified archaeologist elects to collect any tribal cultural resources, the Native American monitor must be present during any testing or cataloging of those resources. Moreover, if the qualified Archaeologist does not collect the cultural resources that are unearthed during the ground disturbing activities, the Native American monitor, may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions. Any Tribal Cultural Resources collected by the qualified archaeologist shall be repatriated to the TCA Tribe. Should the TCA Tribe or other traditionally and culturally affiliated tribe decline the collection, the collection shall be curated at the San Diego Archaeological Center. All other resources determined by the qualified archaeologist, in consultation with the Native American monitor, to not be tribal cultural resources, shall be curated at the San Diego Archaeological Center.

CUL-10 Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner to be submitted with the report. The report will include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.

<u>Geology and Soils Mitigation Measure</u>

To reduce potentially significant geology and soils impacts to less-than-significant levels, the following mitigation measure is required.

GEO-1 **Implementation of Geotechnical Recommendations.** The site-specific Geotechnical Investigation includes a number of general and specific recommendations that shall be implemented in the design and construction of the proposed project to minimize (a) the potential for exposure to soils with corrosive properties and associated potential for deterioration and eventual failure of underground concrete and metal structures, and (b) the potential concern associated with expansive soils on site, as summarized herein. Corrosion recommendations that shall be implemented include, but are not

limited to: (1) removal of unsuitable deposits and replacement with non-corrosive fill; (2) use of corrosion-resistant construction materials (e.g., coated or non-metallic facilities); and (3) installation of cathodic protection devices (e.g., use of a more easily corroded "sacrificial metal" to serve as an anode and draw current away from the structure to be protected). Expansive soils recommendations that shall be implemented include, but are not limited to: (1) removal of unsuitable materials during site preparation and grading; (2) confirmation that fill material exhibits "very low" or "low" expansion potential (per CBC standards); and (3) testing of proposed fill materials for suitability (including expansion potential). Finally, site grading plans shall be reviewed by a qualified geotechnical consultant prior to final design submittal to determine if additional analysis and recommendations beyond those summarized above (and listed in full in the Geotechnical Investigation) are required. Any and all geotechnical recommendations shall be fully implemented in accordance with applicable industry/regulatory standards (e.g., the CBC requirements).

Noise Mitigation Measures

To reduce potentially significant noise impacts to less-than-significant levels, the following mitigation measures are required.

NOI-1 **Interior Noise Attenuation.** Interior noise levels for the proposed residences shall not exceed 45 CNEL. Once specific building plan information is available, additional exterior-to-interior noise analysis shall be conducted for the proposed residences that face Brotherton Road or S. Centre City Parkway where exterior noise levels are expected to exceed 60 CNEL to demonstrate that interior levels do not exceed 45 CNEL. The information in the analysis shall include wall heights and lengths, room volumes, window and door tables typical for a building plan, as well as information on any other openings in the building shell. The analysis shall also assume a windows-closed condition and that vehicles on Centre City Parkway are traveling at 50 mph. With this specific building plan information, the analysis shall determine the predicted interior noise levels at the planned on-site buildings. If predicted noise levels are found to be in excess of 45 CNEL, the report shall identify architectural materials or techniques that could be included to reduce noise levels to 45 CNEL in habitable rooms. Standard measures such as glazing with STC ratings from a STC 22 to STC 60, as well as walls with appropriate STC ratings (34 to 60), should be considered.

Appropriate means of air circulation and provision of fresh air would be provided to allow windows to remain closed for extended intervals of time so that acceptable interior noise levels can be maintained. The mechanical ventilation system would meet the criteria of the International Building Code (Chapter 12, Section 1203.3 of the 2001 California Building Code).

NOI-2 **Vibration Attenuation.** The construction contractor shall not operate a vibratory roller, or equipment with the potential to result in an equivalent level of vibration, that results in a level that exceeds 80 VdB at off-site residences or 83 VdB at the off-site KinderCare childcare center. Operation of a vibratory roller or equivalent shall be avoided within 75 feet of any off-site residence or 60 feet of the off-site childcare center.

MATERIALS USED IN PREPARATION OF THIS ANALYSIS

The following materials were used during the preparation of this document. The project-specific technical reports listed below are on file with the City of Escondido and available online.

Project-specific Technical Reports

Christian Wheeler Engineering (Christian Wheeler).
2015. Geotechnical Investigation Del Prado. August 31.

HELIX Environmental Planning, Inc. (HELIX).
2015a. Air Quality and Greenhouse Gas Emissions Calculations for the Del Prado Project. August 17.

2016. Acoustical Analysis Report for the Del Prado Project. February 23.

KOA Corporation (KOA).
2015. Del Prado Escondido Traffic Impact Study. August.

Masson & Associates (Masson).
2016 Priority Development Project (PDP) Storm Water Quality Management Plan (SWQMP) for Del Prado. January 29.

2015a. Preliminary Drainage Study. July 24.

QA(2) Environmental.
2005. Phase I Environmental Site Assessment for Two Vacant Lots on West Side of South Center City Parkway. May 21.

Recuerdos Research (Recuerdos).
2015. Archaeological and Paleontological Letter Report for a Negative Survey of the Del Prado North and South Project. September 23.

Specific Cited References

Brown and Caldwell
2011 Final Hydromodification Management Plan, County of San Diego, California. March.

California Department of Conservation
2013 San Diego County Important Farmland Map. Available at: http://www.conservation.ca.gov/dlrp/fmmp/Pages/SanDiego.aspx.

Specific Cited References (cont.)

California Air Resources Board (CARB).
2014. May. First Update to the Climate Change Scoping Plan: Building on the Framework. Available at: http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf

California Environmental Protection Agency (CalEPA)
2015. Cortese List Sites, including: EnviroStor Hazardous Waste and Substances Site List; GeoTracker Site, San Diego County; RWQCB Cease and Desist/Cleanup and Abatement orders; and Department of Toxic Substances Control (DTSC) List of Hazardous waste Facilities Subject to Corrective Action. Available at: http://www.calepa.ca.gov/SiteCleanup/CorteseList/.

California Geological Survey (CGS)
2007. Fault-Rupture Hazard Zones in California. Special Publication 42.

California Stormwater Quality Association (CASQA)
2009. Stormwater Best Management Practice Handbook Portal: Construction. November.

County of San Diego.
2007. Guidelines for Determining Significance: Air Quality. Department of Planning and Land Use.

Escondido, City of
2013. City of Escondido Greenhouse Gas Emissions Adopted CEQA Thresholds and Screening Tables. Community Development Department. December 4.

2012a. City of Escondido General Plan. May. Available at: http://www.escondido.org/general-plan.aspx.

2012b. City of Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report. April 23.

2011. City of Escondido Standard Urban Storm Water Mitigation Plan (SUSMP) for Development Projects. January.

2008. Jurisdictional Urban Runoff Management Plan. March.

Specific Cited References (cont.)

Federal Emergency Management Agency (FEMA)

2012a. Flood Insurance Rate Map (FIRM), San Diego County and Incorporated Areas. Panel No. 06073C1077G. May 16.

2012b. Flood Insurance Rate Map (FIRM), San Diego County and Incorporated Areas. Panel No. 06073C1079G. May 16.

KOA Corporation (KOA).

2015. Del Prado Escondido Traffic Impact Study. August.

Masson & Associates, Inc. (Masson)

2016 Priority Development Project (PDP) Storm Water Quality Management Plan (SWQMP) for Del Prado. January 29.

2015a. Preliminary Drainage Study for Del Prado, 2329 Centre City Parkway, Escondido, California. July 24.

2015b. Personal Communication between Messrs. Bruce Tait or Masson, and Dennis Marcin of HELIX Environmental Planning, Inc. August 18.

(QA)2 Environmental

2005 Phase I Environmental Site Assessment for Property at: Two vacant Lots on West Side of S. Centre City Parkway, APN 238-130-35 & -36, Escondido, California. May 21.

REC Consultants (REC)

2015. Technical Memorandum: SWMM Modeling for Hydromodification Compliance of Del Prado North. July 17.

San Diego Association of Governments (SANDAG)

2014. Data Surfer. http://datasurfer.sandag.org/download/sandag_estimate_2014_jurisdiction_escondido.pdf

2008. Final 2008 Congestion Management Program Update. November.

San Diego, County of

2007. Guidelines for Determining Significance: Air Quality. Department of Planning and Land Use.

2010. Unified San Diego County Emergency Services Organization Operational Area Emergency Plan. October. http://www.sandiegocounty.gov/content/dam/sdc/oes/emergency_management/plans/op-area-plan/2014/2014-OA-EOP-Annex-Q-Evacuation.pdf.

Specific Cited References (cont.)

San Diego, County of (cont.)
2011. San Diego County General Plan, A Plan for Growth, Conservation and Sustainability. August 3.

San Diego Gas & Electric Company (SDG&E)
2015. Understanding Electric and Magnetic Fields pamphlet.

Stantec Consulting Services, Inc. (Stantec)
2013. Revised Corrective Plan, Former ARCO Facility No. 1948. 2306 South Escondido Blvd., Escondido, California. SAM Case No. H05186-004. November 12.

State Water Resources Control Board (SWRCB)
2015. Clean Water Act Section 303(d) 2010 List of Water Quality Limited Segments (including potential sources). Available at: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml.

General References

1. Escondido Zoning Code and Land Use Maps
2. Escondido Municipal Code
3. USGS 7.5-Minute Topographic Quadrangle Map; Escondido
4. Site Visits/Field Inspections
5. Project Description & Preliminary Information

THIS PAGE INTENTIONALLY LEFT BLANK

Attachment A

IS CHECKLIST

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

☐ Aesthetics	☐ Agriculture & Forestry Resources	☐ Air Quality
■ Biological Resources	■ Cultural Resources	■ Geology/Soils
☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality	☐ Land Use/Planning
☐ Mineral Resources	■ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities/Service Systems	■ Mandatory Findings of Significance	

DETERMINATION

On the basis of this initial evaluation that follows:

☐ The proposed project is exempt from CEQA pursuant to the general exemption (CEQA Guidelines, 15061 (b)(3)), a statutory exemption, and/or a categorical exemption, and that if a categorical exemption, none of the exceptions to the exemption apply. A NOTICE OF EXEMPTION will be prepared.

☐ 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 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, no further environmental document is required. FINDINGS consistent with this determination will be prepared.

Signature

2.29.16
Date

EVALUATION OF ENVIRONMENTAL IMPACTS

This section evaluates the potential environmental effects of the proposed project using the environmental checklist from the State CEQA Guidelines as amended. The definitions of the response column headings include the following:

A. "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.

B. "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 earlier analyses may be cross-referenced).

C. "Less Than Significant Impact" applies where the project creates no significant impacts, only less than significant impacts.

D. "No Impact" applies where a project does not create an impact in that category. "No Impact" answers do not require an explanation if they are adequately supported by the information sources cited by the lead agency which 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 would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

I. Agriculture and Forestry Resources

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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:				

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farm-land 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?	□	□	□	■
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	□	□	□	■
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	□	□	□	■
d. Result in the loss of forest land or conversion of forest land to non-forest use?	□	□	□	■
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	□	□	□	■

II. Air Quality

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	□	□	□	■
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	□	□	■	□
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 that exceed quantitative thresholds for ozone precursors)?	□	□	■	□

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Expose sensitive receptors to substantial pollutant concentrations?	□	□	■	□
e. Create objectionable odors affecting a substantial number of people?	□	□	■	□

III. Biological Resources

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, 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?	□	■	□	□
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 U.S. Fish and Wildlife Service?	□	□	□	■
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?	□	□	□	■
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?	□	□	□	■
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	□	□	■	□
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?	□	□	□	■

IV. Cultural Resources

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	□	□	■	□
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	□	□	■	□
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	□	□	■	□
d. Disturb any human remains, including those interred outside of formal cemeteries?	□	□	■	□
e. Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code § 21074?	□	■	□	□

V. Geology and Soils

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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.	□	□	■	□
ii. Strong seismic ground shaking?	□	□	■	□
iii. Seismic-related ground failure, including liquefaction?	□	□	■	□
iv. Landslides?	□	□	■	□
b. Result in substantial soil erosion or the loss of topsoil?	□	□	■	□

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	□	■	□	□
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?	□	■	□	□
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?	□	□	□	■

VI. Greenhouse Gas Emissions

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	□		■	□
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	□	□	■	□

VII. Hazards and Hazardous Materials

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	□	□	■	□
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?	□	□	■	□

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	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?	□	□	■	□
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?	□	□	■	□
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?	□	□	□	■
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?	□	□	□	■
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	□	□	■	□
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?	□	□	■	□

VIII. Hydrology and Water Quality

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements?	□	□	■	□
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)?	□	□	■	□

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	□	□	■	□
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?	□	□	■	□
e. Cause significant alteration of receiving water quality during or following construction?	□	□	■	□
f. Cause an increase in impervious surfaces and associated runoff?	□	□	■	□
g. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	□	□	■	□
h. Cause potentially significant adverse impact on groundwater quality?	□	□	■	□
i. Cause or contribute to an exceedance of applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses?	□	□	■	□
j. Is the project tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list? If so, can it result in an increase in any pollutant for which the water body is already impaired?	□	□	■	□
k. Create or exacerbate already existing environmentally sensitive areas?	□	□	■	□
l. Create potentially significant environmental impacts on surface water quality to either marine, fresh, or wetland waters?	□	□	■	□
m. Impact aquatic, wetland, or riparian habitat?	□	□	■	□
n. Otherwise substantially degrade water quality?	□	□	■	□
o. 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?	□	□	□	■
p. Place within a 100-year flood hazard area, structures which would impede or redirect flood flows?	□	□	□	■

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
q. 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?	□	□	□	■
r. Inundation by seiche, tsunami, or mudflow?	□	□	□	■

IX. Land Use and Planning

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Physically 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?	□	□	■	□
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	□	□	□	■
d. Have a substantial adverse effect on a scenic vista?	□	□	□	■
e. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	□	□	□	■
f. Substantially degrade the existing visual character or quality of the site and its surroundings?	□	□	■	□
g. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	□	□	■	□

X. Mineral Resources

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	□	□	□	■
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?	□	□	□	■

XI. Noise

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
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?	□	■	□	□
b. Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?	□	■	□	□
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	□	□	■	□
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	□	□	■	□
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?	□	□	□	■
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?	□	□	□	■

XII. Population and Housing

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	□	□	■	□
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	□	□	□	■
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	□	□	□	■

XIII. Public Services

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	□	□	■	□
Police protection?	□	□	■	□
Schools?	□	□	■	□
Parks?	□	□	■	□
Other public facilities?	□	□	■	□

XIV. Recreation

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	□	□	■	□
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?	□	□	■	□

XV. Transportation/Traffic

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause the level of service (LOS) of a circulation element street to fall below a mid-range of LOS "D" and/or add more than 200 ADT to a circulation element street with a level of service (LOS) below the mid-range "D" yet above LOS "F?" According to the Escondido General Plan, the minimum acceptable LOS is "C"	□	□	■	□
b. Exceed, either individually or cumulatively, a level of service established by the county congestion management agency for designated roads and highways?	□	□	□	■
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?	□	□	□	■
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	□	□	□	■
e. Result in inadequate emergency access?	□	□	■	□
f. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	□	□	□	■

XVI. Utilities and Service Systems

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	□	□	■	□
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?	□	□	■	□
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause 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?	□	□	■	□
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	□	□	■	□
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	□	□	■	□
g. Comply with federal, state, and local statutes and regulations related to solid waste?	□	□	■	□

XVII. Mandatory Findings of Significance

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	□	■	□	□
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)?	□	□	■	□
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	□	■	□	□

Appendix A

AIR QUALITY AND GREENHOUSE GAS CALCULATIONS

Del Prado - Total Project

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	113.00	Dwelling Unit	7.06	113,000.00	323
Parking Lot	274.00	Space	2.47	109,600.00	0
Other Asphalt Surfaces	108.53	1000sqft	2.49	108,530.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2018
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on input from Touchstone Communities

Off-road Equipment - Based on input from Touchstone Communities

Off-road Equipment - Based on input from Touchstone Communities

Off-road Equipment - Based on input from Touchstone Communities

Off-road Equipment -

Off-road Equipment - Based on input from Touchstone Communities

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Based on input from Touchstone Communities

Off-road Equipment -

Grading -

Demolition -

Architectural Coating - Area revised based on North/South division. Low-VOC coatings.

Vehicle Trips - KOA 2015

Woodstoves - No Woodburning Devices

Area Coating - Low-VOC Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	55,909.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	55,909.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	167,727.00	0.00

tblArchitecturalCoating	ConstArea_Nonresidential_Interior	167,727.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	76,275.00	54,675.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	76,275.00	21,600.00
tblArchitecturalCoating	ConstArea_Residential_Interior	228,825.00	164,025.00
tblArchitecturalCoating	ConstArea_Residential_Interior	228,825.00	64,800.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Residential_Exterior	250	50
tblAreaCoating	Area_EF_Residential_Interior	250	50
tblAreaCoating	Area_Nonresidential_Exterior	55909	0
tblAreaCoating	Area_Nonresidential_Interior	167727	0
tblConstructionPhase	NumDays	20.00	261.00
tblConstructionPhase	NumDays	300.00	261.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	30.00	43.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	300.00	261.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	261.00
tblConstructionPhase	PhaseEndDate	4/30/2019	7/31/2018
tblConstructionPhase	PhaseEndDate	4/23/2018	4/30/2018
tblConstructionPhase	PhaseEndDate	3/3/2017	3/1/2017
tblConstructionPhase	PhaseEndDate	3/22/2017	4/21/2017
tblConstructionPhase	PhaseEndDate	10/9/2015	1/3/2017
tblConstructionPhase	PhaseEndDate	1/14/2019	1/31/2019

tblConstructionPhase	PhaseEndDate	8/14/2018	1/12/2018
tblConstructionPhase	PhaseEndDate	1/31/2020	4/30/2019
tblConstructionPhase	PhaseStartDate	5/1/2018	8/1/2017
tblConstructionPhase	PhaseStartDate	4/22/2017	5/1/2017
tblConstructionPhase	PhaseStartDate	1/4/2017	1/1/2017
tblConstructionPhase	PhaseStartDate	3/2/2017	4/1/2017
tblConstructionPhase	PhaseStartDate	10/8/2015	1/1/2017
tblConstructionPhase	PhaseStartDate	1/13/2018	2/1/2018
tblConstructionPhase	PhaseStartDate	8/1/2018	1/1/2018
tblConstructionPhase	PhaseStartDate	2/1/2019	5/1/2018
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	62.15	0.00
tblFireplaces	NumberNoFireplace	11.30	113.00
tblFireplaces	NumberWood	39.55	0.00
tblGrading	MaterialExported	0.00	1,966.00
tblGrading	MaterialExported	0.00	80.00
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	7.16	8.00
tblVehicleTrips	SU_TR	6.07	8.00
tblVehicleTrips	WD_TR	6.59	8.00
tblWoodstoves	NumberCatalytic	5.65	0.00
tblWoodstoves	NumberNoncatalytic	5.65	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2015	2.1100e-003	0.0225	0.0165	3.0000e-005	1.2700e-003	1.3000e-003	2.5600e-003	2.1000e-004	1.1900e-003	1.4100e-003	0.0000	2.4421	2.4421	6.1000e-004	0.0000	2.4548
2017	0.5712	3.9580	3.8143	6.3200e-003	0.5098	0.2128	0.7226	0.2022	0.2002	0.4024	0.0000	540.7693	540.7693	0.0843	0.0000	542.5404
2018	0.7292	3.5093	4.5905	8.8600e-003	0.3218	0.2088	0.5306	0.0866	0.2001	0.2866	0.0000	720.2593	720.2593	0.0708	0.0000	721.7463
2019	0.0762	0.2822	0.4024	8.2000e-004	0.0316	0.0166	0.0482	8.4700e-003	0.0161	0.0246	0.0000	64.7634	64.7634	5.6500e-003	0.0000	64.8820
Total	**1.3787**	**7.7719**	**8.8236**	**0.0160**	**0.8645**	**0.4395**	**1.3040**	**0.2974**	**0.4176**	**0.7150**	**0.0000**	**1,328.2342**	**1,328.2342**	**0.1614**	**0.0000**	**1,331.6235**

2.1 Overall Construction

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					
2015	2.1100e-003	0.0225	0.0165	3.0000e-005	6.7000e-004	1.3000e-003	1.9700e-003	1.2000e-004	1.1900e-003	1.3200e-003	0.0000	2.4421	2.4421	6.1000e-004	0.0000	2.4548
2017	0.5712	3.9580	3.8143	6.3200e-003	0.3231	0.2128	0.5358	0.1162	0.2002	0.3164	0.0000	540.7690	540.7690	0.0843	0.0000	542.5400
2018	0.7292	3.5093	4.5905	8.8600e-003	0.3218	0.2088	0.5306	0.0866	0.2001	0.2866	0.0000	720.2589	720.2589	0.0708	0.0000	721.7459
2019	0.0762	0.2822	0.4024	8.2000e-004	0.0316	0.0166	0.0482	8.4700e-003	0.0161	0.0246	0.0000	64.7634	64.7634	5.6500e-003	0.0000	64.8819
Total	**1.3787**	**7.7719**	**8.8236**	**0.0160**	**0.6772**	**0.4395**	**1.1166**	**0.2113**	**0.4176**	**0.6289**	**0.0000**	**1,328.2333**	**1,328.2333**	**0.1614**	**0.0000**	**1,331.6227**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**21.67**	**0.00**	**14.37**	**28.95**	**0.00**	**12.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	1.3550	9.8400e-003	0.8485	4.0000e-005		4.6200e-003	4.6200e-003		4.6200e-003	4.6200e-003	0.0000	1.3774	1.3774	1.3800e-003	0.0000	1.4063
Energy	8.4000e-003	0.0718	0.0306	4.6000e-004		5.8100e-003	5.8100e-003		5.8100e-003	5.8100e-003	0.0000	274.7410	274.7410	9.3100e-003	3.1200e-003	275.9036
Mobile	0.5474	1.2950	5.7828	0.0141	0.9706	0.0172	0.9879	0.2596	0.0159	0.2755	0.0000	1,046.6713	1,046.6713	0.0422	0.0000	1,047.5565
Waste						0.0000	0.0000		0.0000	0.0000	10.5515	0.0000	10.5515	0.6236	0.0000	23.6465
Water						0.0000	0.0000		0.0000	0.0000	2.3358	48.1824	50.5182	0.2418	6.0700e-003	57.4773
Total	**1.9108**	**1.3767**	**6.6619**	**0.0146**	**0.9706**	**0.0277**	**0.9983**	**0.2596**	**0.0263**	**0.2859**	**12.8872**	**1,370.9721**	**1,383.8594**	**0.9183**	**9.1900e-003**	**1,405.9902**

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	1.3550	9.8400e-003	0.8485	4.0000e-005		4.6200e-003	4.6200e-003		4.6200e-003	4.6200e-003	0.0000	1.3774	1.3774	1.3800e-003	0.0000	1.4063
Energy	6.7600e-003	0.0578	0.0246	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003	0.0000	256.5673	256.5673	8.9200e-003	2.8100e-003	257.6244
Mobile	0.5471	1.2934	5.7767	0.0141	0.9692	0.0172	0.9864	0.2592	0.0159	0.2751	0.0000	1,045.1350	1,045.1350	0.0421	0.0000	1,046.0190
Waste						0.0000	0.0000		0.0000	0.0000	5.2757	0.0000	5.2757	0.3118	0.0000	11.8233
Water						0.0000	0.0000		0.0000	0.0000	1.8686	37.6760	39.5446	0.1934	4.8500e-003	45.1090
Total	**1.9089**	**1.3610**	**6.6498**	**0.0145**	**0.9692**	**0.0265**	**0.9957**	**0.2592**	**0.0252**	**0.2844**	**7.1443**	**1,340.7558**	**1,347.9001**	**0.5576**	**7.6600e-003**	**1,361.9819**

	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	N20	CO2e
Percent Reduction	**0.10**	**1.14**	**0.18**	**0.75**	**0.15**	**4.19**	**0.26**	**0.15**	**4.41**	**0.55**	**44.56**	**2.20**	**2.60**	**39.27**	**16.65**	**3.13**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2015	10/7/2015	5	5	
2	Site Preparation	Site Preparation	1/1/2017	1/3/2017	5	2	
3	Grading	Grading	1/1/2017	3/1/2017	5	43	
4	North Site Paving	Paving	4/1/2017	4/21/2017	5	15	
5	North Site Building Construction	Building Construction	5/1/2017	4/30/2018	5	261	
6	North Site Architectural Coating	Architectural Coating	8/1/2017	7/31/2018	5	261	
7	South Site Paving	Paving	1/1/2018	1/12/2018	5	10	
8	South Site Building Construction	Building Construction	2/1/2018	1/31/2019	5	261	
9	South Site Architectural Coatings	Architectural Coating	5/1/2018	4/30/2019	5	261	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 129

Acres of Paving: 0

Residential Indoor: 164,025; Residential Outdoor: 54,675; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
North Site Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	1	8.00	162	0.38
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Excavators	0	8.00	162	0.38
North Site Building Construction	Cranes	0	7.00	226	0.29
North Site Building Construction	Forklifts	2	8.00	89	0.20
North Site Building Construction	Generator Sets	1	8.00	84	0.74
North Site Paving	Pavers	2	8.00	125	0.42
North Site Paving	Rollers	2	8.00	80	0.38

Demolition	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Rubber Tired Dozers	2	8.00	255	0.40
North Site Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Grading	Graders	0	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
North Site Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Scrapers	3	8.00	361	0.48
North Site Building Construction	Welders	0	8.00	46	0.45
South Site Architectural Coatings	Air Compressors	1	6.00	78	0.48
South Site Building Construction	Cranes	0	7.00	226	0.29
South Site Building Construction	Forklifts	2	8.00	89	0.20
South Site Building Construction	Generator Sets	1	8.00	84	0.74
South Site Paving	Pavers	2	8.00	125	0.42
South Site Paving	Paving Equipment	2	8.00	130	0.36
South Site Paving	Rollers	2	8.00	80	0.38
South Site Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
South Site Building Construction	Welders	0	8.00	46	0.45
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
North Site Building Construction	Air Compressors	1	8.00	78	0.48
South Site Building Construction	Air Compressors	1	8.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	2	5.00	0.00	10.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	10.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	246.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
North Site Building Construction	6	173.00	48.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
North Site Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
North Site Architectural Coating	1	35.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
South Site Architectural Coatings	1	35.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
South Site Building Construction	6	173.00	48.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
South Site Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2015

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					1.0800e-003	0.0000	1.0800e-003	1.6000e-004	0.0000	1.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9400e-003	0.0207	0.0146	2.0000e-005		1.2700e-003	1.2700e-003		1.1700e-003	1.1700e-003	0.0000	1.9997	1.9997	6.0000e-004	0.0000	2.0122
Total	**1.9400e-003**	**0.0207**	**0.0146**	**2.0000e-005**	**1.0800e-003**	**1.2700e-003**	**2.3500e-003**	**1.6000e-004**	**1.1700e-003**	**1.3300e-003**	**0.0000**	**1.9997**	**1.9997**	**6.0000e-004**	**0.0000**	**2.0122**

3.2 Demolition - 2015

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	1.2000e-004	1.6900e-003	1.3000e-003	0.0000	9.0000e-005	3.0000e-005	1.1000e-004	2.0000e-005	2.0000e-005	5.0000e-005	0.0000	0.3456	0.3456	0.0000	0.0000	0.3457
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	6.0000e-005	6.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0968	0.0968	1.0000e-005	0.0000	0.0969
Total	**1.7000e-004**	**1.7500e-003**	**1.9000e-003**	**0.0000**	**1.9000e-004**	**3.0000e-005**	**2.1000e-004**	**5.0000e-005**	**2.0000e-005**	**8.0000e-005**	**0.0000**	**0.4424**	**0.4424**	**1.0000e-005**	**0.0000**	**0.4426**

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					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9400e-003	0.0207	0.0146	2.0000e-005		1.2700e-003	1.2700e-003		1.1700e-003	1.1700e-003	0.0000	1.9997	1.9997	6.0000e-004	0.0000	2.0122
Total	**1.9400e-003**	**0.0207**	**0.0146**	**2.0000e-005**	**4.9000e-004**	**1.2700e-003**	**1.7600e-003**	**7.0000e-005**	**1.1700e-003**	**1.2400e-003**	**0.0000**	**1.9997**	**1.9997**	**6.0000e-004**	**0.0000**	**2.0122**

3.2 Demolition - 2015

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	1.2000e-004	1.6900e-003	1.3000e-003	0.0000	9.0000e-005	3.0000e-005	1.1000e-004	2.0000e-005	2.0000e-005	5.0000e-005	0.0000	0.3456	0.3456	0.0000	0.0000	0.3457
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	6.0000e-005	6.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0968	0.0968	1.0000e-005	0.0000	0.0969
Total	**1.7000e-004**	**1.7500e-003**	**1.9000e-003**	**0.0000**	**1.9000e-004**	**3.0000e-005**	**2.1000e-004**	**5.0000e-005**	**2.0000e-005**	**8.0000e-005**	**0.0000**	**0.4424**	**0.4424**	**1.0000e-005**	**0.0000**	**0.4426**

3.3 Site Preparation - 2017

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					0.0121	0.0000	0.0121	6.6200e-003	0.0000	6.6200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0100e-003	0.0325	0.0247	2.0000e-005		1.6800e-003	1.6800e-003		1.5500e-003	1.5500e-003	0.0000	2.2285	2.2285	6.8000e-004	0.0000	2.2429
Total	**3.0100e-003**	**0.0325**	**0.0247**	**2.0000e-005**	**0.0121**	**1.6800e-003**	**0.0137**	**6.6200e-003**	**1.5500e-003**	**8.1700e-003**	**0.0000**	**2.2285**	**2.2285**	**6.8000e-004**	**0.0000**	**2.2429**

3.3 Site Preparation - 2017

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	1.0000e-004	1.2900e-003	1.1500e-003	0.0000	9.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3357	0.3357	0.0000	0.0000	0.3358
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	3.9000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0718	0.0718	0.0000	0.0000	0.0719
Total	**1.3000e-004**	**1.3300e-003**	**1.5400e-003**	**0.0000**	**1.7000e-004**	**2.0000e-005**	**1.8000e-004**	**4.0000e-005**	**2.0000e-005**	**6.0000e-005**	**0.0000**	**0.4076**	**0.4076**	**0.0000**	**0.0000**	**0.4077**

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					5.4200e-003	0.0000	5.4200e-003	2.9800e-003	0.0000	2.9800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0100e-003	0.0325	0.0247	2.0000e-005		1.6800e-003	1.6800e-003		1.5500e-003	1.5500e-003	0.0000	2.2285	2.2285	6.8000e-004	0.0000	2.2429
Total	**3.0100e-003**	**0.0325**	**0.0247**	**2.0000e-005**	**5.4200e-003**	**1.6800e-003**	**7.1000e-003**	**2.9800e-003**	**1.5500e-003**	**4.5300e-003**	**0.0000**	**2.2285**	**2.2285**	**6.8000e-004**	**0.0000**	**2.2429**

3.3 Site Preparation - 2017

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	1.0000e-004	1.2900e-003	1.1500e-003	0.0000	9.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3357	0.3357	0.0000	0.0000	0.3358
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	3.9000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0718	0.0718	0.0000	0.0000	0.0719
Total	**1.3000e-004**	**1.3300e-003**	**1.5400e-003**	**0.0000**	**1.7000e-004**	**2.0000e-005**	**1.8000e-004**	**4.0000e-005**	**2.0000e-005**	**6.0000e-005**	**0.0000**	**0.4076**	**0.4076**	**0.0000**	**0.0000**	**0.4077**

3.4 Grading - 2017

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					0.3275	0.0000	0.3275	0.1498	0.0000	0.1498	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1486	1.7507	1.1882	1.4800e-003		0.0784	0.0784		0.0722	0.0722	0.0000	137.0502	137.0502	0.0420	0.0000	137.9321
Total	**0.1486**	**1.7507**	**1.1882**	**1.4800e-003**	**0.3275**	**0.0784**	**0.4059**	**0.1498**	**0.0722**	**0.2219**	**0.0000**	**137.0502**	**137.0502**	**0.0420**	**0.0000**	**137.9321**

3.4 Grading - 2017

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	2.4100e-003	0.0319	0.0282	9.0000e-005	2.1000e-003	4.1000e-004	2.5100e-003	5.8000e-004	3.8000e-004	9.6000e-004	0.0000	8.2584	8.2584	6.0000e-005	0.0000	8.2596
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	1.5900e-003	0.0151	4.0000e-005	3.1000e-003	2.0000e-005	3.1300e-003	8.2000e-004	2.0000e-005	8.5000e-004	0.0000	2.7804	2.7804	1.4000e-004	0.0000	2.7833
Total	**3.6100e-003**	**0.0334**	**0.0433**	**1.3000e-004**	**5.2000e-003**	**4.3000e-004**	**5.6400e-003**	**1.4000e-003**	**4.0000e-004**	**1.8100e-003**	**0.0000**	**11.0388**	**11.0388**	**2.0000e-004**	**0.0000**	**11.0430**

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					0.1474	0.0000	0.1474	0.0674	0.0000	0.0674	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1486	1.7507	1.1882	1.4800e-003		0.0784	0.0784		0.0722	0.0722	0.0000	137.0501	137.0501	0.0420	0.0000	137.9319
Total	**0.1486**	**1.7507**	**1.1882**	**1.4800e-003**	**0.1474**	**0.0784**	**0.2258**	**0.0674**	**0.0722**	**0.1396**	**0.0000**	**137.0501**	**137.0501**	**0.0420**	**0.0000**	**137.9319**

3.4 Grading - 2017

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	2.4100e-003	0.0319	0.0282	9.0000e-005	2.1000e-003	4.1000e-004	2.5100e-003	5.8000e-004	3.8000e-004	9.6000e-004	0.0000	8.2584	8.2584	6.0000e-005	0.0000	8.2596
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	1.5900e-003	0.0151	4.0000e-005	3.1000e-003	2.0000e-005	3.1300e-003	8.2000e-004	2.0000e-005	8.5000e-004	0.0000	2.7804	2.7804	1.4000e-004	0.0000	2.7833
Total	**3.6100e-003**	**0.0334**	**0.0433**	**1.3000e-004**	**5.2000e-003**	**4.3000e-004**	**5.6400e-003**	**1.4000e-003**	**4.0000e-004**	**1.8100e-003**	**0.0000**	**11.0388**	**11.0388**	**2.0000e-004**	**0.0000**	**11.0430**

3.5 North Site Paving - 2017

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	0.0143	0.1522	0.1105	1.7000e-004		8.5400e-003	8.5400e-003		7.8500e-003	7.8500e-003	0.0000	15.5201	15.5201	4.7600e-003	0.0000	15.6199
Paving	6.5000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0208**	**0.1522**	**0.1105**	**1.7000e-004**		**8.5400e-003**	**8.5400e-003**		**7.8500e-003**	**7.8500e-003**	**0.0000**	**15.5201**	**15.5201**	**4.7600e-003**	**0.0000**	**15.6199**

3.5 North Site Paving - 2017

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	4.6000e-004	4.3800e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8082	0.8082	4.0000e-005	0.0000	0.8091
Total	**3.5000e-004**	**4.6000e-004**	**4.3800e-003**	**1.0000e-005**	**9.0000e-004**	**1.0000e-005**	**9.1000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.8082**	**0.8082**	**4.0000e-005**	**0.0000**	**0.8091**

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	0.0143	0.1522	0.1105	1.7000e-004		8.5400e-003	8.5400e-003		7.8500e-003	7.8500e-003	0.0000	15.5200	15.5200	4.7600e-003	0.0000	15.6199
Paving	6.5000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0208**	**0.1522**	**0.1105**	**1.7000e-004**		**8.5400e-003**	**8.5400e-003**		**7.8500e-003**	**7.8500e-003**	**0.0000**	**15.5200**	**15.5200**	**4.7600e-003**	**0.0000**	**15.6199**

3.5 North Site Paving - 2017

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	4.6000e-004	4.3800e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8082	0.8082	4.0000e-005	0.0000	0.8091
Total	**3.5000e-004**	**4.6000e-004**	**4.3800e-003**	**1.0000e-005**	**9.0000e-004**	**1.0000e-005**	**9.1000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.8082**	**0.8082**	**4.0000e-005**	**0.0000**	**0.8091**

3.6 North Site Building Construction - 2017

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	0.1741	1.4313	1.1333	1.6700e-003		0.1079	0.1079		0.1030	0.1030	0.0000	148.2612	148.2612	0.0283	0.0000	148.8554
Total	**0.1741**	**1.4313**	**1.1333**	**1.6700e-003**		**0.1079**	**0.1079**		**0.1030**	**0.1030**	**0.0000**	**148.2612**	**148.2612**	**0.0283**	**0.0000**	**148.8554**

3.6 North Site Building Construction - 2017

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0437	0.3668	0.5432	1.0000e-003	0.0273	5.2500e-003	0.0326	7.8200e-003	4.8300e-003	0.0126	0.0000	89.0820	89.0820	6.7000e-004	0.0000	89.0961
Worker	0.0471	0.0623	0.5893	1.4900e-003	0.1214	9.0000e-004	0.1223	0.0323	8.3000e-004	0.0331	0.0000	108.7533	108.7533	5.5300e-003	0.0000	108.8694
Total	**0.0908**	**0.4291**	**1.1325**	**2.4900e-003**	**0.1487**	**6.1500e-003**	**0.1549**	**0.0401**	**5.6600e-003**	**0.0457**	**0.0000**	**197.8353**	**197.8353**	**6.2000e-003**	**0.0000**	**197.9655**

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	0.1741	1.4313	1.1333	1.6700e-003		0.1079	0.1079		0.1030	0.1030	0.0000	148.2611	148.2611	0.0283	0.0000	148.8553
Total	**0.1741**	**1.4313**	**1.1333**	**1.6700e-003**		**0.1079**	**0.1079**		**0.1030**	**0.1030**	**0.0000**	**148.2611**	**148.2611**	**0.0283**	**0.0000**	**148.8553**

3.6 North Site Building Construction - 2017

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0437	0.3668	0.5432	1.0000e-003	0.0273	5.2500e-003	0.0326	7.8200e-003	4.8300e-003	0.0126	0.0000	89.0820	89.0820	6.7000e-004	0.0000	89.0961
Worker	0.0471	0.0623	0.5893	1.4900e-003	0.1214	9.0000e-004	0.1223	0.0323	8.3000e-004	0.0331	0.0000	108.7533	108.7533	5.5300e-003	0.0000	108.8694
Total	**0.0908**	**0.4291**	**1.1325**	**2.4900e-003**	**0.1487**	**6.1500e-003**	**0.1549**	**0.0401**	**5.6600e-003**	**0.0457**	**0.0000**	**197.8353**	**197.8353**	**6.2000e-003**	**0.0000**	**197.9655**

3.6 North Site Building Construction - 2018

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	0.0742	0.6252	0.5474	8.2000e-004		0.0447	0.0447		0.0427	0.0427	0.0000	72.2926	72.2926	0.0135	0.0000	72.5767
Total	**0.0742**	**0.6252**	**0.5474**	**8.2000e-004**		**0.0447**	**0.0447**		**0.0427**	**0.0427**	**0.0000**	**72.2926**	**72.2926**	**0.0135**	**0.0000**	**72.5767**

3.6 North Site Building Construction - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0202	0.1628	0.2552	4.9000e-004	0.0134	2.3900e-003	0.0158	3.8400e-003	2.2000e-003	6.0400e-003	0.0000	43.0254	43.0254	3.2000e-004	0.0000	43.0322
Worker	0.0210	0.0280	0.2620	7.3000e-004	0.0597	4.4000e-004	0.0601	0.0159	4.0000e-004	0.0163	0.0000	51.4376	51.4376	2.5300e-003	0.0000	51.4906
Total	**0.0412**	**0.1907**	**0.5171**	**1.2200e-003**	**0.0731**	**2.8300e-003**	**0.0759**	**0.0197**	**2.6000e-003**	**0.0223**	**0.0000**	**94.4629**	**94.4629**	**2.8500e-003**	**0.0000**	**94.5228**

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	0.0742	0.6252	0.5474	8.2000e-004		0.0447	0.0447		0.0427	0.0427	0.0000	72.2926	72.2926	0.0135	0.0000	72.5766
Total	**0.0742**	**0.6252**	**0.5474**	**8.2000e-004**		**0.0447**	**0.0447**		**0.0427**	**0.0427**	**0.0000**	**72.2926**	**72.2926**	**0.0135**	**0.0000**	**72.5766**

3.6 North Site Building Construction - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0202	0.1628	0.2552	4.9000e-004	0.0134	2.3900e-003	0.0158	3.8400e-003	2.2000e-003	6.0400e-003	0.0000	43.0254	43.0254	3.2000e-004	0.0000	43.0322
Worker	0.0210	0.0280	0.2620	7.3000e-004	0.0597	4.4000e-004	0.0601	0.0159	4.0000e-004	0.0163	0.0000	51.4376	51.4376	2.5300e-003	0.0000	51.4906
Total	**0.0412**	**0.1907**	**0.5171**	**1.2200e-003**	**0.0731**	**2.8300e-003**	**0.0759**	**0.0197**	**2.6000e-003**	**0.0223**	**0.0000**	**94.4629**	**94.4629**	**2.8500e-003**	**0.0000**	**94.5228**

3.7 North Site Architectural Coating - 2017

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	0.1058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0181	0.1191	0.1018	1.6000e-004		9.4500e-003	9.4500e-003		9.4500e-003	9.4500e-003	0.0000	13.9152	13.9152	1.4700e-003	0.0000	13.9461
Total	**0.1239**	**0.1191**	**0.1018**	**1.6000e-004**		**9.4500e-003**	**9.4500e-003**		**9.4500e-003**	**9.4500e-003**	**0.0000**	**13.9152**	**13.9152**	**1.4700e-003**	**0.0000**	**13.9461**

3.7 North Site Architectural Coating - 2017

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9300e-003	7.8500e-003	0.0743	1.9000e-004	0.0153	1.1000e-004	0.0154	4.0600e-003	1.1000e-004	4.1700e-003	0.0000	13.7042	13.7042	7.0000e-004	0.0000	13.7188
Total	**5.9300e-003**	**7.8500e-003**	**0.0743**	**1.9000e-004**	**0.0153**	**1.1000e-004**	**0.0154**	**4.0600e-003**	**1.1000e-004**	**4.1700e-003**	**0.0000**	**13.7042**	**13.7042**	**7.0000e-004**	**0.0000**	**13.7188**

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	0.1058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0181	0.1191	0.1018	1.6000e-004		9.4500e-003	9.4500e-003		9.4500e-003	9.4500e-003	0.0000	13.9152	13.9152	1.4700e-003	0.0000	13.9461
Total	**0.1239**	**0.1191**	**0.1018**	**1.6000e-004**		**9.4500e-003**	**9.4500e-003**		**9.4500e-003**	**9.4500e-003**	**0.0000**	**13.9152**	**13.9152**	**1.4700e-003**	**0.0000**	**13.9461**

3.7 North Site Architectural Coating - 2017

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9300e-003	7.8500e-003	0.0743	1.9000e-004	0.0153	1.1000e-004	0.0154	4.0600e-003	1.1000e-004	4.1700e-003	0.0000	13.7042	13.7042	7.0000e-004	0.0000	13.7188
Total	**5.9300e-003**	**7.8500e-003**	**0.0743**	**1.9000e-004**	**0.0153**	**1.1000e-004**	**0.0154**	**4.0600e-003**	**1.1000e-004**	**4.1700e-003**	**0.0000**	**13.7042**	**13.7042**	**7.0000e-004**	**0.0000**	**13.7188**

3.7 North Site Architectural Coating - 2018

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	0.1476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0227	0.1524	0.1409	2.3000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	19.4048	19.4048	1.8400e-003	0.0000	19.4435
Total	**0.1703**	**0.1524**	**0.1409**	**2.3000e-004**		**0.0114**	**0.0114**		**0.0114**	**0.0114**	**0.0000**	**19.4048**	**19.4048**	**1.8400e-003**	**0.0000**	**19.4435**

3.7 North Site Architectural Coating - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5100e-003	9.9900e-003	0.0937	2.6000e-004	0.0213	1.6000e-004	0.0215	5.6700e-003	1.4000e-004	5.8100e-003	0.0000	18.3928	18.3928	9.0000e-004	0.0000	18.4118
Total	**7.5100e-003**	**9.9900e-003**	**0.0937**	**2.6000e-004**	**0.0213**	**1.6000e-004**	**0.0215**	**5.6700e-003**	**1.4000e-004**	**5.8100e-003**	**0.0000**	**18.3928**	**18.3928**	**9.0000e-004**	**0.0000**	**18.4118**

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	0.1476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0227	0.1524	0.1409	2.3000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	19.4047	19.4047	1.8400e-003	0.0000	19.4435
Total	**0.1703**	**0.1524**	**0.1409**	**2.3000e-004**		**0.0114**	**0.0114**		**0.0114**	**0.0114**	**0.0000**	**19.4047**	**19.4047**	**1.8400e-003**	**0.0000**	**19.4435**

3.7 North Site Architectural Coating - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5100e-003	9.9900e-003	0.0937	2.6000e-004	0.0213	1.6000e-004	0.0215	5.6700e-003	1.4000e-004	5.8100e-003	0.0000	18.3928	18.3928	9.0000e-004	0.0000	18.4118
Total	**7.5100e-003**	**9.9900e-003**	**0.0937**	**2.6000e-004**	**0.0213**	**1.6000e-004**	**0.0215**	**5.6700e-003**	**1.4000e-004**	**5.8100e-003**	**0.0000**	**18.3928**	**18.3928**	**9.0000e-004**	**0.0000**	**18.4118**

3.8 South Site Paving - 2018

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	8.0600e-003	0.0858	0.0725	1.1000e-004		4.6900e-003	4.6900e-003		4.3200e-003	4.3200e-003	0.0000	10.1844	10.1844	3.1700e-003	0.0000	10.2510
Paving	6.5000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0146**	**0.0858**	**0.0725**	**1.1000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3200e-003**	**4.3200e-003**	**0.0000**	**10.1844**	**10.1844**	**3.1700e-003**	**0.0000**	**10.2510**

3.8 South Site Paving - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	2.8000e-004	2.6400e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5186	0.5186	3.0000e-005	0.0000	0.5191
Total	**2.1000e-004**	**2.8000e-004**	**2.6400e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5186**	**0.5186**	**3.0000e-005**	**0.0000**	**0.5191**

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	8.0600e-003	0.0858	0.0725	1.1000e-004		4.6900e-003	4.6900e-003		4.3200e-003	4.3200e-003	0.0000	10.1844	10.1844	3.1700e-003	0.0000	10.2509
Paving	6.5000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0146**	**0.0858**	**0.0725**	**1.1000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3200e-003**	**4.3200e-003**	**0.0000**	**10.1844**	**10.1844**	**3.1700e-003**	**0.0000**	**10.2509**

3.8 South Site Paving - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	2.8000e-004	2.6400e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5186	0.5186	3.0000e-005	0.0000	0.5191
Total	**2.1000e-004**	**2.8000e-004**	**2.6400e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5186**	**0.5186**	**3.0000e-005**	**0.0000**	**0.5191**

3.9 South Site Building Construction - 2018

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	0.2053	1.7301	1.5150	2.2600e-003		0.1238	0.1238		0.1183	0.1183	0.0000	200.0657	200.0657	0.0374	0.0000	200.8518
Total	**0.2053**	**1.7301**	**1.5150**	**2.2600e-003**		**0.1238**	**0.1238**		**0.1183**	**0.1183**	**0.0000**	**200.0657**	**200.0657**	**0.0374**	**0.0000**	**200.8518**

3.9 South Site Building Construction - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0559	0.4504	0.7061	1.3500e-003	0.0372	6.6300e-003	0.0438	0.0106	6.0900e-003	0.0167	0.0000	119.0702	119.0702	9.0000e-004	0.0000	119.0890
Worker	0.0582	0.0774	0.7250	2.0300e-003	0.1651	1.2100e-003	0.1663	0.0439	1.1200e-003	0.0450	0.0000	142.3504	142.3504	6.9900e-003	0.0000	142.4973
Total	**0.1140**	**0.5278**	**1.4311**	**3.3800e-003**	**0.2023**	**7.8400e-003**	**0.2101**	**0.0545**	**7.2100e-003**	**0.0617**	**0.0000**	**261.4206**	**261.4206**	**7.8900e-003**	**0.0000**	**261.5863**

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	0.2053	1.7301	1.5150	2.2600e-003		0.1238	0.1238		0.1183	0.1183	0.0000	200.0654	200.0654	0.0374	0.0000	200.8516
Total	**0.2053**	**1.7301**	**1.5150**	**2.2600e-003**		**0.1238**	**0.1238**		**0.1183**	**0.1183**	**0.0000**	**200.0654**	**200.0654**	**0.0374**	**0.0000**	**200.8516**

3.9 South Site Building Construction - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0559	0.4504	0.7061	1.3500e-003	0.0372	6.6300e-003	0.0438	0.0106	6.0900e-003	0.0167	0.0000	119.0702	119.0702	9.0000e-004	0.0000	119.0890
Worker	0.0582	0.0774	0.7250	2.0300e-003	0.1651	1.2100e-003	0.1663	0.0439	1.1200e-003	0.0450	0.0000	142.3504	142.3504	6.9900e-003	0.0000	142.4973
Total	**0.1140**	**0.5278**	**1.4311**	**3.3800e-003**	**0.2023**	**7.8400e-003**	**0.2101**	**0.0545**	**7.2100e-003**	**0.0617**	**0.0000**	**261.4206**	**261.4206**	**7.8900e-003**	**0.0000**	**261.5863**

3.9 South Site Building Construction - 2019

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	0.0176	0.1515	0.1449	2.2000e-004		0.0103	0.0103		9.8000e-003	9.8000e-003	0.0000	19.1870	19.1870	3.5200e-003	0.0000	19.2609
Total	**0.0176**	**0.1515**	**0.1449**	**2.2000e-004**		**0.0103**	**0.0103**		**9.8000e-003**	**9.8000e-003**	**0.0000**	**19.1870**	**19.1870**	**3.5200e-003**	**0.0000**	**19.2609**

3.9 South Site Building Construction - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0400e-003	0.0396	0.0651	1.3000e-004	3.5900e-003	6.0000e-004	4.1900e-003	1.0300e-003	5.5000e-004	1.5700e-003	0.0000	11.3085	11.3085	8.0000e-005	0.0000	11.3103
Worker	5.2100e-003	6.9100e-003	0.0644	2.0000e-004	0.0160	1.2000e-004	0.0161	4.2400e-003	1.1000e-004	4.3500e-003	0.0000	13.2589	13.2589	6.4000e-004	0.0000	13.2722
Total	**0.0103**	**0.0465**	**0.1296**	**3.3000e-004**	**0.0195**	**7.2000e-004**	**0.0203**	**5.2700e-003**	**6.6000e-004**	**5.9200e-003**	**0.0000**	**24.5674**	**24.5674**	**7.2000e-004**	**0.0000**	**24.5825**

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	0.0176	0.1515	0.1449	2.2000e-004		0.0103	0.0103		9.8000e-003	9.8000e-003	0.0000	19.1870	19.1870	3.5200e-003	0.0000	19.2609
Total	**0.0176**	**0.1515**	**0.1449**	**2.2000e-004**		**0.0103**	**0.0103**		**9.8000e-003**	**9.8000e-003**	**0.0000**	**19.1870**	**19.1870**	**3.5200e-003**	**0.0000**	**19.2609**

3.9 South Site Building Construction - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0400e-003	0.0396	0.0651	1.3000e-004	3.5900e-003	6.0000e-004	4.1900e-003	1.0300e-003	5.5000e-004	1.5700e-003	0.0000	11.3085	11.3085	8.0000e-005	0.0000	11.3103
Worker	5.2100e-003	6.9100e-003	0.0644	2.0000e-004	0.0160	1.2000e-004	0.0161	4.2400e-003	1.1000e-004	4.3500e-003	0.0000	13.2589	13.2589	6.4000e-004	0.0000	13.2722
Total	**0.0103**	**0.0465**	**0.1296**	**3.3000e-004**	**0.0195**	**7.2000e-004**	**0.0203**	**5.2700e-003**	**6.6000e-004**	**5.9200e-003**	**0.0000**	**24.5674**	**24.5674**	**7.2000e-004**	**0.0000**	**24.5825**

3.10 South Site Architectural Coatings - 2018

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	0.0671					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0261	0.1755	0.1622	2.6000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	22.3410	22.3410	2.1200e-003	0.0000	22.3856
Total	**0.0933**	**0.1755**	**0.1622**	**2.6000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**22.3410**	**22.3410**	**2.1200e-003**	**0.0000**	**22.3856**

3.10 South Site Architectural Coatings - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6500e-003	0.0115	0.1079	3.0000e-004	0.0246	1.8000e-004	0.0247	6.5300e-003	1.7000e-004	6.6900e-003	0.0000	21.1759	21.1759	1.0400e-003	0.0000	21.1978
Total	**8.6500e-003**	**0.0115**	**0.1079**	**3.0000e-004**	**0.0246**	**1.8000e-004**	**0.0247**	**6.5300e-003**	**1.7000e-004**	**6.6900e-003**	**0.0000**	**21.1759**	**21.1759**	**1.0400e-003**	**0.0000**	**21.1978**

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	0.0671					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0261	0.1755	0.1622	2.6000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	22.3410	22.3410	2.1200e-003	0.0000	22.3856
Total	**0.0933**	**0.1755**	**0.1622**	**2.6000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**22.3410**	**22.3410**	**2.1200e-003**	**0.0000**	**22.3856**

3.10 South Site Architectural Coatings - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6500e-003	0.0115	0.1079	3.0000e-004	0.0246	1.8000e-004	0.0247	6.5300e-003	1.7000e-004	6.6900e-003	0.0000	21.1759	21.1759	1.0400e-003	0.0000	21.1978
Total	**8.6500e-003**	**0.0115**	**0.1079**	**3.0000e-004**	**0.0246**	**1.8000e-004**	**0.0247**	**6.5300e-003**	**1.7000e-004**	**6.6900e-003**	**0.0000**	**21.1759**	**21.1759**	**1.0400e-003**	**0.0000**	**21.1978**

3.10 South Site Architectural Coatings - 2019

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	0.0330					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0115	0.0789	0.0792	1.3000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003	0.0000	10.9790	10.9790	9.3000e-004	0.0000	10.9985
Total	**0.0445**	**0.0789**	**0.0792**	**1.3000e-004**		**5.5400e-003**	**5.5400e-003**		**5.5400e-003**	**5.5400e-003**	**0.0000**	**10.9790**	**10.9790**	**9.3000e-004**	**0.0000**	**10.9985**

3.10 South Site Architectural Coatings - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9400e-003	5.2300e-003	0.0488	1.5000e-004	0.0121	9.0000e-005	0.0122	3.2100e-003	8.0000e-005	3.2900e-003	0.0000	10.0300	10.0300	4.8000e-004	0.0000	10.0401
Total	**3.9400e-003**	**5.2300e-003**	**0.0488**	**1.5000e-004**	**0.0121**	**9.0000e-005**	**0.0122**	**3.2100e-003**	**8.0000e-005**	**3.2900e-003**	**0.0000**	**10.0300**	**10.0300**	**4.8000e-004**	**0.0000**	**10.0401**

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	0.0330					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0115	0.0789	0.0792	1.3000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003	0.0000	10.9790	10.9790	9.3000e-004	0.0000	10.9985
Total	**0.0445**	**0.0789**	**0.0792**	**1.3000e-004**		**5.5400e-003**	**5.5400e-003**		**5.5400e-003**	**5.5400e-003**	**0.0000**	**10.9790**	**10.9790**	**9.3000e-004**	**0.0000**	**10.9985**

3.10 South Site Architectural Coatings - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9400e-003	5.2300e-003	0.0488	1.5000e-004	0.0121	9.0000e-005	0.0122	3.2100e-003	8.0000e-005	3.2900e-003	0.0000	10.0300	10.0300	4.8000e-004	0.0000	10.0401
Total	**3.9400e-003**	**5.2300e-003**	**0.0488**	**1.5000e-004**	**0.0121**	**9.0000e-005**	**0.0122**	**3.2100e-003**	**8.0000e-005**	**3.2900e-003**	**0.0000**	**10.0300**	**10.0300**	**4.8000e-004**	**0.0000**	**10.0401**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

	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	0.5471	1.2934	5.7767	0.0141	0.9692	0.0172	0.9864	0.2592	0.0159	0.2751	0.0000	1,045.1350	1,045.1350	0.0421	0.0000	1,046.0190
Unmitigated	0.5474	1.2950	5.7828	0.0141	0.9706	0.0172	0.9879	0.2596	0.0159	0.2755	0.0000	1,046.6713	1,046.6713	0.0422	0.0000	1,047.5565

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	904.00	904.00	904.00	2,581,194	2,577,295
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	904.00	904.00	904.00	2,581,194	2,577,295

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	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						0.0000	0.0000		0.0000	0.0000	0.0000	189.6712	189.6712	7.6300e-003	1.5800e-003	190.3212
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	191.5794	191.5794	7.7100e-003	1.6000e-003	192.2359
NaturalGas Mitigated	6.7600e-003	0.0578	0.0246	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003	0.0000	66.8961	66.8961	1.2800e-003	1.2300e-003	67.3032
NaturalGas Unmitigated	8.4000e-003	0.0718	0.0306	4.6000e-004		5.8100e-003	5.8100e-003		5.8100e-003	5.8100e-003	0.0000	83.1616	83.1616	1.5900e-003	1.5200e-003	83.6677

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/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.55839e+006	8.4000e-003	0.0718	0.0306	4.6000e-004		5.8100e-003	5.8100e-003		5.8100e-003	5.8100e-003	0.0000	83.1616	83.1616	1.5900e-003	1.5200e-003	83.6677
Total		**8.4000e-003**	**0.0718**	**0.0306**	**4.6000e-004**		**5.8100e-003**	**5.8100e-003**		**5.8100e-003**	**5.8100e-003**	**0.0000**	**83.1616**	**83.1616**	**1.5900e-003**	**1.5200e-003**	**83.6677**

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/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.25359e+006	6.7600e-003	0.0578	0.0246	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003	0.0000	66.8961	66.8961	1.2800e-003	1.2300e-003	67.3032
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**6.7600e-003**	**0.0578**	**0.0246**	**3.7000e-004**		**4.6700e-003**	**4.6700e-003**		**4.6700e-003**	**4.6700e-003**	**0.0000**	**66.8961**	**66.8961**	**1.2800e-003**	**1.2300e-003**	**67.3032**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	489765	160.0594	6.4400e-003	1.3300e-003	160.6079
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	96448	31.5201	1.2700e-003	2.6000e-004	31.6281
Total		**191.5794**	**7.7100e-003**	**1.5900e-003**	**192.2359**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	483926	158.1511	6.3700e-003	1.3200e-003	158.6931
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	96448	31.5201	1.2700e-003	2.6000e-004	31.6281
Total		**189.6712**	**7.6400e-003**	**1.5800e-003**	**190.3212**

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	1.3550	9.8400e-003	0.8485	4.0000e-005		4.6200e-003	4.6200e-003		4.6200e-003	4.6200e-003	0.0000	1.3774	1.3774	1.3800e-003	0.0000	1.4063
Unmitigated	1.3550	9.8400e-003	0.8485	4.0000e-005		4.6200e-003	4.6200e-003		4.6200e-003	4.6200e-003	0.0000	1.3774	1.3774	1.3800e-003	0.0000	1.4063

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	0.0354					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2932					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0264	9.8400e-003	0.8485	4.0000e-005		4.6200e-003	4.6200e-003		4.6200e-003	4.6200e-003	0.0000	1.3774	1.3774	1.3800e-003	0.0000	1.4063
Total	**1.3550**	**9.8400e-003**	**0.8485**	**4.0000e-005**		**4.6200e-003**	**4.6200e-003**		**4.6200e-003**	**4.6200e-003**	**0.0000**	**1.3774**	**1.3774**	**1.3800e-003**	**0.0000**	**1.4063**

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	0.0354					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2932					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0264	9.8400e-003	0.8485	4.0000e-005		4.6200e-003	4.6200e-003		4.6200e-003	4.6200e-003	0.0000	1.3774	1.3774	1.3800e-003	0.0000	1.4063
Total	**1.3550**	**9.8400e-003**	**0.8485**	**4.0000e-005**		**4.6200e-003**	**4.6200e-003**		**4.6200e-003**	**4.6200e-003**	**0.0000**	**1.3774**	**1.3774**	**1.3800e-003**	**0.0000**	**1.4063**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	39.5446	0.1934	4.8500e-003	45.1090
Unmitigated	50.5182	0.2418	6.0700e-003	57.4773

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	7.3624 / 4.64152	50.5182	0.2418	6.0700e-003	57.4773
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**50.5182**	**0.2418**	**6.0700e-003**	**57.4773**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	5.88992 / 3.71321	39.5446	0.1934	4.8500e-003	45.1090
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**39.5446**	**0.1934**	**4.8500e-003**	**45.1090**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.2757	0.3118	0.0000	11.8233
Unmitigated	10.5515	0.6236	0.0000	23.6465

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	51.98	10.5515	0.6236	0.0000	23.6465
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**10.5515**	**0.6236**	**0.0000**	**23.6465**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	25.99	5.2757	0.3118	0.0000	11.8233
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**5.2757**	**0.3118**	**0.0000**	**11.8233**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Del Prado - Total Project

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	113.00	Dwelling Unit	7.06	113,000.00	323
Parking Lot	274.00	Space	2.47	109,600.00	0
Other Asphalt Surfaces	108.53	1000sqft	2.49	108,530.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2018
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on input from Touchstone Communities

Off-road Equipment - Based on input from Touchstone Communities

Off-road Equipment - Based on input from Touchstone Communities

Off-road Equipment - Based on input from Touchstone Communities

Off-road Equipment -

Off-road Equipment - Based on input from Touchstone Communities

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Based on input from Touchstone Communities

Off-road Equipment -

Grading -

Demolition -

Architectural Coating - Area revised based on North/South division. Low-VOC coatings.

Vehicle Trips - KOA 2015

Woodstoves - No Woodburning Devices

Area Coating - Low-VOC Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	55,909.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	55,909.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	167,727.00	0.00

tblArchitecturalCoating	ConstArea_Nonresidential_Interior	167,727.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	76,275.00	54,675.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	76,275.00	21,600.00
tblArchitecturalCoating	ConstArea_Residential_Interior	228,825.00	164,025.00
tblArchitecturalCoating	ConstArea_Residential_Interior	228,825.00	64,800.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Residential_Exterior	250	50
tblAreaCoating	Area_EF_Residential_Interior	250	50
tblAreaCoating	Area_Nonresidential_Exterior	55909	0
tblAreaCoating	Area_Nonresidential_Interior	167727	0
tblConstructionPhase	NumDays	20.00	261.00
tblConstructionPhase	NumDays	300.00	261.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	30.00	43.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	300.00	261.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	261.00
tblConstructionPhase	PhaseEndDate	4/30/2019	7/31/2018
tblConstructionPhase	PhaseEndDate	4/23/2018	4/30/2018
tblConstructionPhase	PhaseEndDate	3/3/2017	3/1/2017
tblConstructionPhase	PhaseEndDate	3/22/2017	4/21/2017
tblConstructionPhase	PhaseEndDate	10/9/2015	1/3/2017
tblConstructionPhase	PhaseEndDate	1/14/2019	1/31/2019

tblConstructionPhase	PhaseEndDate	8/14/2018	1/12/2018
tblConstructionPhase	PhaseEndDate	1/31/2020	4/30/2019
tblConstructionPhase	PhaseStartDate	5/1/2018	8/1/2017
tblConstructionPhase	PhaseStartDate	4/22/2017	5/1/2017
tblConstructionPhase	PhaseStartDate	1/4/2017	1/1/2017
tblConstructionPhase	PhaseStartDate	3/2/2017	4/1/2017
tblConstructionPhase	PhaseStartDate	10/8/2015	1/1/2017
tblConstructionPhase	PhaseStartDate	1/13/2018	2/1/2018
tblConstructionPhase	PhaseStartDate	8/1/2018	1/1/2018
tblConstructionPhase	PhaseStartDate	2/1/2019	5/1/2018
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	62.15	0.00
tblFireplaces	NumberNoFireplace	11.30	113.00
tblFireplaces	NumberWood	39.55	0.00
tblGrading	MaterialExported	0.00	1,966.00
tblGrading	MaterialExported	0.00	80.00
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	7.16	8.00
tblVehicleTrips	SU_TR	6.07	8.00
tblVehicleTrips	WD_TR	6.59	8.00
tblWoodstoves	NumberCatalytic	5.65	0.00
tblWoodstoves	NumberNoncatalytic	5.65	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2015	0.8459	8.9828	6.6541	0.0104	0.5092	0.5182	1.0274	0.0861	0.4767	0.5628	0.0000	1,076.1702	1,076.1702	0.2668	0.0000	1,081.7738
2017	10.2382	116.7834	83.6862	0.1034	27.6987	5.3694	33.0681	13.6984	4.9399	18.6383	0.0000	10,495.1002	10,495.1002	2.9225	0.0000	10,556.4720
2018	8.0536	40.0571	53.8094	0.1009	3.7670	2.3651	6.1320	1.0119	2.2620	3.2740	0.0000	9,059.3316	9,059.3316	1.1644	0.0000	9,083.7847
2019	3.6118	19.1622	27.4195	0.0536	2.0272	1.0848	3.1120	0.5441	1.0402	1.5843	0.0000	4,712.6361	4,712.6361	0.4425	0.0000	4,721.9279
Total	**22.7495**	**184.9854**	**171.5692**	**0.2683**	**34.0021**	**9.3375**	**43.3396**	**15.3405**	**8.7188**	**24.0593**	**0.0000**	**25,343.2380**	**25,343.2380**	**4.7962**	**0.0000**	**25,443.9583**

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2015	0.8459	8.9828	6.6541	0.0104	0.2709	0.5182	0.7891	0.0500	0.4767	0.5267	0.0000	1,076.1702	1,076.1702	0.2668	0.0000	1,081.7738
2017	10.2382	116.7834	83.6862	0.1034	12.6937	5.3694	18.0631	6.2260	4.9399	11.1658	0.0000	10,495.1002	10,495.1002	2.9225	0.0000	10,556.4720
2018	8.0536	40.0571	53.8094	0.1009	3.7670	2.3651	6.1320	1.0119	2.2620	3.2740	0.0000	9,059.3316	9,059.3316	1.1644	0.0000	9,083.7847
2019	3.6118	19.1622	27.4195	0.0536	2.0272	1.0848	3.1120	0.5441	1.0402	1.5843	0.0000	4,712.6361	4,712.6361	0.4425	0.0000	4,721.9279
Total	**22.7495**	**184.9854**	**171.5692**	**0.2683**	**18.7588**	**9.3375**	**28.0963**	**7.8320**	**8.7188**	**16.5508**	**0.0000**	**25,343.2380**	**25,343.2380**	**4.7962**	**0.0000**	**25,443.9583**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**44.83**	**0.00**	**35.17**	**48.95**	**0.00**	**31.21**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	7.5731	0.1093	9.4282	5.0000e-004		0.0514	0.0514		0.0514	0.0514	0.0000	16.8701	16.8701	0.0169	0.0000	17.2243
Energy	0.0460	0.3935	0.1674	2.5100e-003		0.0318	0.0318		0.0318	0.0318		502.3009	502.3009	9.6300e-003	9.2100e-003	505.3579
Mobile	3.2006	7.1455	32.6349	0.0769	5.4615	0.0950	5.5565	1.4579	0.0876	1.5455		6,295.6344	6,295.6344	0.2557		6,301.0040
Total	**10.8198**	**7.6483**	**42.2305**	**0.0800**	**5.4615**	**0.1782**	**5.6397**	**1.4579**	**0.1708**	**1.6287**	**0.0000**	**6,814.8055**	**6,814.8055**	**0.2822**	**9.2100e-003**	**6,823.5861**

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	lb/day										lb/day					
Area	7.5731	0.1093	9.4282	5.0000e-004		0.0514	0.0514		0.0514	0.0514	0.0000	16.8701	16.8701	0.0169	0.0000	17.2243
Energy	0.0370	0.3165	0.1347	2.0200e-003		0.0256	0.0256		0.0256	0.0256		404.0567	404.0567	7.7400e-003	7.4100e-003	406.5157
Mobile	3.1991	7.1364	32.6017	0.0768	5.4533	0.0949	5.5482	1.4557	0.0874	1.5432		6,286.3907	6,286.3907	0.2554		6,291.7530
Total	**10.8092**	**7.5622**	**42.1646**	**0.0793**	**5.4533**	**0.1719**	**5.6251**	**1.4557**	**0.1644**	**1.6201**	**0.0000**	**6,707.3175**	**6,707.3175**	**0.2800**	**7.4100e-003**	**6,715.4930**

	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	N20	CO2e
Percent Reduction	**0.10**	**1.13**	**0.16**	**0.76**	**0.15**	**3.57**	**0.26**	**0.15**	**3.72**	**0.52**	**0.00**	**1.58**	**1.58**	**0.79**	**19.54**	**1.58**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2015	10/7/2015	5	5	
2	Site Preparation	Site Preparation	1/1/2017	1/3/2017	5	2	
3	Grading	Grading	1/1/2017	3/1/2017	5	43	
4	North Site Paving	Paving	4/1/2017	4/21/2017	5	15	
5	North Site Building Construction	Building Construction	5/1/2017	4/30/2018	5	261	
6	North Site Architectural Coating	Architectural Coating	8/1/2017	7/31/2018	5	261	
7	South Site Paving	Paving	1/1/2018	1/12/2018	5	10	
8	South Site Building Construction	Building Construction	2/1/2018	1/31/2019	5	261	
9	South Site Architectural Coatings	Architectural Coating	5/1/2018	4/30/2019	5	261	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 129

Acres of Paving: 0

Residential Indoor: 164,025; Residential Outdoor: 54,675; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
North Site Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	1	8.00	162	0.38

Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Excavators	0	8.00	162	0.38
North Site Building Construction	Cranes	0	7.00	226	0.29
North Site Building Construction	Forklifts	2	8.00	89	0.20
North Site Building Construction	Generator Sets	1	8.00	84	0.74
North Site Paving	Pavers	2	8.00	125	0.42
North Site Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Rubber Tired Dozers	2	8.00	255	0.40
North Site Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Grading	Graders	0	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
North Site Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Scrapers	3	8.00	361	0.48
North Site Building Construction	Welders	0	8.00	46	0.45
South Site Architectural Coatings	Air Compressors	1	6.00	78	0.48
South Site Building Construction	Cranes	0	7.00	226	0.29
South Site Building Construction	Forklifts	2	8.00	89	0.20
South Site Building Construction	Generator Sets	1	8.00	84	0.74
South Site Paving	Pavers	2	8.00	125	0.42
South Site Paving	Paving Equipment	2	8.00	130	0.36
South Site Paving	Rollers	2	8.00	80	0.38
South Site Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
South Site Building Construction	Welders	0	8.00	46	0.45
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
North Site Building Construction	Air Compressors	1	8.00	78	0.48

South Site Building Construction	Air Compressors	1	8.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	2	5.00	0.00	10.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	10.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	246.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
North Site Building Construction	6	173.00	48.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
North Site Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
North Site Architectural Coating	1	35.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
South Site Architectural Coatings	1	35.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
South Site Building Construction	6	173.00	48.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
South Site Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2015

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	lb/day										lb/day					
Fugitive Dust					0.4333	0.0000	0.4333	0.0656	0.0000	0.0656			0.0000			0.0000
Off-Road	0.7755	8.2831	5.8550	8.4000e-003		0.5077	0.5077		0.4671	0.4671		881.7151	881.7151	0.2632		887.2429
Total	**0.7755**	**8.2831**	**5.8550**	**8.4000e-003**	**0.4333**	**0.5077**	**0.9410**	**0.0656**	**0.4671**	**0.5327**		**881.7151**	**881.7151**	**0.2632**		**887.2429**

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	lb/day										lb/day					
Hauling	0.0501	0.6743	0.5580	1.5000e-003	0.0349	0.0102	0.0450	9.5400e-003	9.3600e-003	0.0189		152.1916	152.1916	1.2500e-003		152.2179
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0204	0.0254	0.2412	4.9000e-004	0.0411	3.2000e-004	0.0414	0.0109	3.0000e-004	0.0112		42.2635	42.2635	2.3600e-003		42.3131
Total	**0.0705**	**0.6997**	**0.7992**	**1.9900e-003**	**0.0759**	**0.0105**	**0.0864**	**0.0204**	**9.6600e-003**	**0.0301**		**194.4551**	**194.4551**	**3.6100e-003**		**194.5309**

3.2 Demolition - 2015

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	lb/day										lb/day					
Fugitive Dust					0.1950	0.0000	0.1950	0.0295	0.0000	0.0295			0.0000			0.0000
Off-Road	0.7755	8.2831	5.8550	8.4000e-003		0.5077	0.5077		0.4671	0.4671	0.0000	881.7151	881.7151	0.2632		887.2429
Total	**0.7755**	**8.2831**	**5.8550**	**8.4000e-003**	**0.1950**	**0.5077**	**0.7027**	**0.0295**	**0.4671**	**0.4966**	**0.0000**	**881.7151**	**881.7151**	**0.2632**		**887.2429**

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	lb/day										lb/day					
Hauling	0.0501	0.6743	0.5580	1.5000e-003	0.0349	0.0102	0.0450	9.5400e-003	9.3600e-003	0.0189		152.1916	152.1916	1.2500e-003		152.2179
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0204	0.0254	0.2412	4.9000e-004	0.0411	3.2000e-004	0.0414	0.0109	3.0000e-004	0.0112		42.2635	42.2635	2.3600e-003		42.3131
Total	**0.0705**	**0.6997**	**0.7992**	**1.9900e-003**	**0.0759**	**0.0105**	**0.0864**	**0.0204**	**9.6600e-003**	**0.0301**		**194.4551**	**194.4551**	**3.6100e-003**		**194.5309**

3.3 Site Preparation - 2017

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	lb/day										lb/day					
Fugitive Dust					12.0498	0.0000	12.0498	6.6213	0.0000	6.6213			0.0000			0.0000
Off-Road	3.0143	32.4731	24.6688	0.0240		1.6835	1.6835		1.5489	1.5489		2,456.5473	2,456.5473	0.7527		2,472.3536
Total	**3.0143**	**32.4731**	**24.6688**	**0.0240**	**12.0498**	**1.6835**	**13.7333**	**6.6213**	**1.5489**	**8.1702**		**2,456.5473**	**2,456.5473**	**0.7527**		**2,472.3536**

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	lb/day										lb/day					
Hauling	0.1018	1.2897	1.2398	3.7300e-003	0.0871	0.0169	0.1040	0.0239	0.0155	0.0394		369.5509	369.5509	2.6000e-003		369.6055
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0336	0.0418	0.3912	9.8000e-004	0.0822	6.0000e-004	0.0827	0.0218	5.5000e-004	0.0223		78.4148	78.4148	4.0300e-003		78.4994
Total	**0.1354**	**1.3315**	**1.6310**	**4.7100e-003**	**0.1693**	**0.0175**	**0.1867**	**0.0457**	**0.0161**	**0.0617**		**447.9657**	**447.9657**	**6.6300e-003**		**448.1048**

3.3 Site Preparation - 2017

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	lb/day										lb/day					
Fugitive Dust					5.4224	0.0000	5.4224	2.9796	0.0000	2.9796			0.0000			0.0000
Off-Road	3.0143	32.4731	24.6688	0.0240		1.6835	1.6835		1.5489	1.5489	0.0000	2,456.5473	2,456.5473	0.7527		2,472.3536
Total	**3.0143**	**32.4731**	**24.6688**	**0.0240**	**5.4224**	**1.6835**	**7.1059**	**2.9796**	**1.5489**	**4.5284**	**0.0000**	**2,456.5473**	**2,456.5473**	**0.7527**		**2,472.3536**

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	lb/day										lb/day					
Hauling	0.1018	1.2897	1.2398	3.7300e-003	0.0871	0.0169	0.1040	0.0239	0.0155	0.0394		369.5509	369.5509	2.6000e-003		369.6055
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0336	0.0418	0.3912	9.8000e-004	0.0822	6.0000e-004	0.0827	0.0218	5.5000e-004	0.0223		78.4148	78.4148	4.0300e-003		78.4994
Total	**0.1354**	**1.3315**	**1.6310**	**4.7100e-003**	**0.1693**	**0.0175**	**0.1867**	**0.0457**	**0.0161**	**0.0617**		**447.9657**	**447.9657**	**6.6300e-003**		**448.1048**

3.4 Grading - 2017

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	lb/day										lb/day					
Fugitive Dust					15.2321	0.0000	15.2321	6.9650	0.0000	6.9650			0.0000			0.0000
Off-Road	6.9116	81.4279	55.2637	0.0687		3.6480	3.6480		3.3562	3.3562		7,026.6056	7,026.6056	2.1529		7,071.8173
Total	**6.9116**	**81.4279**	**55.2637**	**0.0687**	**15.2321**	**3.6480**	**18.8801**	**6.9650**	**3.3562**	**10.3212**		**7,026.6056**	**7,026.6056**	**2.1529**		**7,071.8173**

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	lb/day										lb/day					
Hauling	0.1165	1.4756	1.4186	4.2700e-003	0.0997	0.0193	0.1190	0.0273	0.0178	0.0451		422.8349	422.8349	2.9700e-003		422.8974
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0604	0.0753	0.7041	1.7600e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		141.1467	141.1467	7.2500e-003		141.2989
Total	**0.1770**	**1.5509**	**2.1227**	**6.0300e-003**	**0.2476**	**0.0204**	**0.2679**	**0.0665**	**0.0188**	**0.0853**		**563.9816**	**563.9816**	**0.0102**		**564.1963**

3.4 Grading - 2017

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	lb/day										lb/day					
Fugitive Dust					6.8544	0.0000	6.8544	3.1342	0.0000	3.1342			0.0000			0.0000
Off-Road	6.9116	81.4279	55.2637	0.0687		3.6480	3.6480		3.3562	3.3562	0.0000	7,026.6056	7,026.6056	2.1529		7,071.8173
Total	**6.9116**	**81.4279**	**55.2637**	**0.0687**	**6.8544**	**3.6480**	**10.5025**	**3.1342**	**3.3562**	**6.4904**	**0.0000**	**7,026.6056**	**7,026.6056**	**2.1529**		**7,071.8173**

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	lb/day										lb/day					
Hauling	0.1165	1.4756	1.4186	4.2700e-003	0.0997	0.0193	0.1190	0.0273	0.0178	0.0451		422.8349	422.8349	2.9700e-003		422.8974
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0604	0.0753	0.7041	1.7600e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		141.1467	141.1467	7.2500e-003		141.2989
Total	**0.1770**	**1.5509**	**2.1227**	**6.0300e-003**	**0.2476**	**0.0204**	**0.2679**	**0.0665**	**0.0188**	**0.0853**		**563.9816**	**563.9816**	**0.0102**		**564.1963**

3.5 North Site Paving - 2017

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	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.8664					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7737**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**		**2,281.0588**	**2,281.0588**	**0.6989**		**2,295.7360**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491
Total	**0.0504**	**0.0628**	**0.5868**	**1.4700e-003**	**0.1232**	**9.0000e-004**	**0.1241**	**0.0327**	**8.3000e-004**	**0.0335**		**117.6222**	**117.6222**	**6.0400e-003**		**117.7491**

3.5 North Site Paving - 2017

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	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.8664					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7737**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**	**0.0000**	**2,281.0588**	**2,281.0588**	**0.6989**		**2,295.7360**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491
Total	**0.0504**	**0.0628**	**0.5868**	**1.4700e-003**	**0.1232**	**9.0000e-004**	**0.1241**	**0.0327**	**8.3000e-004**	**0.0335**		**117.6222**	**117.6222**	**6.0400e-003**		**117.7491**

3.6 North Site Building Construction - 2017

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	lb/day										lb/day					
Off-Road	1.9894	16.3571	12.9517	0.0190		1.2335	1.2335		1.1773	1.1773		1,867.7718	1,867.7718	0.3565		1,875.2574
Total	**1.9894**	**16.3571**	**12.9517**	**0.0190**		**1.2335**	**1.2335**		**1.1773**	**1.1773**		**1,867.7718**	**1,867.7718**	**0.3565**		**1,875.2574**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5293	4.1644	6.8064	0.0113	0.3186	0.0603	0.3789	0.0909	0.0555	0.1464		1,117.2186	1,117.2186	8.5900e-003		1,117.3990
Worker	0.5808	0.7237	6.7673	0.0169	1.4212	0.0103	1.4315	0.3770	9.5300e-003	0.3865		1,356.5763	1,356.5763	0.0697		1,358.0390
Total	**1.1101**	**4.8880**	**13.5737**	**0.0282**	**1.7398**	**0.0707**	**1.8104**	**0.4679**	**0.0650**	**0.5329**		**2,473.7949**	**2,473.7949**	**0.0782**		**2,475.4380**

3.6 North Site Building Construction - 2017

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	lb/day										lb/day					
Off-Road	1.9894	16.3571	12.9517	0.0190		1.2335	1.2335		1.1773	1.1773	0.0000	1,867.7718	1,867.7718	0.3565		1,875.2574
Total	**1.9894**	**16.3571**	**12.9517**	**0.0190**		**1.2335**	**1.2335**		**1.1773**	**1.1773**	**0.0000**	**1,867.7718**	**1,867.7718**	**0.3565**		**1,875.2574**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5293	4.1644	6.8064	0.0113	0.3186	0.0603	0.3789	0.0909	0.0555	0.1464		1,117.2186	1,117.2186	8.5900e-003		1,117.3990
Worker	0.5808	0.7237	6.7673	0.0169	1.4212	0.0103	1.4315	0.3770	9.5300e-003	0.3865		1,356.5763	1,356.5763	0.0697		1,358.0390
Total	**1.1101**	**4.8880**	**13.5737**	**0.0282**	**1.7398**	**0.0707**	**1.8104**	**0.4679**	**0.0650**	**0.5329**		**2,473.7949**	**2,473.7949**	**0.0782**		**2,475.4380**

3.6 North Site Building Construction - 2018

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	lb/day										lb/day					
Off-Road	1.7255	14.5387	12.7312	0.0190		1.0401	1.0401		0.9939	0.9939		1,853.2324	1,853.2324	0.3468		1,860.5143
Total	**1.7255**	**14.5387**	**12.7312**	**0.0190**		**1.0401**	**1.0401**		**0.9939**	**0.9939**		**1,853.2324**	**1,853.2324**	**0.3468**		**1,860.5143**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4962	3.7598	6.5166	0.0113	0.3186	0.0560	0.3746	0.0909	0.0515	0.1424		1,098.0135	1,098.0135	8.4300e-003		1,098.1906
Worker	0.5278	0.6604	6.1116	0.0169	1.4212	0.0101	1.4313	0.3770	9.3800e-003	0.3863		1,305.6239	1,305.6239	0.0648		1,306.9844
Total	**1.0240**	**4.4202**	**12.6282**	**0.0282**	**1.7397**	**0.0661**	**1.8059**	**0.4678**	**0.0609**	**0.5287**		**2,403.6374**	**2,403.6374**	**0.0732**		**2,405.1750**

3.6 North Site Building Construction - 2018

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	lb/day										lb/day					
Off-Road	1.7255	14.5387	12.7312	0.0190		1.0401	1.0401		0.9939	0.9939	0.0000	1,853.2324	1,853.2324	0.3468		1,860.5143
Total	**1.7255**	**14.5387**	**12.7312**	**0.0190**		**1.0401**	**1.0401**		**0.9939**	**0.9939**	**0.0000**	**1,853.2324**	**1,853.2324**	**0.3468**		**1,860.5143**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4962	3.7598	6.5166	0.0113	0.3186	0.0560	0.3746	0.0909	0.0515	0.1424		1,098.0135	1,098.0135	8.4300e-003		1,098.1906
Worker	0.5278	0.6604	6.1116	0.0169	1.4212	0.0101	1.4313	0.3770	9.3800e-003	0.3863		1,305.6239	1,305.6239	0.0648		1,306.9844
Total	**1.0240**	**4.4202**	**12.6282**	**0.0282**	**1.7397**	**0.0661**	**1.8059**	**0.4678**	**0.0609**	**0.5287**		**2,403.6374**	**2,403.6374**	**0.0732**		**2,405.1750**

3.7 North Site Architectural Coating - 2017

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	lb/day										lb/day					
Archit. Coating	1.9419					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**2.2742**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1175	0.1464	1.3691	3.4200e-003	0.2875	2.0900e-003	0.2896	0.0763	1.9300e-003	0.0782		274.4519	274.4519	0.0141		274.7478
Total	**0.1175**	**0.1464**	**1.3691**	**3.4200e-003**	**0.2875**	**2.0900e-003**	**0.2896**	**0.0763**	**1.9300e-003**	**0.0782**		**274.4519**	**274.4519**	**0.0141**		**274.7478**

3.7 North Site Architectural Coating - 2017

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	lb/day										lb/day					
Archit. Coating	1.9419					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**2.2742**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1175	0.1464	1.3691	3.4200e-003	0.2875	2.0900e-003	0.2896	0.0763	1.9300e-003	0.0782		274.4519	274.4519	0.0141		274.7478
Total	**0.1175**	**0.1464**	**1.3691**	**3.4200e-003**	**0.2875**	**2.0900e-003**	**0.2896**	**0.0763**	**1.9300e-003**	**0.0782**		**274.4519**	**274.4519**	**0.0141**		**274.7478**

3.7 North Site Architectural Coating - 2018

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	lb/day										lb/day					
Archit. Coating	1.9419					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**2.2405**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1068	0.1336	1.2365	3.4200e-003	0.2875	2.0500e-003	0.2896	0.0763	1.9000e-003	0.0782		264.1436	264.1436	0.0131		264.4188
Total	**0.1068**	**0.1336**	**1.2365**	**3.4200e-003**	**0.2875**	**2.0500e-003**	**0.2896**	**0.0763**	**1.9000e-003**	**0.0782**		**264.1436**	**264.1436**	**0.0131**		**264.4188**

3.7 North Site Architectural Coating - 2018

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	lb/day										lb/day					
Archit. Coating	1.9419					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**2.2405**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1068	0.1336	1.2365	3.4200e-003	0.2875	2.0500e-003	0.2896	0.0763	1.9000e-003	0.0782		264.1436	264.1436	0.0131		264.4188
Total	**0.1068**	**0.1336**	**1.2365**	**3.4200e-003**	**0.2875**	**2.0500e-003**	**0.2896**	**0.0763**	**1.9000e-003**	**0.0782**		**264.1436**	**264.1436**	**0.0131**		**264.4188**

3.8 South Site Paving - 2018

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	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	1.2995					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.9109**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224
Total	**0.0458**	**0.0573**	**0.5299**	**1.4600e-003**	**0.1232**	**8.8000e-004**	**0.1241**	**0.0327**	**8.1000e-004**	**0.0335**		**113.2044**	**113.2044**	**5.6200e-003**		**113.3224**

3.8 South Site Paving - 2018

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	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	1.2995					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.9109**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224
Total	**0.0458**	**0.0573**	**0.5299**	**1.4600e-003**	**0.1232**	**8.8000e-004**	**0.1241**	**0.0327**	**8.1000e-004**	**0.0335**		**113.2044**	**113.2044**	**5.6200e-003**		**113.3224**

3.9 South Site Building Construction - 2018

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	lb/day										lb/day					
Off-Road	1.7255	14.5387	12.7312	0.0190		1.0401	1.0401		0.9939	0.9939		1,853.2324	1,853.2324	0.3468		1,860.5143
Total	**1.7255**	**14.5387**	**12.7312**	**0.0190**		**1.0401**	**1.0401**		**0.9939**	**0.9939**		**1,853.2324**	**1,853.2324**	**0.3468**		**1,860.5143**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4962	3.7598	6.5166	0.0113	0.3186	0.0560	0.3746	0.0909	0.0515	0.1424		1,098.0135	1,098.0135	8.4300e-003		1,098.1906
Worker	0.5278	0.6604	6.1116	0.0169	1.4212	0.0101	1.4313	0.3770	9.3800e-003	0.3863		1,305.6239	1,305.6239	0.0648		1,306.9844
Total	**1.0240**	**4.4202**	**12.6282**	**0.0282**	**1.7397**	**0.0661**	**1.8059**	**0.4678**	**0.0609**	**0.5287**		**2,403.6374**	**2,403.6374**	**0.0732**		**2,405.1750**

3.9 South Site Building Construction - 2018

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	lb/day										lb/day					
Off-Road	1.7255	14.5387	12.7312	0.0190		1.0401	1.0401		0.9939	0.9939	0.0000	1,853.2324	1,853.2324	0.3468		1,860.5143
Total	**1.7255**	**14.5387**	**12.7312**	**0.0190**		**1.0401**	**1.0401**		**0.9939**	**0.9939**	**0.0000**	**1,853.2324**	**1,853.2324**	**0.3468**		**1,860.5143**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4962	3.7598	6.5166	0.0113	0.3186	0.0560	0.3746	0.0909	0.0515	0.1424		1,098.0135	1,098.0135	8.4300e-003		1,098.1906
Worker	0.5278	0.6604	6.1116	0.0169	1.4212	0.0101	1.4313	0.3770	9.3800e-003	0.3863		1,305.6239	1,305.6239	0.0648		1,306.9844
Total	**1.0240**	**4.4202**	**12.6282**	**0.0282**	**1.7397**	**0.0661**	**1.8059**	**0.4678**	**0.0609**	**0.5287**		**2,403.6374**	**2,403.6374**	**0.0732**		**2,405.1750**

3.9 South Site Building Construction - 2019

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	lb/day										lb/day					
Off-Road	1.5266	13.1721	12.5963	0.0190		0.8919	0.8919		0.8524	0.8524		1,839.1377	1,839.1377	0.3372		1,846.2188
Total	**1.5266**	**13.1721**	**12.5963**	**0.0190**		**0.8919**	**0.8919**		**0.8524**	**0.8524**		**1,839.1377**	**1,839.1377**	**0.3372**		**1,846.2188**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4627	3.4211	6.2307	0.0113	0.3185	0.0521	0.3706	0.0909	0.0479	0.1388		1,079.0831	1,079.0831	8.2300e-003		1,079.2560
Worker	0.4898	0.6102	5.6152	0.0169	1.4212	0.0101	1.4312	0.3770	9.3300e-003	0.3863		1,258.3814	1,258.3814	0.0609		1,259.6611
Total	**0.9525**	**4.0313**	**11.8459**	**0.0282**	**1.7397**	**0.0621**	**1.8018**	**0.4678**	**0.0572**	**0.5250**		**2,337.4645**	**2,337.4645**	**0.0692**		**2,338.9171**

3.9 South Site Building Construction - 2019

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	lb/day										lb/day					
Off-Road	1.5266	13.1721	12.5963	0.0190		0.8919	0.8919		0.8524	0.8524	0.0000	1,839.1377	1,839.1377	0.3372		1,846.2188
Total	**1.5266**	**13.1721**	**12.5963**	**0.0190**		**0.8919**	**0.8919**		**0.8524**	**0.8524**	**0.0000**	**1,839.1377**	**1,839.1377**	**0.3372**		**1,846.2188**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4627	3.4211	6.2307	0.0113	0.3185	0.0521	0.3706	0.0909	0.0479	0.1388		1,079.0831	1,079.0831	8.2300e-003		1,079.2560
Worker	0.4898	0.6102	5.6152	0.0169	1.4212	0.0101	1.4312	0.3770	9.3300e-003	0.3863		1,258.3814	1,258.3814	0.0609		1,259.6611
Total	**0.9525**	**4.0313**	**11.8459**	**0.0282**	**1.7397**	**0.0621**	**1.8018**	**0.4678**	**0.0572**	**0.5250**		**2,337.4645**	**2,337.4645**	**0.0692**		**2,338.9171**

3.10 South Site Architectural Coatings - 2018

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	lb/day										lb/day					
Archit. Coating	0.7672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**1.0658**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1068	0.1336	1.2365	3.4200e-003	0.2875	2.0500e-003	0.2896	0.0763	1.9000e-003	0.0782		264.1436	264.1436	0.0131		264.4188
Total	**0.1068**	**0.1336**	**1.2365**	**3.4200e-003**	**0.2875**	**2.0500e-003**	**0.2896**	**0.0763**	**1.9000e-003**	**0.0782**		**264.1436**	**264.1436**	**0.0131**		**264.4188**

3.10 South Site Architectural Coatings - 2018

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	lb/day										lb/day					
Archit. Coating	0.7672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**1.0658**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1068	0.1336	1.2365	3.4200e-003	0.2875	2.0500e-003	0.2896	0.0763	1.9000e-003	0.0782		264.1436	264.1436	0.0131		264.4188
Total	**0.1068**	**0.1336**	**1.2365**	**3.4200e-003**	**0.2875**	**2.0500e-003**	**0.2896**	**0.0763**	**1.9000e-003**	**0.0782**		**264.1436**	**264.1436**	**0.0131**		**264.4188**

3.10 South Site Architectural Coatings - 2019

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	lb/day										lb/day					
Archit. Coating	0.7672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	**1.0336**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**281.9473**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0991	0.1235	1.1360	3.4200e-003	0.2875	2.0400e-003	0.2896	0.0763	1.8900e-003	0.0782		254.5858	254.5858	0.0123		254.8447
Total	**0.0991**	**0.1235**	**1.1360**	**3.4200e-003**	**0.2875**	**2.0400e-003**	**0.2896**	**0.0763**	**1.8900e-003**	**0.0782**		**254.5858**	**254.5858**	**0.0123**		**254.8447**

3.10 South Site Architectural Coatings - 2019

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	lb/day										lb/day					
Archit. Coating	0.7672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		281.9473
Total	**1.0336**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**281.9473**

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0991	0.1235	1.1360	3.4200e-003	0.2875	2.0400e-003	0.2896	0.0763	1.8900e-003	0.0782		254.5858	254.5858	0.0123		254.8447
Total	**0.0991**	**0.1235**	**1.1360**	**3.4200e-003**	**0.2875**	**2.0400e-003**	**0.2896**	**0.0763**	**1.8900e-003**	**0.0782**		**254.5858**	**254.5858**	**0.0123**		**254.8447**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

	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	lb/day										lb/day					
Mitigated	3.1991	7.1364	32.6017	0.0768	5.4533	0.0949	5.5482	1.4557	0.0874	1.5432		6,286.3907	6,286.3907	0.2554		6,291.7530
Unmitigated	3.2006	7.1455	32.6349	0.0769	5.4615	0.0950	5.5565	1.4579	0.0876	1.5455		6,295.6344	6,295.6344	0.2557		6,301.0040

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	904.00	904.00	904.00	2,581,194	2,577,295
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	904.00	904.00	904.00	2,581,194	2,577,295

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	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	lb/day										lb/day					
NaturalGas Mitigated	0.0370	0.3165	0.1347	2.0200e-003		0.0256	0.0256		0.0256	0.0256		404.0567	404.0567	7.7400e-003	7.4100e-003	406.5157
NaturalGas Unmitigated	0.0460	0.3935	0.1674	2.5100e-003		0.0318	0.0318		0.0318	0.0318		502.3009	502.3009	9.6300e-003	9.2100e-003	505.3579

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/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	4269.56	0.0460	0.3935	0.1674	2.5100e-003		0.0318	0.0318		0.0318	0.0318		502.3009	502.3009	9.6300e-003	9.2100e-003	505.3579
Total		**0.0460**	**0.3935**	**0.1674**	**2.5100e-003**		**0.0318**	**0.0318**		**0.0318**	**0.0318**		**502.3009**	**502.3009**	**9.6300e-003**	**9.2100e-003**	**505.3579**

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/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	3.43448	0.0370	0.3165	0.1347	2.0200e-003		0.0256	0.0256		0.0256	0.0256		404.0567	404.0567	7.7400e-003	7.4100e-003	406.5157
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0370**	**0.3165**	**0.1347**	**2.0200e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**		**404.0567**	**404.0567**	**7.7400e-003**	**7.4100e-003**	**406.5157**

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	lb/day										lb/day					
Mitigated	7.5731	0.1093	9.4282	5.0000e-004		0.0514	0.0514		0.0514	0.0514	0.0000	16.8701	16.8701	0.0169	0.0000	17.2243
Unmitigated	7.5731	0.1093	9.4282	5.0000e-004		0.0514	0.0514		0.0514	0.0514	0.0000	16.8701	16.8701	0.0169	0.0000	17.2243

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	lb/day										lb/day					
Architectural Coating	0.1937					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.0862					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2932	0.1093	9.4282	5.0000e-004		0.0514	0.0514		0.0514	0.0514		16.8701	16.8701	0.0169		17.2243
Total	**7.5731**	**0.1093**	**9.4282**	**5.0000e-004**		**0.0514**	**0.0514**		**0.0514**	**0.0514**	**0.0000**	**16.8701**	**16.8701**	**0.0169**	**0.0000**	**17.2243**

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	lb/day										lb/day					
Architectural Coating	0.1937					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.0862					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2932	0.1093	9.4282	5.0000e-004		0.0514	0.0514		0.0514	0.0514		16.8701	16.8701	0.0169		17.2243
Total	**7.5731**	**0.1093**	**9.4282**	**5.0000e-004**		**0.0514**	**0.0514**		**0.0514**	**0.0514**	**0.0000**	**16.8701**	**16.8701**	**0.0169**	**0.0000**	**17.2243**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Del Prado - North Site Operations

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	81.00	Dwelling Unit	5.06	81,000.00	232

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2018
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No Construction

Vehicle Trips - KOA 2015

Woodstoves - No Woodburning Devices

Area Coating - Low-VOC Coatings

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	250	50
tblAreaCoating	Area_EF_Residential_Interior	250	50
tblConstructionPhase	NumDays	20.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	44.55	0.00
tblFireplaces	NumberNoFireplace	8.10	81.00
tblFireplaces	NumberWood	28.35	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	7.16	8.00
tblVehicleTrips	SU_TR	6.07	8.00
tblVehicleTrips	WD_TR	6.59	8.00
tblWoodstoves	NumberCatalytic	4.05	0.00
tblWoodstoves	NumberNoncatalytic	4.05	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

	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	N20	CO2e
Percent Reduction	**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**

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	lb/day										lb/day					
Area	2.0797	0.0781	6.7299	3.5000e-004		0.0367	0.0367		0.0367	0.0367	0.0000	12.0327	12.0327	0.0119	0.0000	12.2832
Energy	0.0330	0.2820	0.1200	1.8000e-003		0.0228	0.0228		0.0228	0.0228		360.0564	360.0564	6.9000e-003	6.6000e-003	362.2477
Mobile	2.2943	5.1220	23.3931	0.0552	3.9149	0.0681	3.9830	1.0451	0.0628	1.1078		4,512.7999	4,512.7999	0.1833		4,516.6489
Total	**4.4070**	**5.4821**	**30.2430**	**0.0573**	**3.9149**	**0.1276**	**4.0425**	**1.0451**	**0.1223**	**1.1674**	**0.0000**	**4,884.8891**	**4,884.8891**	**0.2021**	**6.6000e-003**	**4,891.1797**

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	lb/day										lb/day					
Area	2.0797	0.0781	6.7299	3.5000e-004		0.0367	0.0367		0.0367	0.0367	0.0000	12.0327	12.0327	0.0119	0.0000	12.2832
Energy	0.0266	0.2269	0.0965	1.4500e-003		0.0183	0.0183		0.0183	0.0183		289.6336	289.6336	5.5500e-003	5.3100e-003	291.3962
Mobile	2.2931	5.1155	23.3694	0.0551	3.9090	0.0680	3.9770	1.0435	0.0627	1.1062		4,506.1739	4,506.1739	0.1830		4,510.0176
Total	**4.3994**	**5.4204**	**30.1958**	**0.0569**	**3.9090**	**0.1231**	**4.0321**	**1.0435**	**0.1177**	**1.1612**	**0.0000**	**4,807.8402**	**4,807.8402**	**0.2005**	**5.3100e-003**	**4,813.6970**

	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	N20	CO2e
Percent Reduction	0.17	1.13	0.16	0.75	0.15	3.57	0.26	0.15	3.72	0.52	0.00	1.58	1.58	0.79	19.55	1.58

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2015	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	3	8.00	162	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	2	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

	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	lb/day										lb/day					
Unmitigated	2.2943	5.1220	23.3931	0.0552	3.9149	0.0681	3.9830	1.0451	0.0628	1.1078		4,512.7999	4,512.7999	0.1833		4,516.6489
Mitigated	2.2931	5.1155	23.3694	0.0551	3.9090	0.0680	3.9770	1.0435	0.0627	1.1062		4,506.1739	4,506.1739	0.1830		4,510.0176

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	648.00	648.00	648.00	1,850,237	1,847,442
Total	648.00	648.00	648.00	1,850,237	1,847,442

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	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	lb/day										lb/day					
NaturalGas Mitigated	0.0266	0.2269	0.0965	1.4500e-003		0.0183	0.0183		0.0183	0.0183		289.6336	289.6336	5.5500e-003	5.3100e-003	291.3962
NaturalGas Unmitigated	0.0330	0.2820	0.1200	1.8000e-003		0.0228	0.0228		0.0228	0.0228		360.0564	360.0564	6.9000e-003	6.6000e-003	362.2477

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/yr	lb/day										lb/day					
Condo/Townhouse	3060.48	0.0330	0.2820	0.1200	1.8000e-003		0.0228	0.0228		0.0228	0.0228		360.0564	360.0564	6.9000e-003	6.6000e-003	362.2477
Total		**0.0330**	**0.2820**	**0.1200**	**1.8000e-003**		**0.0228**	**0.0228**		**0.0228**	**0.0228**		**360.0564**	**360.0564**	**6.9000e-003**	**6.6000e-003**	**362.2477**

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/yr	lb/day										lb/day					
Condo/Townhouse	2.46189	0.0266	0.2269	0.0965	1.4500e-003		0.0183	0.0183		0.0183	0.0183		289.6336	289.6336	5.5500e-003	5.3100e-003	291.3962
Total		**0.0266**	**0.2269**	**0.0965**	**1.4500e-003**		**0.0183**	**0.0183**		**0.0183**	**0.0183**		**289.6336**	**289.6336**	**5.5500e-003**	**5.3100e-003**	**291.3962**

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	lb/day										lb/day					
Unmitigated	2.0797	0.0781	6.7299	3.5000e-004		0.0367	0.0367		0.0367	0.0367	0.0000	12.0327	12.0327	0.0119	0.0000	12.2832
Mitigated	2.0797	0.0781	6.7299	3.5000e-004		0.0367	0.0367		0.0367	0.0367	0.0000	12.0327	12.0327	0.0119	0.0000	12.2832

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	lb/day										lb/day					
Architectural Coating	0.1389					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.7334					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2075	0.0781	6.7299	3.5000e-004		0.0367	0.0367		0.0367	0.0367		12.0327	12.0327	0.0119		12.2832
Total	**2.0797**	**0.0781**	**6.7299**	**3.5000e-004**		**0.0367**	**0.0367**		**0.0367**	**0.0367**	**0.0000**	**12.0327**	**12.0327**	**0.0119**	**0.0000**	**12.2832**

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	lb/day										lb/day					
Architectural Coating	0.1389					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.7334					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2075	0.0781	6.7299	3.5000e-004		0.0367	0.0367		0.0367	0.0367		12.0327	12.0327	0.0119		12.2832
Total	**2.0797**	**0.0781**	**6.7299**	**3.5000e-004**		**0.0367**	**0.0367**		**0.0367**	**0.0367**	**0.0000**	**12.0327**	**12.0327**	**0.0119**	**0.0000**	**12.2832**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix B

ARCHAEOLOGICAL AND PALEONTOLOGICAL LETTER REPORT

ARCHAEOLOGICAL AND PALEONTOLOGICAL LETTER REPORT FOR A NEGATIVE SURVEY OF THE DEL PRADO NORTH AND SOUTH PROJECT, APN 238-130-11, 26, 27, 35, & 36

ESCONDIDO, CALIFORNIA

PREPARED FOR:
Touchstone Communities
12700 Stowe Suite 130
Poway, California
92064

PREPARED BY:
Recuerdos Research
10321 Del Rio Road
Spring Valley, CA 91978

PRINCIPAL INVESTIGATOR
Richard L. Carrico

Cultural Resources Inventory of 4.86 Acres **Guidelines: CEQA**
USGS Quadrangle: Escondido
Unsectioned Portion Rincon del Diablo Land Grant of Township 12 South; Range 2 West

Key Words: Escondido, Brotherton Street, Vacant Parcel, Negative Survey

September 23, 2015

INTRODUCTION AND SUMMARY

This letter report provides the results of an archaeological, historical, and paleontological inventory and survey for a 4.86-acre parcel located in Escondido, California. The property is slated for development of multi-family residential units by Touchstone Communities, Inc. The records search, field survey, and preparation of this letter report were performed in accordance with the California Environmental Quality Act and guidelines of the City of Escondido, California. The survey and report preparation was conducted by Richard L. Carrico, a certified archaeologist and historian, of Recuerdos Research with assistant from the Save Sacred Sites Luiseno group and their field monitor Rueben Salvador.

Results of the study were negative; no significant or important archaeological, historical resources were recorded at the South Coast Information Center or as a result of the field survey. The proposed project will not impact or adversely affect any recorded or known cultural resources.

PROJECT LOCATION

The APN is APN 238-130-11, 26, 27, 35 & 36. As shown on the Escondido 7.5 USGS quadrangle, the parcel is situated within Township 12 South Range 2 West; in an unsectioned portion of a Mexican era land grant El Rincon del Diablo (Figure 1). The project is located in Escondido, California west of Centre City Parkway and bounded on the north by Brotherton Street. A paved road for access to a San Diego Gas and Electric facility separates Del Prado North and Del Prado South (Figures 2, 3 and 4).

ARCHIVAL RESEARCH/RECORDS SEARCH

A self-search records search was conducted at the South Coast information Center on September 14, 2015 by Richard L. Carrico (Attachment A: Records Search Request). Results of the search were negative; no archaeological or historical resources were previously recorded on or near the subject parcel (Attachment B: Verification of Records Search). It is known that several Luiseño and Kumeyaay Indian sites are located along Escondido Creek to north and the San Dieguito River to the south but past research has indicated that the immediate vicinity was rarely inhabited In general, the immediate area might have been used for hunting and the gathering of native grasses and seeds but otherwise, offered little to prehistoric people.

A review of historic maps and background data did not indicate that any historical roads or buildings existed within the parcel. Past land use did include the old Cask and Cleaver Restaurant that once stood on the site before it became a Woody's Barbeque and was subsequently abandoned and demolished.

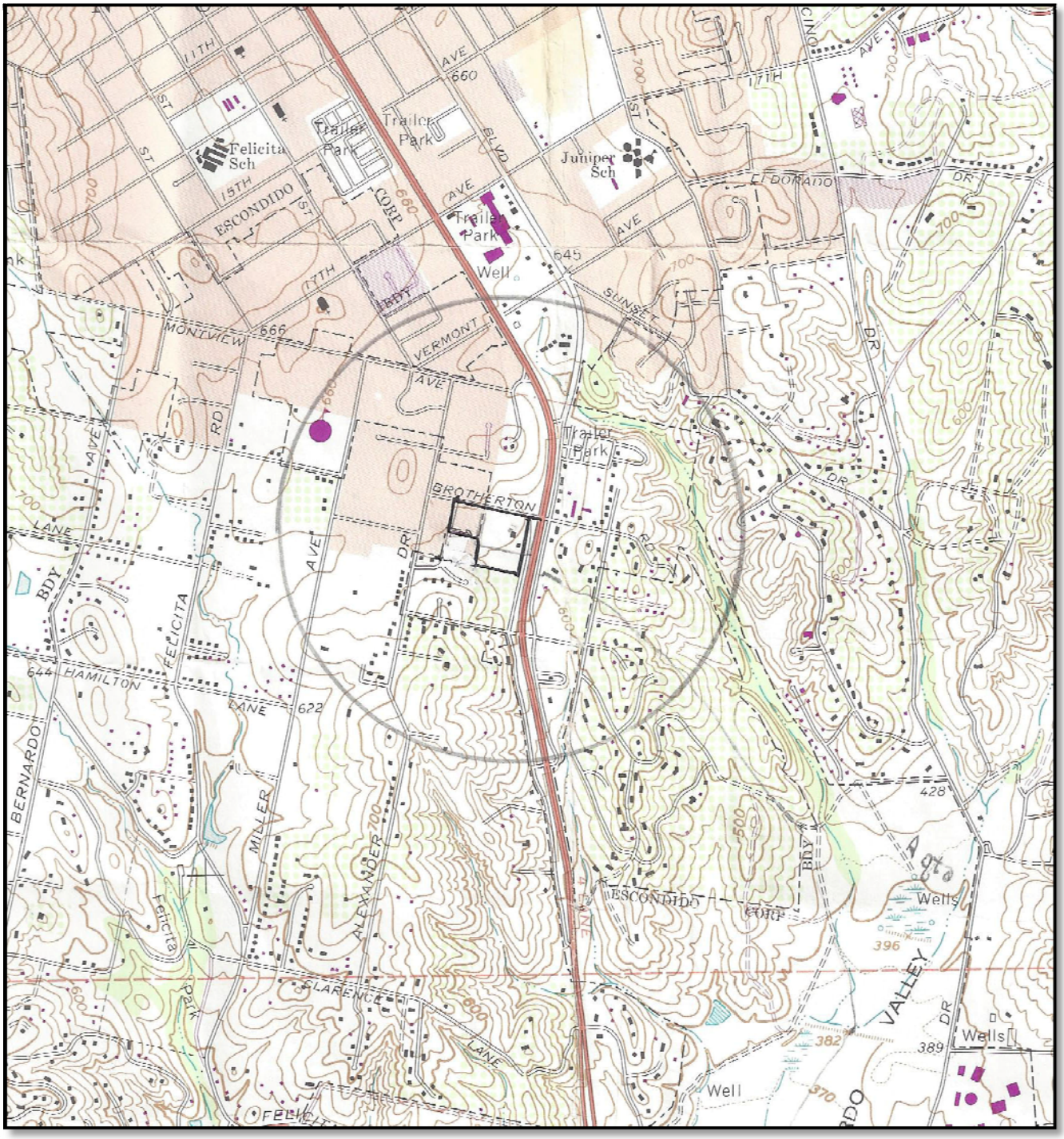


FIGURE 1:
PROJECT SITE AS DEPICTED ON THE
ESCONDIDO CALIFORNIA 7.5 MINUTE USGS QUADRANGLE

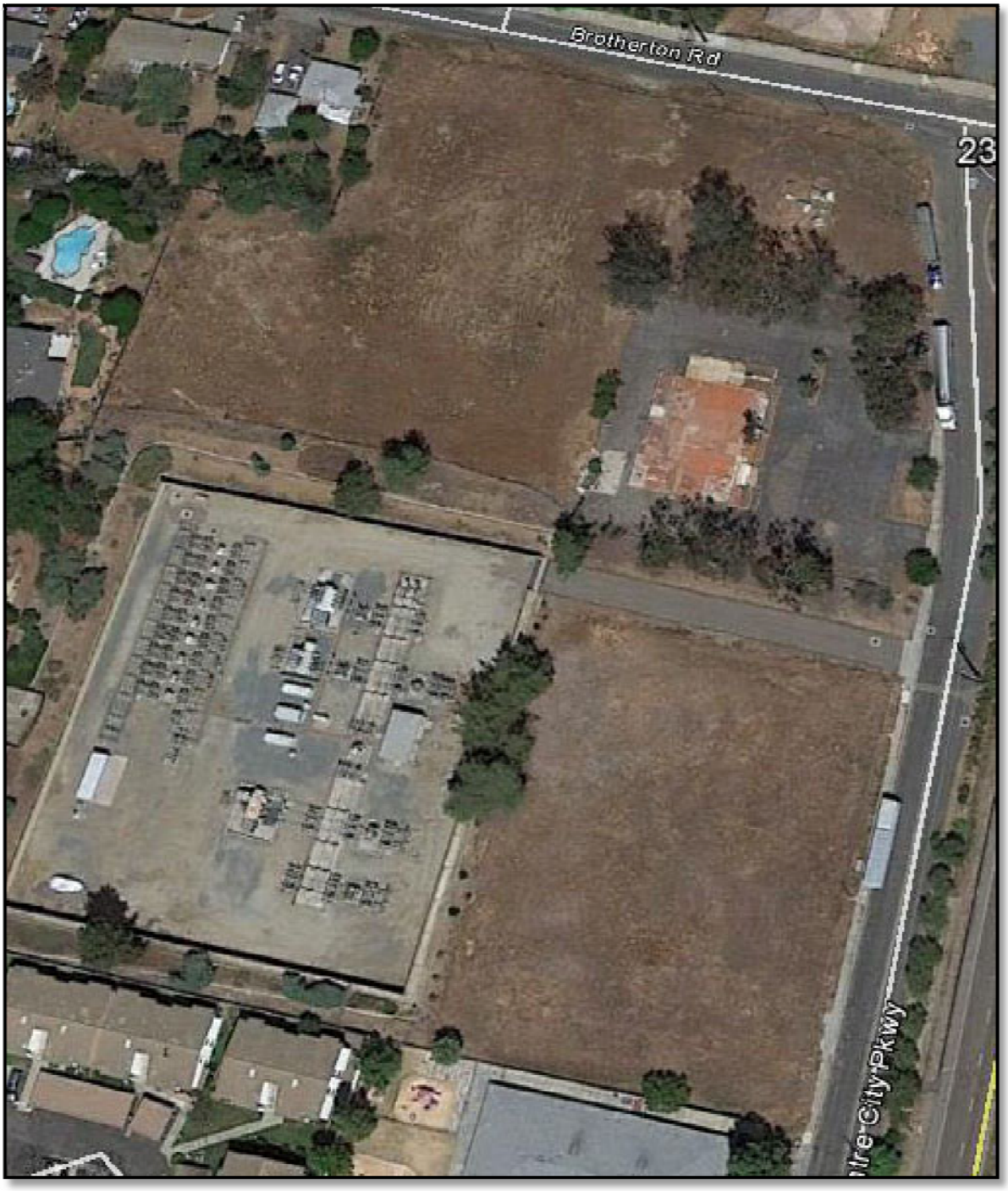


FIGURE 2
PROJECT SITE AS SHOWN ON GOOGLE EARTH

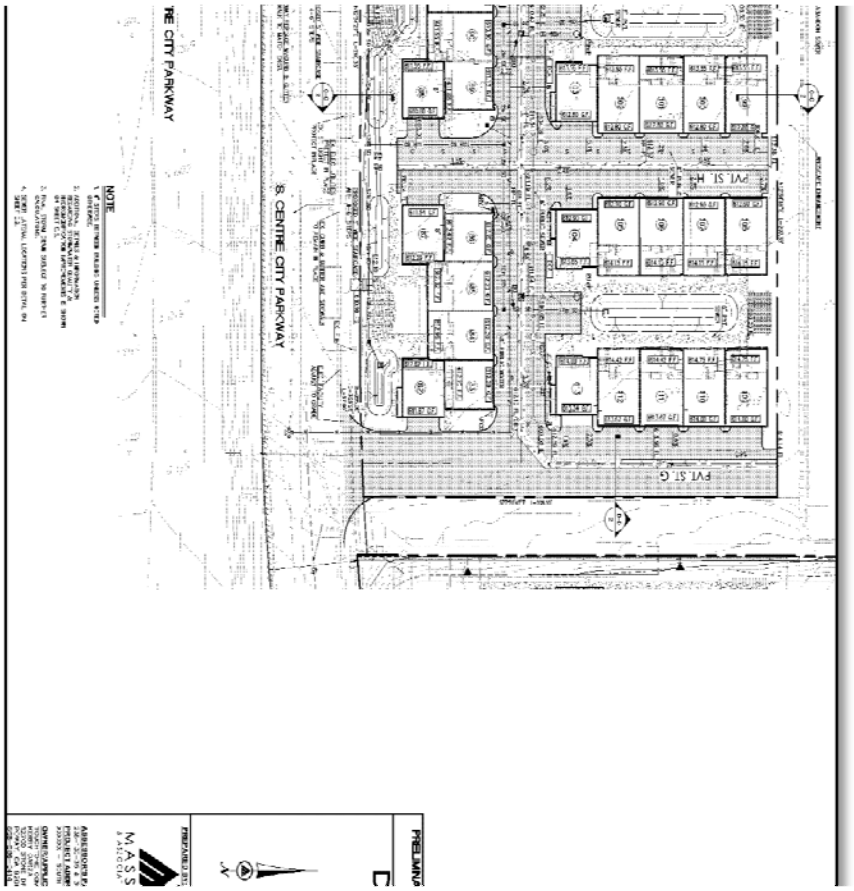


FIGURE 3

Site Plan for Prado South

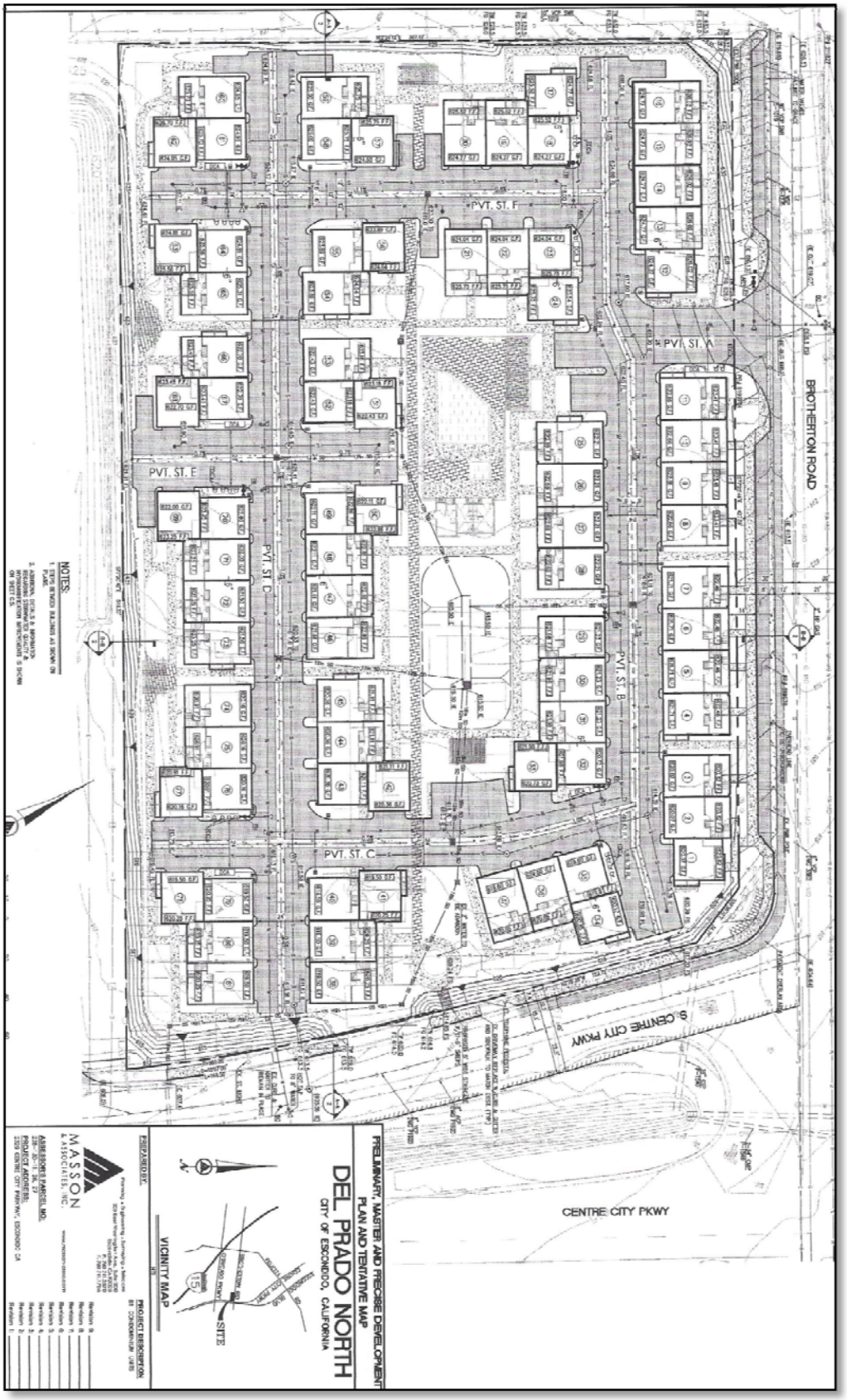


FIGURE 4

Site Plan for Prado North

SETTING

The subject parcel is a graded and nearly flat piece of land with an asphalt parking lot in the southeast portion of the Prado North parcel with the slab of the previous Woody's Barbeque/Cask and Cleaver restaurant also present. As shown in Figure 2, the previous commercial facility encompasses nearly one-fourth of the North Prado parcel. Elevation in the parcel varies from 611 feet above mean sea level (msl) on the southeast to approximately 627 feet above msl on the north. An existing residence was noted on northwest end of the North Prado parcel. The single family residence is typical of suburban homes in the area. It was built in 1953 and is a standard stucco dwelling with wood trim, a concrete porch and attached garage. The dwelling does not represent a unique or outstanding architectural style and is not associated with person important in the history of Escondido.

Based on soils map and the trench logs from recent soils testing, the soils within the parcel consist of a top soil or upper level comprised of older alluvium soils containing loose, silty sands. Beginning around 1.5 to 2.0 feet in depth the soils gradually shift to more clayey sands to a depth of approximately four feet at which time the soils become increasingly clayey before a level of weathered granitics are encountered at approximately 8 to 9 feet. This geological setting with a mixture of recent alluvial soils and older granitic base soils is generally not conducive to significant paleontological remains and the general area is not known to have produced significant or substantial paleontological discoveries. Vegetation on the parcels varies from intrusive weeds sporadically across the land with planted pines and eucalyptus trees present along some of the property borders..

FIELD SURVEY

The field survey was conducted on September 16, 2015 by Richard L. Carrico acting as the Principal Investigator accompanied by Rueben Salvador a local Luiseño serving as field surveyor and monitor under contract to Save Sacred Sites, representing the San Luis Band of Mission Indians (SLBMI). Ms. Cami Mojado was informed of the project and provided the monitoring services.

The survey was conducted by transecting the acreage in north to south transects spaced at 3 meter intervals. Ground visibility was excellent to moderate with only the presence of leaves and debris from pines trees on the western border impairing visibility in small sporadic areas. The paved asphalt parking lot and restaurant slab obscured a portion of the project in the North Prado parcel. As an estimate, more than 70% of the ground was visible and the entire parcel was intensively surveyed.

RESULTS OF THE SURVEY

Results of the field survey were negative; no historical or archaeological resources were noted within the parcel. The absence of historic, pre-contact, or paleontological resources within the subject parcel is consistent with previous surveys in the region and with the landform within the parcel.

MANAGEMENT RECOMMENDATIONS

The absence of cultural resources within the subject parcel leads to a finding of no adverse effect and of no impacts to significant cultural resources as result of approval of the proposed construction on the parcel. Therefore no mitigating measures or requirements for further study or monitoring are required. A copy of this report will be filed with the South Coastal Information Center (SCIC) at San Diego State University.

ATTACHMENT A:

REQUEST FOR SELF SEARCH AT SCIC

And

VERIFICATION OF SELF SEARCH AT SCIC

RECUERDOS RESEARCH
10321 DEL RIO ROAD
SPRING VALLEY, CALIFORNIA
91978
760-518-1471

Jaime Lennox
SCIC
San Diego State University

September 14, 2015

Re: Request to Conduct Self Search for Prado Escondido APN 238-130-11, 26, ,27 Project, Escondido, California. Recuerdos Project #15-032

Jaime per our e-mail communications I would like to come into SCIC on September 14, 2015, to conduct a self-search of the records and documents for an approximately 4.8-acre parcel on largely undeveloped land located in the unsectioned portion of Township 12 South, Range 2 West, within the community of Escondido, California. I am completing an archaeological and historical report for the Client for their submittal to the City of Escondido.

This work is being conducted in support of completion of an environmental planning document for a proposed development. I will be conducting a search within a one-half mile radius of the project site.

Thank you, for the opportunity to conduct this self-search.

Richard L. Carrico
Recuerdos Research

South Coastal Information Center
San Diego State University
5500 Campanile Drive
San Diego, CA 92182-5320
Office: (619) 594-5682
www.scic.org
scic@mail.sdsu.edu

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM
CLIENT IN-HOUSE RECORDS SEARCH

Company: Recuerdos Research

Company Representative: Richard Carrico

Date: 9/14/2015

Project Identification: Prado Escondido APN 238-130-11 #15-032

Search Radius: 1/2 mile

Historical Resources: SELF

Trinomial and Primary site maps have been reviewed. All sites within the project boundaries and the specified radius of the project area have been plotted. Copies of the site record forms have been included for all recorded sites.

Previous Survey Report Boundaries: SELF

Project boundary maps have been reviewed. National Archaeological Database (NADB) citations for reports within the project boundaries and within the specified radius of the project area have been included.

Historic Addresses: SELF

A map and database of historic properties (formerly Geofinder) has been included.

Historic Maps: SELF

The historic maps on file at the South Coastal Information Center have been reviewed, and copies have been included.

Copies: 12

Hours: 1

Appendix C

GEOTECHNICAL INVESTIGATION

CHRISTIAN WHEELER
ENGINEERING

GEOTECHNICAL INVESTIGATION

DEL PRADO
BROTHERTON ROAD AND S. CENTRE PARKWAY
ESCONDIDO, CALIFORNIA

PREPARED FOR

TOUCHSTONE COMMUNITIES
12700 STOWE DRIVE, SUITE #300
POWAY, CALIFORNIA 92064

PREPARED BY

CHRISTIAN WHEELER ENGINEERING
3980 HOME AVENUE
SAN DIEGO, CALIFORNIA 92105

CHRISTIAN WHEELER
ENGINEERING

August 31, 2015

Touchstone Communities
12700 Stowe Drive, Suite #300
Poway, California 92064
Attention: Brian Nesteroff

CWE 2150474.01

Subject: Geotechnical Investigation, Del Prado
Brotherton Road and S. Centre Parkway, Escondido, California

In accordance with your request and our proposal dated July 30, 2015, we have completed a preliminary geotechnical investigation for the subject project. We are presenting herein our findings and recommendations.

In general, we found the subject property suitable for the proposed construction, provided the recommendations provided herein are followed. Compressible surficial soils, including colluvial soils and previous fills, will need to be removed and replaced as properly compacted fill during the site grading. Specific remedial grading recommendations and geotechnical design criteria are presented in the attached report.

If you have any questions after reviewing this report, please do not hesitate to contact our office. This opportunity to be of professional service is sincerely appreciated.

Respectfully submitted,
CHRISTIAN WHEELER ENGINEERING

Shawn Caya, R.G.E. #2748

Troy S. Wilson, C.E.G. #2551

SCC:scc;tsw

Distribution: brian@touchstonecommunities.com

REGISTERED PROFESSIONAL ENGINEER
SHAWN C. CAYA
GE2748
EXP. 6/30/2016
GEOTECHNICAL
STATE OF CALIFORNIA

PROFESSIONAL GEOLOGIST
TROY S. WILSON
No. 2551
CERTIFIED ENGINEERING GEOLOGIST
Exp. 07-15
STATE OF CALIFORNIA

TABLE OF CONTENTS

PAGE

Introduction and Project Description 1
Investigation Scope 2
Findings 3
Site Description 3
General Geology and Subsurface Conditions 3
Geologic Setting and Soil Description 3
Artificial Fill 4
Residual Soil 4
Older Alluvium 4
Weathered Granitics 4
Groundwater 4
Tectonic Setting 5
Geologic Hazards 6
Landslide Potential and Slope Stability 6
Liquefaction 6
Flooding 7
Tsunamis 7
Seiches 7
Conclusions 7
Recommendations 7
Grading and Earthwork 7
General 7
Observation of Grading 8
Clearing and Grubbing 8
Test Trench Backfill 8
Processing of Removal Bottom 8
Compaction and Method of Filling 9
Fill Slope Construction 9
Imported Fill Material 9
Temporary Cut Slopes 9
Surface Drainage 10
Grading Plan Review 10
Conventional Shallow Foundations 10
General 10
Minimum Dimensions 10
Bearing Capacity 10
Footing Reinforcing 11
Lateral Load Resistance 11
Settlement Characteristics 11
Post-Tensioned Foundations 11
Foundation Plan Review 12
Foundation Excavation Observation 12
Soluble Sufates 12
On-Grade Slabs 12
General 12
Interior Slab 12
Under-Slab Vapor Retarders 13
Earth Retaining Walls 13

TABLE OF CONTENTS (Continued)

PAGE
Foundations ... 13
Active Pressures ... 13
Waterproofing and Subdrains ... 14
Backfill ... 14
Preliminary Pavement Sections ... 15
General ... 15
Asphalt Concrete ... 15
Concrete Pavements ... 16
Limitations ... 17
Review, Observation and Testing ... 17
Uniformity of Conditions ... 17
Change in Scope ... 17
Time Limitations ... 17
Professional Standard ... 18
Client's Responsibility ... 18
Field Explorations ... 18
Laboratory Testing ... 19

TABLES

Table I: Proximal Fault Zones ... 5
Table II: CBC 2013 Edition – Seismic Design Parameters ... 6
Table III: Post-Tension Design Criteria ... 11
Table IV: Asphalt Concrete and Paver Sections ... 15
Table V: Concrete Pavement Design Parameters ... 16
Table VI: Minimum Concrete Pavement Thickness ... 16

FIGURES

Figure 1 Site Vicinity Map, Follows Page 1

PLATES

Plate 1 Del Prado North Site Plan and Geotechnical Map
Plate 2 Del Prado South Site Plan and Geotechnical Map
Plate 3 Retaining Wall Subdrain Detail

APPENDICES

Appendix A Del Prado North Trench Logs
Appendix B Del Prado North Laboratory Test Results
Appendix C Del Prado South Trench Logs and Laboratory Test Results (CWE, 2011)
Appendix D References
Appendix E Recommended Grading Specifications – General Provisions

CHRISTIAN WHEELER
ENGINEERING

GEOTECHNICAL INVESTIGATION

DEL PRADO
BROTHERTON ROAD AND S. CENTRE PARKWAY
ESCONDIDO, CALIFORNIA

INTRODUCTION AND PROJECT DESCRIPTION

This report presents the results of a preliminary geotechnical investigation performed for two adjoining condominium complexes to be constructed southwest of the intersection of Brotherton Road and S. Centre Parkway, in the city of Escondido, California. The following Figure Number 1 presents a vicinity map showing the location of the project.

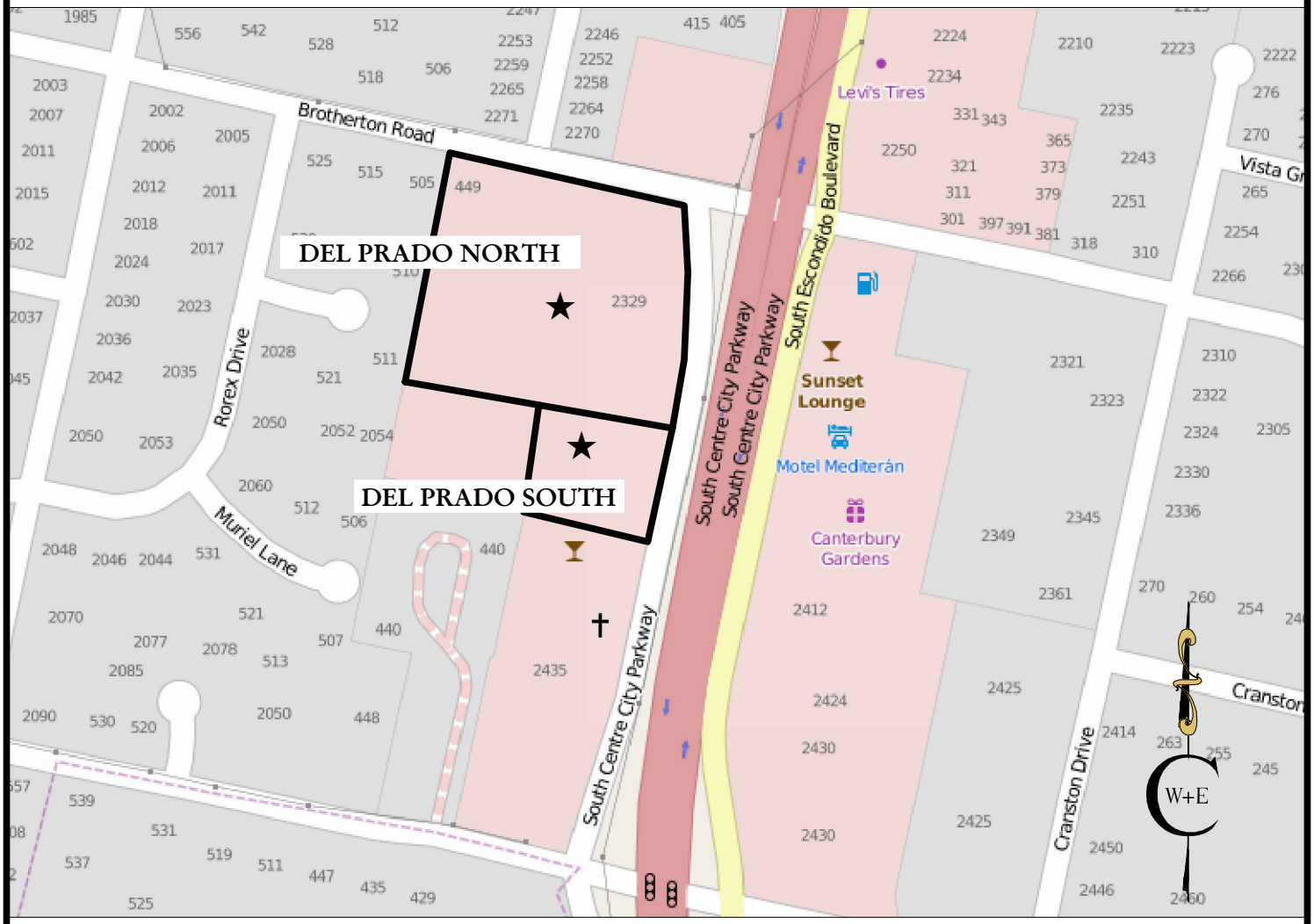
We understand that Del Prado North will include 21 condominium structures housing 81 units, a recreation building with an associated swimming pool, parking and driveways, and typical underground utilities. Grading will generally consist of cuts up to about 8 feet below the existing grade in the northwest portion and fills up to about 5 feet above the existing grade in the southeast portion. Cut and fill slopes up to about 8 feet are planned as well as site retaining walls up to about 6 feet in height. Del Prado South will include 6 condominium structures housing 32 units, parking and driveways, and typical underground utilities. Grading will consist of cuts and fills of less than a few feet from the existing grades. We expect that the buildings will be one- and/or two-stories of wood-frame construction with conventional shallow foundations or post-tension foundation/slabs.

To assist in the preparation of this report, our firm has been given a Preliminary, Master, and Precise Development Plan and Tentative Map for each site. These plans have been used as the base for our Site Plans and Geotechnical Maps, which are included herewith as Plates Number 1 and 2. We have also reviewed a previous geotechnical report prepared by our firm for a different project that was proposed on the Del Prado South site.

This report has been prepared for the exclusive use of Touchstone Communities and its consultants for specific application to the project described herein. Should the project be modified, the new plans should be submitted to Christian Wheeler Engineering for review to determine whether the findings and

SITE VICINITY

© OpenStreetMap contributors



DEL PRADO **BROTHERTON ROAD AND CENTRE CITY PARKWAY** **ESCONDIDO, CALIFORNIA**	
DATE: AUGUST 2015	JOB NO.: 2150474.01
BY: SRD	FIGURE NO.: 1

CHRISTIAN WHEELER
ENGINEERING

recommendations presented herein remain applicable and if any additional subsurface investigation, laboratory testing and/or recommendations are necessary. Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties, expressed or implied.

INVESTIGATION SCOPE

Our preliminary geotechnical investigation consisted of review of our previous data for the Del Prado South site, surface reconnaissance, subsurface exploration, obtaining representative soil samples, laboratory testing, analysis of the field and laboratory data and review of relevant geologic literature. Our scope of service did not include assessment of hazardous substance contamination, recommendations to prevent floor slab moisture intrusion or the formation of mold within the structure, or any other services not specifically described in the scope of services presented below. More specifically, our intent was to provide the services listed below.

- Excavate ten backhoe trenches on the north site to explore the existing soil conditions.
- Backfill the trenches with the removed soil. It should be noted that the soil was not compacted and will have to be removed and replaced as compacted fill during site grading.
- Evaluate, by laboratory tests and our past experience with similar soil types, the engineering properties of the various soil strata that may influence the proposed construction, including bearing capacities, expansive characteristics and settlement potential.
- Describe the general geology at the site, including possible geologic hazards that could have an effect on the proposed construction, and provide the seismic design parameters as required by the 2013 edition of the California Building Code.
- Address potential construction difficulties that may be encountered due to soil conditions, groundwater or geologic hazards, and provide geotechnical recommendations to deal with these difficulties.
- Provide site preparation and grading recommendations for the anticipated work.
- Provide foundation recommendations for the type of construction anticipated and develop soil engineering design criteria for the recommended foundation designs.
- Provide design parameters for unrestrained retaining walls.
- Provide preliminary pavement section recommendations.

- Prepare this report, which includes, in addition to our conclusions and recommendations, a plot plan showing the areal extent of the geological units and the locations of our exploratory borings, exploration logs, and a summary of the laboratory test results.

Although a test for the presence of soluble sulfates within the soils that may be in contact with reinforced concrete was performed as part of the scope of our services, it should be understood Christian Wheeler Engineering does not practice corrosion engineering. If such an analysis is considered necessary, we recommend that the client retain an engineering firm that specializes in this field to consult with them on this matter. The results of these tests should only be used as a guideline to determine if additional testing and analysis is necessary.

FINDINGS

SITE DESCRIPTION

The subject site consists of five contiguous parcels of land located southwest of the intersection of Brotherton Road and S. Centre Parkway (Frontage Road) in the city of Escondido, California. The project area is divided into a north and south portion, with the north consisting of Assessor's Parcel Numbers 238-130-11, 26, and 27 and the south consisting of Assessor's Parcel Numbers 238-130-35 and 36. The north site is bordered by Brotherton Road to the north, S. Centre Parkway to the east, developed residential properties to the west, and an existing SDG&E substation and the south portion of the project to the south. The south site is bordered by the adjacent project site to the north, the SDG&E substation to the west, a childcare facility to the south, and S. Centre Parkway to the east. The north site currently supports an existing residence in the northeast corner and a parking lot and concrete slab associated with a former restaurant in the southeast portion. The south site supports a paved access road to the SDG&E substation across the northern portion. The remainder of both sites is vacant with covered mainly by grass and shrubs. Several large trees and a stockpile of large boulders are present around the former restaurant site. Topographically, the area slopes gently towards the southeast with elevations ranging from about 607 feet to 635 feet (datum unknown).

GENERAL GEOLOGY AND SUBSURFACE CONDITIONS

GEOLOGIC SETTING AND SOIL DESCRIPTION: The subject site is located in the Foothills Physiographic Province of San Diego County. Based upon the results of our subsurface exploration, analysis of readily available, pertinent geologic literature, and review of the referenced documents, it was determined that the

project area is underlain by Cretaceous-age granitic bedrock, alluvium, residual soil, and artificial fill. These materials are described below.

ARTIFICIAL FILL (Qaf): Artificial fill was encountered at Del Prado North in the area supporting the previous restaurant and parking lot as well as in the northeastern portion of the site. As encountered in trenched T-5, T-9, and T-10, the fill soils extended to a depth of about 2 to 2½ feet below existing site grade and generally consisted of brown to grayish-brown, damp to moist, loose to medium dense, silty sand (SM). The fill materials were judged to have a very low expansion index (EI<20).

RESIDUAL SOIL: A layer of residual soil consisting of natural topsoil and subsoil was encountered in our exploratory trenches excavated within Del Prado South. The topsoil layer, which was encountered in all the trenches, extended to depths ranging from about 1½ feet to 3 feet below existing grade. The topsoil consists of brown, moist to wet, loose, very silty sand (SM) that is judged to have a low expansion index (EI<50). A layer of subsoil was encountered underlying the topsoil. The subsoil layer was also encountered in each of the trenches excavated at Del Prado South and is about 1½ feet thick. The subsoil consists of dark reddish-brown, moist to very moist, medium dense, clayey sand (SC) that was found to have a low expansion index (EI=45).

OLDER ALLUVIUM (Qoal): Older alluvial deposits were encountered at the surface or underlying the residual soil or artificial fill on both sites. This layer is typically 2 to 9 feet thick and consists of reddish-brown, light reddish-brown, and dark reddish-brown, moist, medium dense to dense, silty sand with clay (SM). The upper few feet of alluvial deposits were noted to be porous and loose to medium dense. The alluvial deposits were found to have a low expansion index (EI=25).

WEATHERED GRANITICS (Kgr): Weathered granitic bedrock underlies the surficial soils on both sites. Within our trenches, the weathered granitics were encountered at depths ranging from about 2 to 9 feet below the existing grades. This material consisted of reddish-brown and light gray, moist, medium dense to dense, silty sand (SM) and well-graded sand with silt (SW-SM). These deposits were judged to have a low expansion index (EI<50).

GROUNDWATER: No groundwater or wet soil was encountered in any of our subsurface explorations. It should be recognized that minor groundwater seepage problems might occur after development of a site even where none were present before development. These are usually minor phenomena and are often the result of an

alteration in drainage patterns and/or an increase in irrigation water. Based on the permeability characteristics of the soil and the anticipated usage and development, it is our opinion that any seepage problems which may occur will be minor in extent. It is further our opinion that these problems can be most effectively corrected on an individual basis if and when they occur.

TECTONIC SETTING: No active or potentially active faults are known to traverse the subject site. However, it should be noted that much of Southern California, including the San Diego County area, is characterized by a series of Quaternary-age fault zones that consist of several individual, en echelon faults that generally strike in a northerly to northwesterly direction. Some of these fault zones (and the individual faults within the zone) are classified as "active" according to the criteria of the California Division of Mines and Geology. Active fault zones are those that have shown conclusive evidence of faulting during the Holocene Epoch (the most recent 11,000 years). The Division of Mines and Geology used the term "potentially active" on Earthquake Fault Zone maps until 1988 to refer to all Quaternary-age (last 1.6 million years) faults for the purpose of evaluation for possible zonation in accordance with the Alquist-Priolo Earthquake Fault Zoning Act and identified all Quaternary-age faults as "potentially active" except for certain faults that were presumed to be inactive based on direct geologic evidence of inactivity during all of Holocene time or longer. Some faults considered to be "potentially active" would be considered to be "active" but lack specific criteria used by the State Geologist, such as *sufficiently active* and *well-defined*. Faults older than Quaternary-age are not specifically defined in Special Publication 42, Fault Rupture Hazard Zones in California, published by the California Division of Mines and Geology. However, it is generally accepted that faults showing no movement during the Quaternary period may be considered to be "inactive".

The active Rose Canyon Fault Zone is located approximately 15 miles west of the subject site. Other active fault zones in the region that could possibly affect the site include the Newport-Inglewood Fault Zone to the northwest, the Elsinore and Earthquake Valley Fault Zones to the northeast, the Coronado Fault Zone to the west, and the San Jacinto Fault Zone to the east.

TABLE I: PROXIMAL FAULT ZONES

Fault Zone	Distance
Rose Canyon	15 mi
Newport-Inglewood	15 mi
Elsinore (Julian)	18 mi
Earthquake Valley	29 mi
Coronado Bank	30 mi
San Jacinto (Anza)	40 mi

GEOLOGIC HAZARDS

SEISMIC HAZARD: A likely geologic hazard to affect the site is ground shaking as a result of movement along one of the major active fault zones mentioned in the "Tectonic Setting" section of this report. Per Chapter 16 of the 2013 California Building Code (CBC), the Risk-Targeted Maximum Considered Earthquake (MCE_R) ground acceleration is that which results in the largest maximum response to horizontal ground motions with adjustments for a targeted risk of structural collapse equal to one percent in 50 years. Figures 1613.3.1(1) and 1613.3.1(2) of the CBC present MCE_R accelerations for short (0.2 sec.) and long (1.0 sec.) periods, respectively, based on a soil Site Class B (CBC 1613.3.2) and a structural damping of five percent. For the subject site, correlation with the known properties of the underlying bedrock indicates that the upper 100 feet of geologic subgrade can be characterized as Site Class C. In this case, the mapped MCE_R accelerations are modified using the Site Coefficients presented in Tables 1613.3.3(1) and (2). The modified MCE spectral accelerations are then multiplied by two-thirds in order to obtain the design spectral accelerations. These seismic design parameters for the subject site (33.0936°, -117.0729°), based on Chapter 16 of the CBC, are presented in Table I below.

TABLE II: CBC 2013 EDITION – SEISMIC DESIGN PARAMETERS

CBC – Chapter 16 Section	Seismic Design Parameter	Recommended Value
Section 1613.3.2	Soil Site Class	C
Figure 1613.3.1 (1)	MCE_R Acceleration for Short Periods (0.2 sec), S_s	1.004 g
Figure 1613.3.1 (2)	MCE_R Acceleration for 1.0 Sec Periods (1.0 sec), S_1	0.388 g
Table 1613.3.3 (1)	Site Coefficient, F_a	1.000
Table 1613.3.3 (2)	Site Coefficient, F_v	1.412
Section 1613.3.3	S_{MS} = MCE_R Spectral Response at 0.2 sec. = $(S_s)(F_a)$	1.004 g
Section 1613.3.3	S_{M1} = MCE_R Spectral Response at 1.0 sec. = $(S_1)(F_v)$	0.548 g
Section 1613.3.4	S_{DS} = Design Spectral Response at 0.2 sec. = $2/3(S_{MS})$	0.670 g
Section 1613.3.4	S_{D1} = Design Spectral Response at 1.0 sec. = $2/3(S_{M1})$	0.365 g
Section 1803.2.12	PGA_M per Section 11.8.3 of ASCE 7	0.383 g

LANDSLIDE POTENTIAL AND SLOPE STABILITY: As part of this investigation we reviewed the publication, "Landslide Hazards in the Northern Part of the San Diego Metropolitan Area" by Tan, 1995. This reference is a comprehensive study that classifies San Diego County into areas of relative landslide susceptibility. According to this publication, the site is located in Relative Landslide Susceptibility Area 2. Area 2 is considered to be "marginally susceptible" to landsliding. Based on our findings, it is our professional opinion that the potential for slope failures within the site is very low.

LIQUEFACTION: The near-surface soils encountered at the site are not considered susceptible to liquefaction due to such factors as depth to the groundwater table, soil density and grain-size distribution.

FLOODING: The site is located outside the boundaries of both the 100-year and the 500-year floodplains according to the maps prepared by the Federal Emergency Management Agency.

TSUNAMIS: Tsunamis are great sea waves produced by submarine earthquakes or volcanic eruptions. Due to the site's elevation and location, the risk of the site being affected by a tsunami is considered low.

SEICHES: Seiches are periodic oscillations in large bodies of water such as lakes, harbors, bays or reservoirs. Due to the site's location, it should not be affected by seiches.

CONCLUSIONS

Based on our investigation, it is our opinion that the subject properties are suitable for the proposed development provided the geotechnical recommendations presented in this report are followed. The main geotechnical condition affecting the proposed development is the presence of potentially compressible, near-surface soils comprised of artificial fill, residual soil, and/or porous alluvium. This condition will require remedial grading in the form of overexcavation and recompaction of the soils within the upper 5 feet of the existing grade.

The site is located in an area that is relatively free of geologic hazards that will have a significant effect on the proposed development. The most likely geologic hazard that could affect the site is ground shaking due to seismic activity along one of the regional active faults. However, construction in accordance with the requirements of the most recent edition of the California Building Code and the local governmental agencies should provide a level of life-safety suitable for the type of development proposed.

RECOMMENDATIONS

GRADING AND EARTHWORK

GENERAL: All grading should conform to the guidelines presented in Appendix J of the California Building Code, the minimum requirements of the City of Escondido, and the recommended Grading Specifications and Special Provisions attached hereto, except where specifically superseded in the text of this report. Prior to grading, a representative of Christian Wheeler Engineering should be present at the pre-construction meeting to provide additional grading guidelines, if necessary, and to review the earthwork schedule.

OBSERVATION OF GRADING: Continuous observation by the Geotechnical Consultant is essential during the grading operation to confirm conditions anticipated by our investigation, to allow adjustments in design criteria to reflect actual field conditions exposed, and to determine that the grading proceeds in general accordance with the recommendations contained herein.

CLEARING AND GRUBBING: Site preparation should begin with demolition and removal of the existing improvements and the stripping and removal of vegetation, construction debris and other deleterious materials from the site. This should include all significant root material. The resulting materials should be disposed of off-site in a legal dumpsite.

SITE PREPARATION: Where it is not removed by the planned grading, the upper 5 feet of existing soil should be removed. We anticipate that such removals will expose competent older alluvium or weathered granitics at the base of the excavation. Deeper removals may be necessary in areas of the site not investigated or in areas where loose, dry, or otherwise unacceptable soils are exposed. The removals can be limited to 3 feet below the existing grade where granitic rock is exposed at the base of the removal. Laterally, the removals should extend to the property line or 5 feet outside areas to support fill and/or settlement-sensitive improvements, whichever is less. No removals are recommended beyond property lines. All excavated areas should be approved by the geotechnical engineer or his representative prior to replacing any of the excavated soils. The excavated material can be replaced as properly compacted fill provided that it is free of deleterious debris. Fill soils should be compacted in accordance with the recommendations presented in the "Compaction and Method of Filling" section of this report.

TEST TRENCH BACKFILL: Backfill associated with our subsurface explorations underlying settlement-sensitive improvements not removed as part of site preparation operations should be removed and replaced as compacted fill.

PROCESSING OF REMOVAL BOTTOM: Prior to placing any new fill soils or constructing any new improvements in areas that have been overexcavated as recommended in the "Site Preparation" section of this report, the exposed soils should be scarified to a depth of 12 inches, moisture conditioned, and compacted to at least 90 percent relative compaction. In areas to support fill slopes, keys should be cut into the competent supporting materials. The keys should be at least twelve feet wide and be sloped back at least two percent. The keys should extend at least one foot into the competent supporting materials. Where the existing ground has a slope of 5:1 (horizontal to vertical) or steeper, it should be benched into as the fill extends upward from the keyways. The benching should remove all loose surficial soils and should create level areas on which to place the fill material.

COMPACTION AND METHOD OF FILLING: All structural fill and backfill material placed at the site, except as noted below, should be compacted to a relative compaction of at least 90 percent of maximum dry density as determined by ASTM Laboratory Test D1557. Fills should be placed at or slightly above optimum moisture content, in lifts six to eight inches thick, with each lift compacted by mechanical means. Fills should consist of approved earth material, free of trash or debris, roots, vegetation, or other materials determined to be unsuitable by our soil technicians or project geologist. Fill material should be free of rocks or lumps of soil in excess of twelve inches in maximum dimension; however, this should be reduced to six inches within four feet of finish grade.

All utility trench backfill should be compacted to a minimum of 90 percent of its maximum dry density. The upper twelve inches of subgrade beneath paved areas should be compacted to 95 percent of the materials maximum dry density. This compaction should be obtained by the paving contractor just prior to placing the aggregate base material and should not be part of the mass grading requirements or operation.

FILL SLOPE CONSTRUCTION: Fill slopes may be constructed at an inclination of 2:1 or flatter (horizontal to vertical). Compaction of slopes should be performed by back-rolling with a sheepsfoot compactor at vertical intervals of four feet or less as the fill is being placed, and track-walking the face of the slope when the slope is completed. As an alternative, the fill slopes may be overfilled by at least three feet and then cut back to the compacted core at the design line and grade. Keys should be made at the toe of fill slopes in accordance with the recommendations presented above under "Processing of Removal Bottom."

IMPORTED FILL MATERIAL: Soils to be imported to the site should be evaluated and approved by the Geotechnical Consultant prior to being imported. At least five working days-notice of a potential import source should be given to the Geotechnical Consultant so that appropriate testing can be accomplished. The type of material considered most desirable for import is granular material containing some silt or clay binder, which has an Expansion Index of less than 50. Less than 25 percent of the material should be larger than the Standard #4 sieve, and less than 25 percent finer than the Standard # 200 sieve. Soils not meeting there criteria should not be used for structural fill or backfill.

TEMPORARY CUT SLOPES: The contractor is solely responsible for designing and constructing stable, temporary excavations and will need to shore, slope, or bench the sides of trench excavations as required to maintain the stability of the excavation sides. The contractor's "competent person", as defined in the OSHA Construction Standards for Excavations, 29 CFR, Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety process. We anticipate that the existing on-site soils will consist of Type C material. Our firm should be contacted to observe all temporary cut slopes during grading to ascertain that no

unforeseen adverse conditions exist. No surcharge loads such as foundation loads, or soil or equipment stockpiles, vehicles, etc. should be allowed within a distance from the top of temporary slopes equal to half the slope height.

SURFACE DRAINAGE: The ground around the proposed structures should be graded so that surface water flows rapidly away from the structures without ponding. In general, we recommend that the ground adjacent to structure slope away at a gradient of at least two percent. Densely vegetated areas where runoff can be impaired should have a minimum gradient of five percent within the first five feet from the structure. It is our opinion that the project site is not suitable for storm water infiltration/percolation BMPs. We recommend any planned pervious pavements, bio retention areas, or bio swales be lined in such a manner as to prevent the storm water from infiltrating into the underlying soils and should be connected via pipes to the storm drain system.

GRADING PLAN REVIEW: The final grading plans should be submitted to this office for review in order to ascertain that the recommendations of this report have been implemented, and that no additional recommendations are needed due to changes in the anticipated development plans.

CONVENTIONAL SHALLOW FOUNDATIONS

GENERAL: It is our opinion that the proposed buildings may be supported by conventional continuous and isolated spread footings. The following recommendations are considered the minimum based on the anticipated soil conditions anticipated after the recommendations contained in this report are implemented and are not intended to be in lieu of structural considerations. All foundations should be designed by a qualified structural engineer.

MINIMUM DIMENSIONS: New spread footings supporting the planned structures should be embedded at least 18 inches below the finish pad grade. Continuous and isolated footings should have minimum widths of 12 and 24 inches, respectively.

BEARING CAPACITY: Footings with the above minimum dimensions may be designed for an allowable soil bearing pressure of 2,000 pounds per square foot (psf). This value can be increased by 500 psf for each additional foot of depth and width up to a maximum capacity of 4,000 psf. The allowable bearing capacity may be increased by one-third for combinations of temporary loads, such as those due to wind or seismic loads.

FOOTING REINFORCING: Reinforcement requirements for foundations should be provided by a structural engineer. However, based on the anticipated soil conditions, we recommend that the minimum reinforcing for continuous footings consist of at least one No. 4 bar positioned near the bottom of the footing and at least one No. 4 bar positioned near the top of the footing.

LATERAL LOAD RESISTANCE: Lateral loads against foundations may be resisted by friction between the bottom of the footing and the supporting soil, and by the passive pressure against the footing. The coefficient of friction between concrete and soil may be considered to be 0.35. The passive resistance may be considered to be equal to an equivalent fluid weight of 350 pounds per cubic foot. This assumes the footings are poured tight against undisturbed soil. If a combination of the passive pressure and friction is used, the friction value should be reduced by one-third.

SETTLEMENT CHARACTERISTICS: Provided the recommendations presented in this report are followed, the anticipated total and differential foundation settlement is expected to be less than about 1 inch and 1 inch over 40 feet, respectively. It should be recognized that minor cracks normally occur in concrete slabs and foundations due to shrinkage during curing or redistribution of stresses, therefore some cracks should be anticipated. Such cracks are not necessarily an indication of excessive vertical movements.

EXPANSIVE CHARACTERISTICS: The anticipated foundation soils are expected to have a low expansion potential (EI<50). The recommendations presented in this report reflect this condition.

POST-TENSIONED FOUNDATIONS

As an alternative to conventional shallow foundations, post-tensioned foundations could be used to support the proposed buildings. Post-tensioned foundations should be designed in accordance with the design procedures of the Post-Tension Institute, using the design criteria presented below in Table III and the applicable information from the "Conventional Shallow Foundations" section above.

TABLE III: POST-TENSION DESIGN CRITERIA

Post-Tensioning Institute (PTI) – 3rd Edition	**Design Value**
Edge Moisture Variation, e_m	
Center Lift (ft)	9.0
Edge Lift (ft)	5.4
Differential Soil Movement, y_m	
Center Lift (in)	0.37
Edge Lift (in)	0.85

FOUNDATION PLAN REVIEW

The final foundation plan and accompanying details and notes should be submitted to this office for review. The intent of our review will be to verify that the plans used for construction reflect the minimum dimensioning and reinforcing criteria presented in this section and that no additional criteria are required due to changes in the foundation type or layout. It is not our intent to review structural plans, notes, details, or calculations to verify that the design engineer has correctly applied the geotechnical design values. It is the responsibility of the design engineer to properly design/specify the foundations and other structural elements based on the requirements of the structure and considering the information presented in this report.

FOUNDATION EXCAVATION OBSERVATION

All foundation excavations should be observed by the Geotechnical Consultant prior to placing reinforcing steel or formwork in order to determine if the foundation recommendations presented herein are followed. All footing excavations should be excavated neat, level, and square. All loose or unsuitable material should be removed prior to the placement of concrete.

SOLUBLE SUFATES

The water soluble sulfate content was determined in accordance with California Test Method 417 for a representative soil sample from the site. The result of this test indicates that the representative soil sample had a soluble sulfate content of 0.003, which is considered negligible.

ON-GRADE SLABS

GENERAL: It is our understanding that the building floors will consist of concrete slabs-on-grade. The following recommendations are considered the minimum slab requirements based on the soil conditions and are not intended to be in lieu of structural considerations. Post-tensioned slabs should be specified by the design engineer.

INTERIOR SLAB: We recommend that the interior slab-on-grade floors be at least 4 inches thick and be reinforced with at least No. 3 bars spaced at 18 inches on center each way. The reinforcing bars should extend at least six inches into the foundations and should be supported by chairs and be positioned in the center of the slab. The owner and the project structural engineer should determine if the on-grade slabs need to be designed for special loading conditions. For such cases, a subgrade modulus of 100 pounds per cubic inch can be assumed

for the subgrade provided it is prepared as recommended in this report. The allowable bearing load for the slab is 1,500 pounds per square foot.

UNDER-SLAB VAPOR RETARDERS: Steps should be taken to minimize the transmission of moisture vapor from the subsoil through the interior slabs where it can potentially damage the interior floor coverings. We recommend that the owner/contractor follow national standards for the installation of vapor retarders below interior slabs as presented in currently published standards including ACI 302, "Guide to Concrete Floor and Slab Construction" and ASTM E1643, "Standard Practice for Installation of Water Vapor Retarder Used in Contact with Earth or Granular Fill Under Concrete Slabs". If sand is placed below the vapor retarding material, it should have a sand equivalent of at least 30 and contain less than 20% passing the Number 100 sieve and less than 10% passing the Number 200 sieve.

We recommend that the flooring installer perform standard moisture vapor emission tests prior to the installation of all moisture-sensitive floor coverings in accordance with ASTM F1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride".

EXTERIOR CONCRETE FLATWORK: Exterior concrete on-grade slabs should have a minimum thickness of four inches. Exterior slabs abutting perimeter foundations should be doweled into the footings. All slabs should be provided with weakened plane joints in accordance with the American Concrete Institute (ACI) guidelines. Alternative patterns consistent with ACI guidelines can also be used. A concrete mix with a 1-inch maximum aggregate size and a water/cement ratio of less than 0.6 is recommended for exterior slabs. Lower water content will decrease the potential for shrinkage cracks. Both coarse and fine aggregate should conform to the latest edition of the "Standard Specifications for Public Works Construction" ("Greenbook"). Special attention should be paid to the method of concrete curing to reduce the potential for excessive shrinkage and resultant random cracking. It should be recognized that minor cracks occur normally in concrete slabs due to shrinkage. Some shrinkage cracks should be expected and are not necessarily an indication of excessive movement or structural distress.

EARTH RETAINING WALLS

FOUNDATIONS: Foundations for retaining walls can be designed in accordance with the foundation recommendations previously presented.

ACTIVE PRESSURES: The active soil pressure for the design of unrestrained earth retaining structures with level backfill surface may be assumed to be equivalent to the pressure of a fluid weighing 30 pounds per cubic

foot. An additional 15 pounds per cubic foot can be added to the above values for 2:1 (H:V) sloping backfill. Thirty percent of any area surcharge placed adjacent to the retaining wall may be assumed to act as a uniform horizontal pressure against the wall. Where vehicles will be allowed within ten feet of the retaining wall, a uniform horizontal pressure of 100 pounds per square foot should be added to the upper 10 feet of the retaining wall to account for the effects of adjacent traffic. Special cases such as a combination of shored and sloping temporary slopes, or other surcharge loads not described above, may require an increase in the design values recommended above. These conditions should be evaluated by the project geotechnical engineer on a case-by-case basis. If any other loads are anticipated, the Geotechnical Consultant should be contacted for the necessary increase in soil pressure. All values are based on a drained backfill condition.

If it is necessary to consider seismic pressure, it may be assumed to be equivalent to the pressure of a fluid weighing 8 pounds per cubic foot, but the pressure distribution should be inverted so that the highest value is at the top of the wall. This corresponds to an approximate pseudo-static acceleration (Kh) of 0.10 g.

PASSIVE PRESSURE: The passive pressure for the anticipated foundation soils may be considered to be 350 pounds per square foot per foot of depth. The upper foot of embedment should be neglected when calculating passive pressures, unless the foundation abuts a hard surface such as a concrete slab. The passive pressure may be increased by one-third for seismic loading. The coefficient of friction for concrete to soil may be assumed to be 0.35 for the resistance to lateral movement. When combining frictional and passive resistance, the friction should be reduced by one-third.

WATERPROOFING AND SUBDRAINS: The project architect should provide (or coordinate) waterproofing details for the retaining walls. The design values presented above are based on a drained backfill condition and do not consider hydrostatic pressures. Unless hydrostatic pressures are incorporated into the design, the retaining wall designer should provide a subdrain detail. A typical retaining wall subdrain detail is presented as Plate No. 2 of this report. Additionally, outlets points for the retaining wall subdrains should be coordinated by the project civil engineer.

BACKFILL: All retaining wall backfill should be compacted to at least 90 percent relative compaction. It is anticipated that the on-site soils are suitable for use as backfill material provided the design parameters given herein are used in the wall design. Wall backfill material should be free of rocks or lumps of soil in excess of three inches in maximum dimension. Retaining walls should not be backfilled until the masonry/concrete has reached an adequate strength.

PRELIMINARY PAVEMENT SECTIONS

GENERAL: We expect that new pavement will be installed as part of the project. The following presents preliminary sections for asphalt concrete (AC) or Portland Cement Concrete (PCC) construction. The pavement sections provided in Table IV and Table VI should be considered preliminary and should be used for planning purposes only. Final pavement designs should be determined after R-value tests have been performed in the actual subgrade material in place after grading. Presuming the grading recommendations presented previously are followed, we estimate that the subgrade soils will have an R-Value of approximately 10. The Traffic Index and Traffic Categories shown below are assumed. The project client and/or civil engineer should determine whether these assumed values are appropriate for the traffic conditions.

ASPHALT CONCRETE: We expect that the drive aisles will primarily support passenger vehicles with heavily loaded vehicles such as garbage trucks and large moving vans on a daily basis. The parking stalls are expected to support primarily passenger vehicles and occasional moving vans. The asphalt concrete pavement section was calculated using the Caltrans design method using an assumed Traffic Index of 5.5 for drive aisles and 4.5 for parking stalls.

TABLE IV: ASPHALT CONCRETE AND PAVER SECTIONS

Pavement Type	Traffic Index	Pavement Thickness	Base Thickness	Base Material	Subgrade Compaction
Asphalt Concrete					
Drive Aisles	5.5	3.0 in.	11.0 in.	CAB or Class II	95% in upper 12"
Parking Stalls	4.5	3.0 in.	7.5 in.	CAB or Class II	95% in upper 12"

Prior to placing the base material beneath asphalt concrete pavements, the subgrade soil should be scarified to a depth of 12 inches and compacted to at least 95 percent of its maximum dry density at a moisture content one to three percent above optimum.

The base material could consist of Crushed Aggregate Base (CAB) or Class II Aggregate Base. The Crushed Aggregate Base should conform to the requirements set forth in Section 200-2.2 of the Standard Specifications for Public Works Construction. The Class II Aggregate Base should conform to requirements set forth in Section 26-1.02A of the Standard Specifications for California Department of Transportation. Asphalt concrete should be placed in accordance with 'Standard Specifications for Public Works Construction (Greenbook), Section 302-5. Asphalt concrete pavement should be compacted to at least 95% of Hveem density.

CONCRETE PAVEMENTS: Portland cement concrete (PCC) pavement thickness can be determined from Table VI. The PCC pavement section was determined in general accordance with the procedure recommended within the American Concrete Institute report ACI-330R-08 Guide for Design and Construction of Concrete Parking Lots using the parameters listed in Table V. We recommend that the referenced ACI-330R Guide be used to determine the appropriate requirements for control joint configuration, reinforcing, and dowelling of the construction joints. Portland Cement Concrete pavement placed in front of trash enclosures should be reinforced with at least No. 4 bars placed at 12 inches on center each way.

TABLE V: CONCRETE PAVEMENT DESIGN PARAMETERS

Design Parameter	Design Value
Modulus of Subgrade Reaction, k	50 pci
Modulus of Rupture for Concrete, M_R	500 psi
Traffic Category (Main Driveways)	A (ADTT = 10)

ADTT = Average Daily Truck Traffic. Trucks defined as vehicles with at least six wheels.

Based on the design parameters summarized in Table V, the PCC pavements should have the minimum thicknesses shown in Table V.

TABLE VI: MINIMUM CONCRETE PAVEMENT THICKNESS

Pavement Use	Thickness
Main Driveways/Aisles/Trash Enclosures	6.5 in
Parking Stalls	6.0 in

Prior to placing concrete pavement, the subgrade soils should be scarified to a depth of 12 inches and compacted to at least 95 percent of their maximum dry density at a moisture content one to three percent above optimum. Concrete pavement construction should comply with the requirements set forth in Sections 201-1.1.2 and 302-6 of the Standard Specifications for Public Works Construction (concrete Class 560-C-3250).

The outside edge of concrete slabs that will support wheel loads should have a thickened edge or integral curb. The thickened edge should be at least 2 inches thicker than the slab and should taper back to the recommended slab thickness 3 feet from the edge of the slab.

LIMITATIONS

REVIEW, OBSERVATION AND TESTING

The recommendations presented in this report are contingent upon our review of final plans and specifications. Such plans and specifications should be made available to the geotechnical engineer and engineering geologist so that they may review and verify their compliance with this report and with the California Building Code.

It is recommended that Christian Wheeler Engineering be retained to provide continuous soil engineering services during the earthwork operations. This is to verify compliance with the design concepts, specifications or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

UNIFORMITY OF CONDITIONS

The recommendations and opinions expressed in this report reflect our best estimate of the project requirements based on an evaluation of the subsurface soil conditions encountered at the subsurface exploration locations and on the assumption that the soil conditions do not deviate appreciably from those encountered. It should be recognized that the performance of the foundations and/or cut and fill slopes may be influenced by undisclosed or unforeseen variations in the soil conditions that may occur in the intermediate and unexplored areas. Any unusual conditions not covered in this report that may be encountered during site development should be brought to the attention of the geotechnical engineer so that he may make modifications if necessary.

CHANGE IN SCOPE

This office should be advised of any changes in the project scope or proposed site grading so that we may determine if the recommendations contained herein are appropriate. This should be verified in writing or modified by a written addendum.

TIME LIMITATIONS

The findings of this report are valid as of this date. Changes in the condition of a property can, however, occur with the passage of time, whether they be due to natural processes or the work of man on this or adjacent properties. In addition, changes in the Standards-of-Practice and/or Government Codes may occur. Due to such changes, the findings of this report may be invalidated wholly or in part by changes beyond our control.

Therefore, this report should not be relied upon after a period of two years without a review by us verifying the suitability of the conclusions and recommendations.

PROFESSIONAL STANDARD

In the performance of our professional services, we comply with that level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions and in the same locality. The client recognizes that subsurface conditions may vary from those encountered at the locations where our test pits, surveys, and explorations are made, and that our data, interpretations, and recommendations be based solely on the information obtained by us. We will be responsible for those data, interpretations, and recommendations, but shall not be responsible for the interpretations by others of the information developed. Our services consist of professional consultation and observation only, and no warranty of any kind whatsoever, express or implied, is made or intended in connection with the work performed or to be performed by us, or by our proposal for consulting or other services, or by our furnishing of oral or written reports or findings.

CLIENT'S RESPONSIBILITY

It is the client's responsibility, or its representatives, to ensure that the information and recommendations contained herein are brought to the attention of the structural engineer and architect for the project and incorporated into the project's plans and specifications. It is further their responsibility to take the necessary measures to insure that the contractor and his subcontractors carry out such recommendations during construction.

FIELD EXPLORATIONS

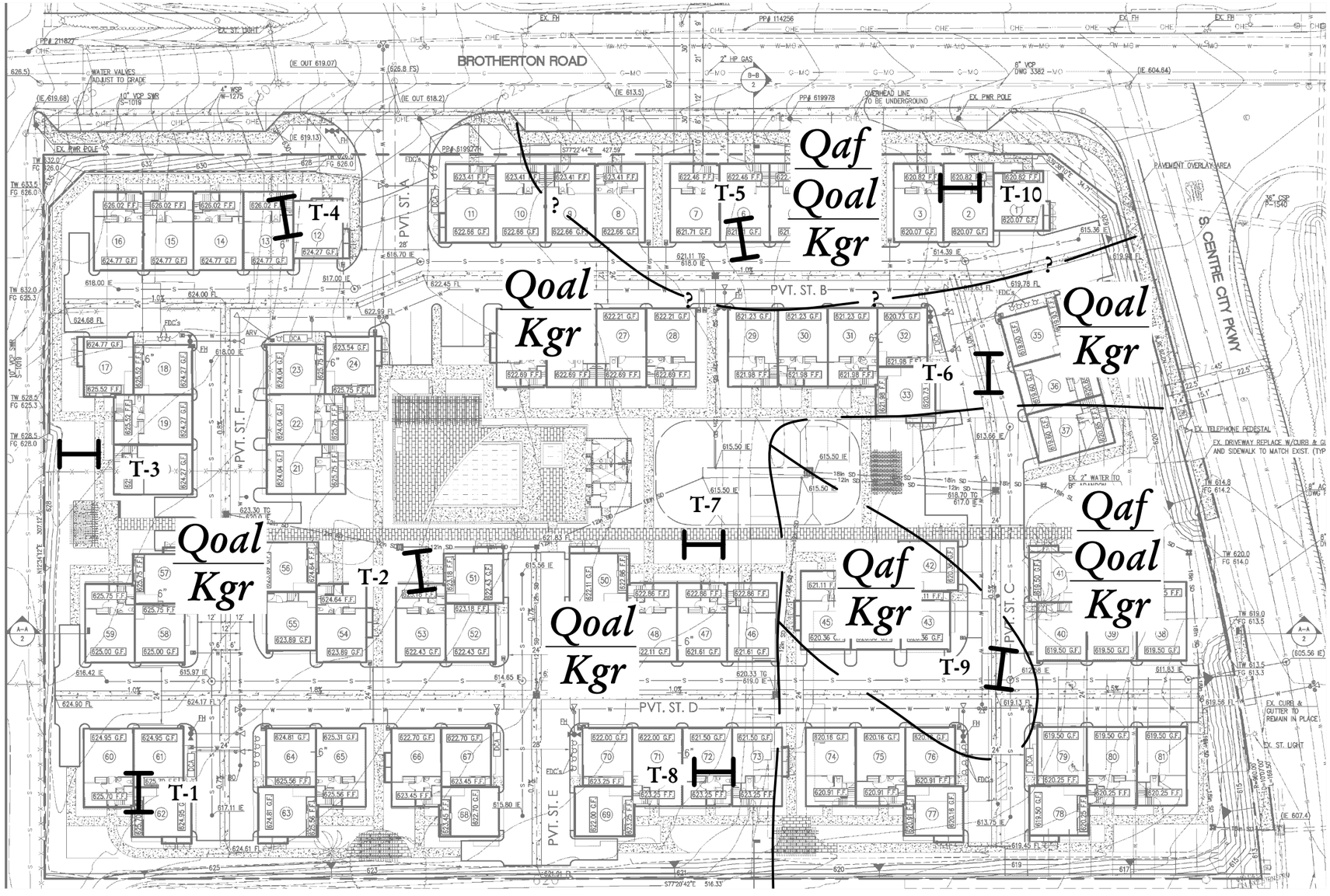
Eighteen subsurface explorations were made at the locations indicated on the site plans included herewith as Plates No. 1 and 2. These explorations consisted of eight test trenches excavated with a backhoe as part of a previous investigation at the Del Prado South site on March 3, 2011 and ten test trenches excavated with a backhoe at the Del Prado North site on August 5, 2015. The fieldwork was conducted by or under the observation of our engineering geology personnel.

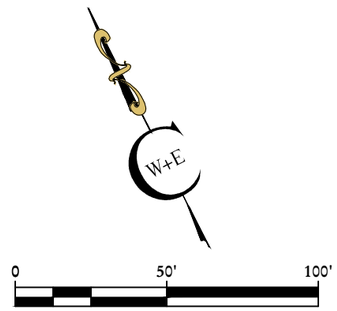
The trenches were carefully logged when made. The trench logs are presented in the attached Appendix A and Appendix C for Del Prado North and South, respectively. The soils are described in accordance with the Unified Soils Classification. In addition, a verbal textural description, the wet color, the apparent moisture and the density or consistency are provided. The density of granular soils is given as either very loose, loose, medium

dense, dense or very dense. The consistency of silts or clays is given as either very soft, soft, medium stiff, stiff, very stiff, or hard. Undisturbed chunk samples and bulk samples of disturbed soil were collected and transported to the laboratory for testing.

LABORATORY TESTING

Laboratory tests were performed in accordance with the generally accepted American Society for Testing and Materials (ASTM) test methods or suggested procedures. A brief description of the tests performed and the subsequent results are presented in Appendix B.





SCALE: 1" = 50'

CWE LEGEND

T-1	APPROXIMATE TEST TRENCH LOCATION
	APPROXIMATE GEOLOGIC CONTACT QUERIED WHERE INFERRED
Qaf / Qoal / Kgr	ARTIFICIAL FILL OVER OLDER ALLUVIUM OVER WEATHERED GRANITICS
Qoal / Kgr	OLDER ALLUVIUM OVER WEATHERED GRANITICS
Qaf / Kgr	ARTIFICIAL FILL OVER WEATHERED GRANITICS

PREPARED BY:

Planning ▲ Engineering ▲ Surveying ▲ Telecom
200 East Washington Ave., Suite 200
Escondido, CA 92025
P. 760.741.3570
F. 760.741.1786

MASSON & ASSOCIATES, INC.
www.massor-assoc.com

ASSESSOR'S PARCEL NO:
238–130–11, 26, 27

PROJECT ADDRESS:
BROTHERTON ROAD & SOUTH CCP FRONTAGE ROAD

OWNER/APPLICANT:
TOUCHTONE COMMUNITIES, INC
KERRY GARZA
12700 STONE DRIVE, SUITE 130
POWAY, CA 92064
858–586–0414

PROJECT DESCRIPTION
81 CONDOMINIUM UNITS

Revision 9: ____
Revision 8: ____
Revision 7: ____
Revision 6: ____
Revision 5: ____
Revision 4: ____
Revision 3: ____
Revision 2: ____
Revision 1: ____

Original Date: ____

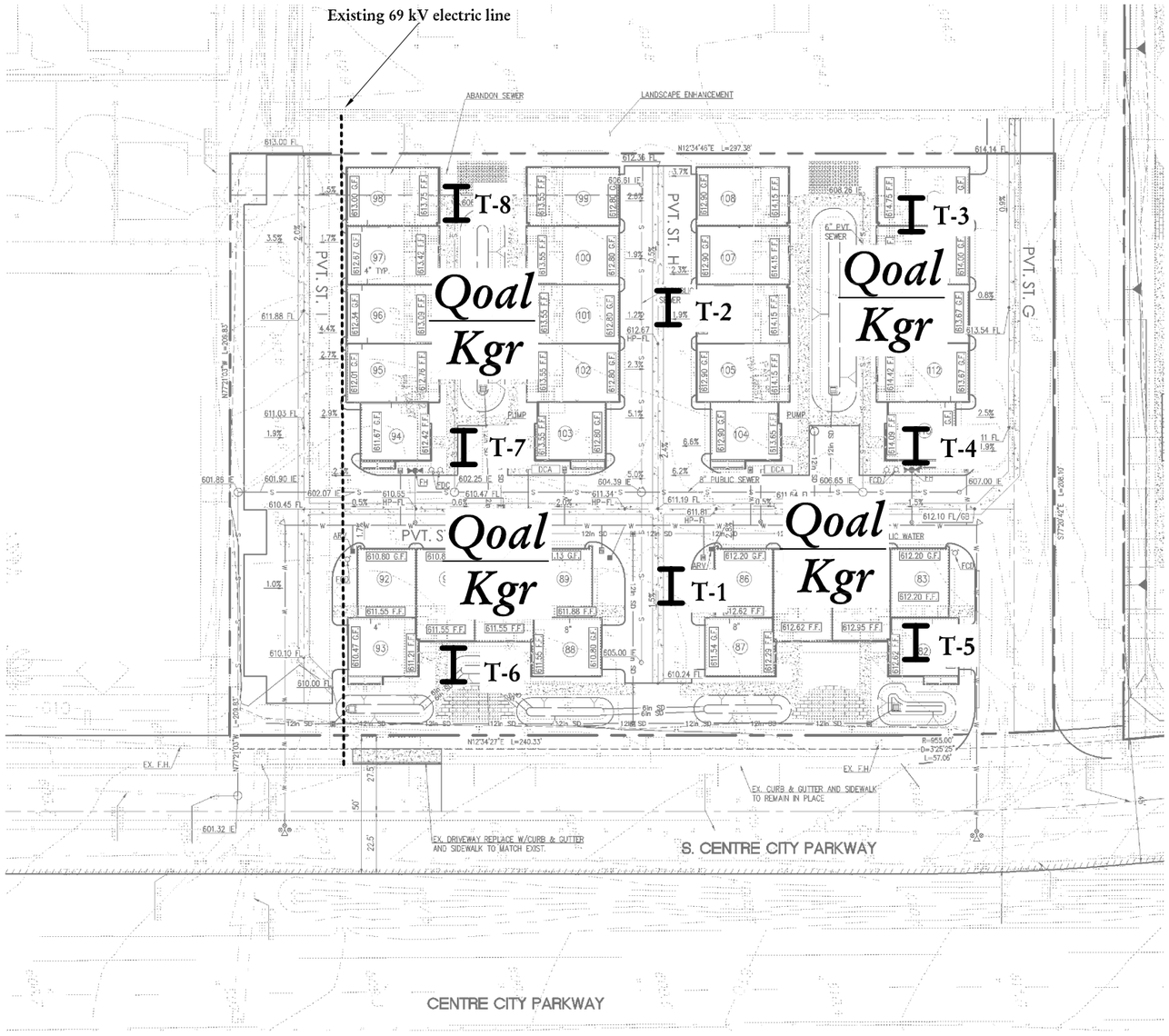
Sheet C-3 of 5

GRADING PLAN AND GEOTECHNICAL MAP

DEL PRADO NORTH
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	PLATE NO.:	1

CHRISTIAN WHEELER ENGINEERING



CWE LEGEND

T-8	APPROXIMATE TEST TRENCH LOCATION
Qoal / Kgr	OLD ALLUVIUM UNDERLAIN BY WEATHERED GRANITIC ROCK

W+E

0 50' 100'

SCALE: 1" = 50'

PREPARED BY:
Planning ▲ Engineering ▲ Surveying ▲ Telecom
200 East Washington Ave., Suite 200
Escondido, CA 92025
P. 760.741.3570
F. 760.741.1786
MASSON & ASSOCIATES, INC.
www.masson-assoc.com

PROJECT DESCRIPTION
32 CONDOMINIUM UNITS

ASSESSOR'S PARCEL NO:
238-130-35 & 36

PROJECT ADDRESS:
XXXXXX – SOUTH CGP FRONTAGE ROAD

OWNER/APPLICANT:
TOUCHTONE COMMUNITIES, INC
KERRY GARZA
12720 STONE DRIVE, SUITE 130
POWAY, CA 92064
858-586-0414

Revision 9:
Revision 8:
Revision 7:
Revision 6:
Revision 5:
Revision 4:
Revision 3:
Revision 2:
Revision 1:

Original Date:

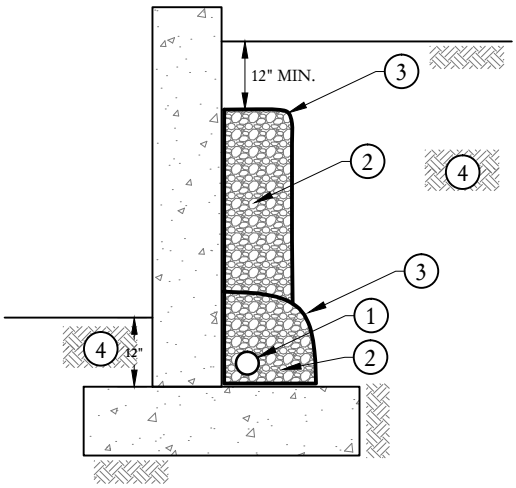
Sheet C-3 of 5

GRADING PLAN AND GEOTECHNICAL MAP

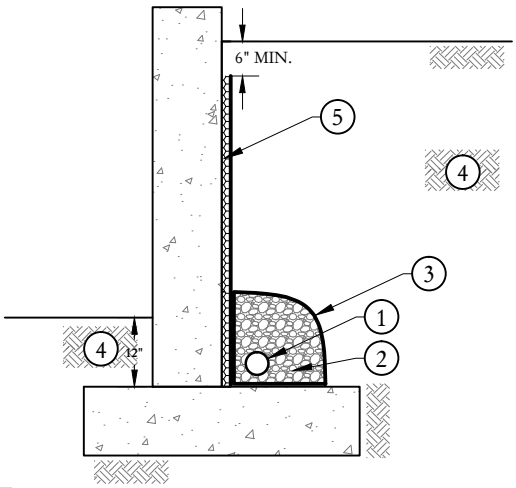
DEL PRADO SOUTH
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	PLATE NO.:	2

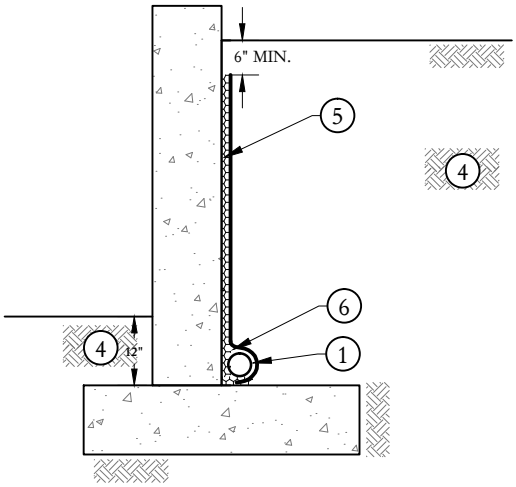
CHRISTIAN WHEELER ENGINEERING



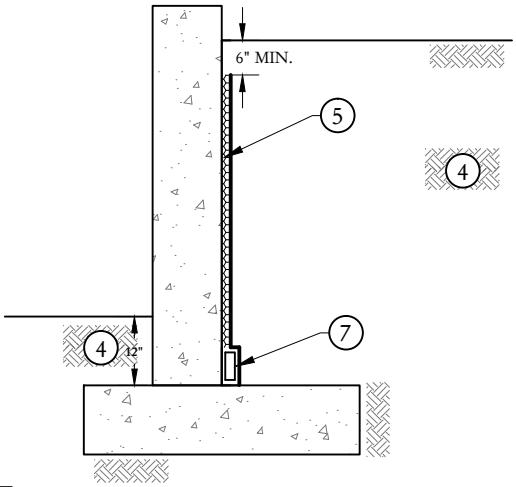
1 DETAIL



2 DETAIL



3 DETAIL



4 DETAIL

NOTES AND DETAILS

GENERAL NOTES:

1) THE NEED FOR WATERPROOFING SHOULD BE EVALUATED BY OTHERS.
2) WATERPROOFING TO BE DESIGNED BY OTHERS (CWE CAN PROVIDE A DESIGN IF REQUESTED).
3) EXTEND DRAIN TO SUITABLE DISCHARGE POINT PER CIVIL ENGINEER.
4) DO NOT CONNECT SURFACE DRAINS TO SUBDRAIN SYSTEM.

DETAILS:

1. 4-INCH PERFORATED PVC PIPE ON TOP OF FOOTING, HOLES POSITIONED DOWNWARD (SDR 35, SCHEDULE 40, OR EQUIVALENT).
2. ¾ INCH OPEN-GRADED CRUSHED AGGREGATE.
3. GEOFARBRIC WRAPPED COMPLETELY AROUND ROCK.
4. PROPERLY COMPACTED BACKFILL SOIL.
5. WALL DRAINAGE PANELS (MIRADRAIN OR EQUIVALENT) PLACED PER MANUFACTURER'S REC'S.
6. UNDERLAY SUBDRAIN WITH AND CUT FABRIC BACK FROM DRAINAGE PANELS AND WRAP FABRIC AROUND PIPE.
7. COLLECTION DRAIN (TOTAL DRAIN OR EQUIVALENT) LOCATED AT BASE OF WALL DRAINAGE PANEL PER MANUFACTURER'S RECOMMENDATIONS.

CANTILEVER RETAINING WALL DRAINAGE SYSTEMS

DEL PRADO
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	PLATE NO.:	3

CHRISTIAN WHEELER
ENGINEERING

Appendix A

Del Prado North - Trench Logs

LOG OF TEST TRENCH T-1

Date Logged:	8/5/15	Equipment:	Case 580L Backhoe
Logged By:	DJF	Auger Type:	N/A
Existing Elevation:	626.0 feet	Drive Type:	18-inch Bucket
Finish Elevation:	625.0 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Density
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential		

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	626		SM	**Older Alluvium (Qoal):** Light brown, dry, loose, very fine- to medium-grained, SILTY SAND; porous to 1½ feet.							
2			SC	Reddish-brown, moist, medium dense to dense, very fine- to medium-grained, CLAYEY SAND.		CK		8.5	122.1		
3			SM	Light brown, dry, medium dense, very fine- to medium-grained, SILTY SAND; porous.		CK		3.3	115.5		
4			SC	Brown, moist, dense to very dense, very fine- to medium-grained, CLAYEY SAND, mottled.							
5	621										
6						CK		6.4	123.3		
9			SW/ SM	**Weathered Granitics (Kgr):** Light grayish-brown, damp[, very dense, fine- to coarse-grained, WELL-GRADED SAND with SILT.							
10	616			Trench terminated at 10 feet. No groundwater or seepage encountered.							
15	252										

Notes:

Symbol Legend

- ▽ Groundwater Level During Drilling
- ▼ Groundwater Level After Drilling
- Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

DEL PRADO
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	APPENDIX A:	A-1

CHRISTIAN WHEELER ENGINEERING

LOG OF TEST TRENCH T-2

Date Logged:	8/5/15	Equipment:	Case 580L Backhoe
Logged By:	DJF	Auger Type:	N/A
Existing Elevation:	626.0 feet	Drive Type:	18-inch Bucket
Finish Elevation:	622.0 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Density
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential		

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	626		SM	**Older Alluvium (Qoal):** Light brown, dry, loose, fine- to medium-grained, SILTY SAND; porous with rootlets to 2 feet.							
1				Damp, loose to medium dense.							
2			SC	Reddish-brown, moist, dense to very dense, very fine- to medium-grained, CLAYEY SAND.							
3											
4											
5	621		SW/ SM	**Weathered Granitics (Kgr):** Reddish-brown to light grayish-brown, damp, very dense, fine- to coarse-grained, WELL-GRADED SAND with SILT.							
6				Trench terminated at 6 feet. No groundwater or seepage encountered.							
7											
8											
9											
10	616										
11											
12											
13											
14											
15											

Notes:

Symbol Legend

- Groundwater Level During Drilling
- Groundwater Level After Drilling
- Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

DEL PRADO
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	APPENDIX A:	A-2

CHRISTIAN WHEELER ENGINEERING

LOG OF TEST TRENCH T-3

Date Logged:	8/5/15	Equipment:	Case 580L Backhoe
Logged By:	DJF	Auger Type:	N/A
Existing Elevation:	630.0 feet	Drive Type:	18-inch Bucket
Finish Elevation:	625.0 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Density
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential		

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	630		SC	**Older Alluvium (Qoal):** Reddish-brown, damp, medium dense, very fine- to medium-grained, CLAYEY SAND with roots.							
2			SM	Light brown, dry, loose to medium dense, very fine- to medium-grained, SILTY SAND, porous with roots.							
3			SC	Reddish-brown, moist, dense to very dense, very fine- to medium-grained, CLAYEY SAND, mottled.							
5	625		SW/ SM	**Weathered Granitics (Kgr):** Reddish-brown to light grayish-brown, damp, very dense, fine- to coarse-grained, WELL-GRADED SAND with SILT.							
6				Trench terminated at 6 feet. No groundwater or seepage encountered.							
10	620										
15											

Notes:

Symbol Legend

- ▽ Groundwater Level During Drilling
- ▼ Groundwater Level After Drilling
- ⁘ Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

DEL PRADO
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	APPENDIX A:	A-3

CHRISTIAN WHEELER ENGINEERING

LOG OF TEST TRENCH T-4

Date Logged:	8/5/15	Equipment:	Case 580L Backhoe
Logged By:	DJF	Auger Type:	N/A
Existing Elevation:	629.0 feet	Drive Type:	18-inch Bucket
Finish Elevation:	626.0 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Density
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential		

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	629		SM	**Older Alluvium (Qoal):** Light brown, dry, loose, very fine- to medium-grained, SILTY SAND, porous.							
1			SC	Reddish-brown, moist, medium dense to dense, fine- to medium-grained, CLAYEY SAND.		CK		7.7	122.1		SA EI MD SO4 DS
2											
3											
4			SW/ SM	**Weathered Granitics (Kgr):** Grayish-brown to reddish-brown, damp, very dense, fine- to coarse-grained, WELL-GRADED SAND with SILT.		CK		3.0	137.3		
5	624										
6											
7				Trench terminated at 7 feet. No groundwater or seepage encountered.							
8											
9											
10	619										
11											
12											
13											
14											
15											

Notes:

Symbol Legend

- ▽ Groundwater Level During Drilling
- ▼ Groundwater Level After Drilling
- ⁘ Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

DEL PRADO
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	APPENDIX A:	A-4

CHRISTIAN WHEELER ENGINEERING

LOG OF TEST TRENCH T-5

Date Logged:	8/5/15	Equipment:	Case 580L Backhoe
Logged By:	DJF	Auger Type:	N/A
Existing Elevation:	622.0 feet	Drive Type:	18-inch Bucket
Finish Elevation:	621.0 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Density
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential		

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	622		SW/ SM	**Artificial Fill (Qaf):** Brown to light grayish-brown, damp, loose to medium dense, fine- to coarse-grained, WELL-GRADED SAND with SILT.							
2			SC	**Older Alluvium (Qoal):** Reddish-brown, moist, dense to very dense, very fine- to medium-grained, CLAYEY SAND.							R-Val
3						CK		10.8	120.9		
5	617		SW/ SM	**Weathered Granitics (Kgr):** Light grayish-brown, moist, very dense, fine- to coarse-grained, WELL-GRADED SAND with SILT.							
6				Trench terminated at 6 feet. No groundwater or seepage encountered.							

Notes:

Symbol Legend

- ▽ Groundwater Level During Drilling
- ▼ Groundwater Level After Drilling
- ⁘ Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

DEL PRADO
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	APPENDIX A:	A-5

CHRISTIAN WHEELER ENGINEERING

LOG OF TEST TRENCH T-6

Date Logged:	8/5/15	Equipment:	Case 580L Backhoe
Logged By:	DJF	Auger Type:	N/A
Existing Elevation:	619.0 feet	Drive Type:	18-inch Bucket
Finish Elevation:	620.0 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Density
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential		

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	619		SM	**Older Alluvium (Qoal):** Light brown to reddish-brown, dry, loose, very fine- to medium-graiined, SILTY SAND; porous, roots in upper 18 inches.							
1				Damp, medium dense.							
2											
3			SC	Reddish-brown, moist, dense to very dense, very fine- to medium-grained, CLAYEY SAND.							
4						CK		6.0	130.7		
5	614										
6											
7			SW/ SM	**Weathered Granitics (Kgr) :** Light grayish-brown, damp, very dense, fine- to coarse-grained, WELL-GRADED SAND with SILT.							
8				Trench terminated at 8 feet. No groundwater or seepage encountered.							
9											
10											
11											
12											
13											
14											
15											

Notes:

Symbol Legend

- Groundwater Level During Drilling
- Groundwater Level After Drilling
- Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

DEL PRADO
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	APPENDIX A:	A-6

CHRISTIAN WHEELER ENGINEERING

LOG OF TEST TRENCH T-7

Date Logged:	8/5/15	Equipment:	Case 580L Backhoe
Logged By:	DJF	Auger Type:	N/A
Existing Elevation:	622.0 feet	Drive Type:	18-inch Bucket
Finish Elevation:	623.0 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Density
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential		

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	622		SM	**Older Alluvium (Qoal):** Brown to reddish-brown, dry, medium dense, fine- to medium-grained, SILTY SAND; porous.							
1			SW/ SM	**Weathered Granitics (Kgr):** Reddish-brown to light grayish-brown, damp, very dense, fine- to coarse-grained, WELL-GRADED SAND.							
2											
3				Trench terminated at 3 feet. No groundwater or seepage encountered.							
4											
5	617										
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

Notes:

Symbol Legend

- Groundwater Level During Drilling
- Groundwater Level After Drilling
- Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

DEL PRADO
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	APPENDIX A:	A-7

CHRISTIAN WHEELER ENGINEERING

LOG OF TEST TRENCH T-8

Date Logged:	8/5/15	Equipment:	Case 580L Backhoe
Logged By:	DJF	Auger Type:	N/A
Existing Elevation:	622.0 feet	Drive Type:	18-inch Bucket
Finish Elevation:	623.0 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Density
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential		

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	622		SM	**Older Alluvium (Qoal):** Light brown, dry, loose, fine- to medium-grained, SILTY SAND; porous.							
1				Medium dense.							
2						CK		2.7	132.6		
3			SC	Reddish-brown to light grayish-brown, damp, very dense, fine- to coarse-grained, WELL-GRADED SAND.		CK		8.4	120.4		
4			SW/ SM	**Weathered Granitics (Kgr):** Reddish-brown to light grayish-brown, damp, very dense, fine- to coarse-grained, WELL-GRADED SAND with SILT.							
5	617										
6				Trench terminated at 6 feet. No groundwater or seepage encountered.							
7											
8											
9											
10											
11											
12											
13											
14											
15											

Notes:

Symbol Legend

- Groundwater Level During Drilling
- Groundwater Level After Drilling
- Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

DEL PRADO
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	APPENDIX A:	A-8

CHRISTIAN WHEELER ENGINEERING

LOG OF TEST TRENCH T-9

Date Logged:	8/5/15	Equipment:	Case 580L Backhoe
Logged By:	DJF	Auger Type:	N/A
Existing Elevation:	618.0 feet	Drive Type:	18-inch Bucket
Finish Elevation:	620.0 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Density
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential		

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	618		SM	**Artificial Fill (Qaf):** Brown to grayish-brown, moist, loose, fine- to medium-grained, SILTY SAND.							
3			SW/ SM	**Weathered Granitics (Kgr):** Reddish-brown, moist, dense, fine- to coarse-grained, WELL-GRADED SAND; highly weathered to moderately weathered.							
4				Trench terminated at 4 feet. No groundwater or seepage encountered.							
5	613										
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

Notes:

Symbol Legend

- Groundwater Level During Drilling
- Groundwater Level After Drilling
- Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

DEL PRADO
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	APPENDIX A:	A-9

CHRISTIAN WHEELER ENGINEERING

LOG OF TEST TRENCH T-10

Date Logged:	8/5/15	Equipment:	Case 580L Backhoe
Logged By:	DJF	Auger Type:	N/A
Existing Elevation:	620.0 feet	Drive Type:	18-inch Bucket
Finish Elevation:	620.0 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Density
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential		

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	618		SW/ SM	**Artificial Fill (Qaf):** Light grayish-brown, dry, loose to medium dense, fine- to coarse-grained, WELL-GRADED SAND with SILT.							
2			SM	**Older Alluvium (Qoal):** Light brown, dry, loose to medium dense, very fine- to medium-grained, SILTY SAND; porous.							
4			SC	Reddish-brown, moist, dense to very dense, very fine- to medium-grained, CLAYEY SAND.							
5	613			Trench terminated at 5 feet. No groundwater or seepage encountered.							

Notes:

Symbol Legend

- ▽ Groundwater Level During Drilling
- ▼ Groundwater Level After Drilling
- ⁇ Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

DEL PRADO
BROTHERTON ROAD AND CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

DATE:	AUGUST 2015	JOB NO.:	2150474.01
BY:	SRD	APPENDIX A:	A-10

CHRISTIAN WHEELER ENGINEERING

Appendix B

Del Prado North - Laboratory Test Results

Laboratory tests were performed in accordance with the generally accepted American Society for Testing and Materials (ASTM) test methods or suggested procedures. Brief descriptions of the tests performed are presented below:

a) **CLASSIFICATION:** Field classifications were verified in the laboratory by visual examination. The final soil classifications are in accordance with the Unified Soil Classification System and are presented on the exploration logs in Appendix A.

b) **MOISTURE-DENSITY:** In-place moisture contents and dry densities were determined for representative soil samples. This information was an aid to classification and permitted recognition of variations in material consistency with depth. The dry unit weight is determined in pounds per cubic foot, and the in-place moisture content is determined as a percentage of the soil's dry weight. The results of these tests are summarized in the exploration logs presented in Appendix A.

c) **DIRECT SHEAR:** Direct shear tests were performed to determine the failure envelope of selected soils based on yield shear strength. The shear box was designed to accommodate a sample having a diameter of 2.375 inches or 2.50 inches and a height of 1.0 inch. Samples were tested at different vertical loads and a saturated moisture content. The shear stress was applied at a constant rate of strain of approximately 0.05 inch per minute.

d) **EXPANSION INDEX TEST:** The expansion index of a selected soil was determined in accordance with ASTM D4829. A 1-inch-thick by 4-inch-diameter specimen was prepared by compacting the soil with a specified energy at approximately 50 percent saturation. The specimen was placed in a consolidometer with porous stones at the top and bottom and a total normal pressure of 144.7 psf was applied. The specimen was allowed to consolidate for a period of 10 minutes and then saturated. The change in vertical movement was recorded until the rate of expansion became nominal.

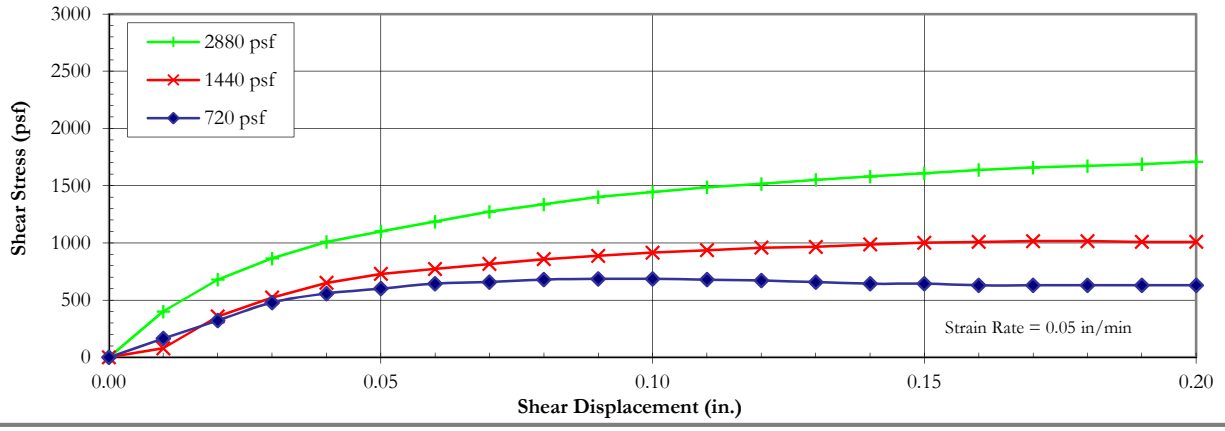
e) **GRAIN SIZE DISTRIBUTION:** The grain size distributions of selected samples were determined in accordance with ASTM C136 and/or ASTM D422.

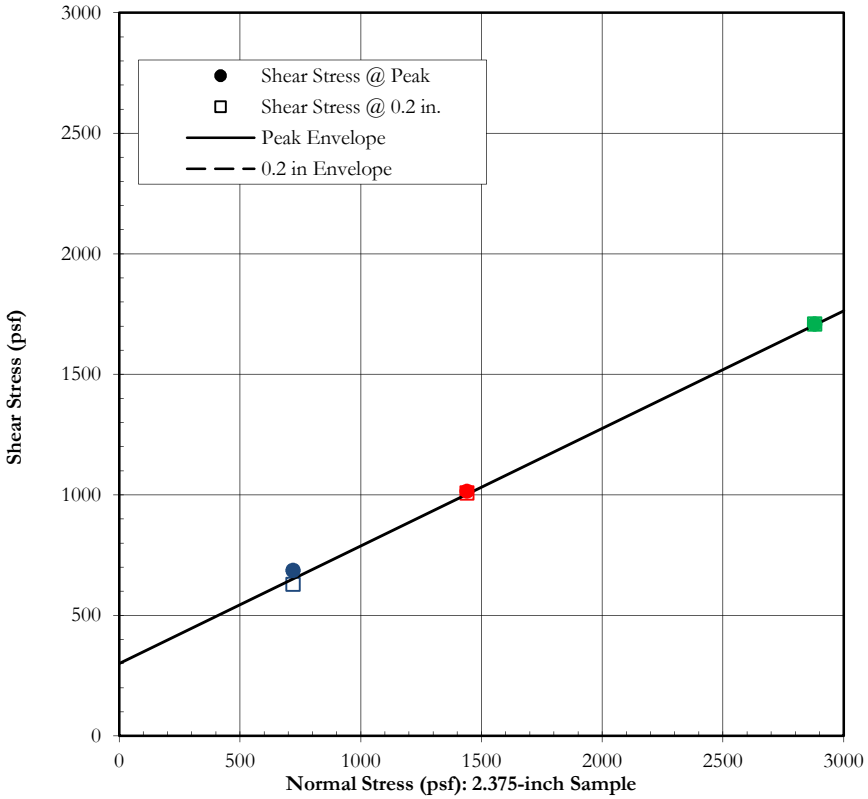
f) **MAXIMUM DENSITY & OPTIMUM MOISTURE CONTENT:** The maximum dry density and optimum moisture content of typical soils were determined in the laboratory in accordance with ASTM Standard Test D-1557, Method A.

g) **RESISTANCE VALUE:** The R-Value was determined for one or more samples of soil likely to be present at the subgrade level. The R-Value was determined in accordance with California Test Method 301.

h) **SOLUBLE SULFATES:** The soluble sulfate content was determined for samples of soil likely to be present at the foundation level. The soluble sulfate content was determined in accordance with California Test Method 417.

DIRECT SHEAR TEST (ASTM D3080)





Sample No. T-4 @ 1'-3½'

Sample Type: Remolded to 90%

Normal Stress (psf)	**720**	**1440**	**2880**
Peak Shear Stress (psf)	686	1015	1709
Shear Stress at 0.2 in (psf)	629	1008	1709
Initial Dry Density (pcf)	112.0	112.0	112.0
Initial Moisture Content (%)	11.8	11.8	11.8

	Peak	**at 0.2 in Displacement**
Friction Angle, ϕ (deg):	26	
Cohesion Intercept, c (psf):	300	

CHRISTIAN WHEELER
ENGINEERING

LABORATORY TEST RESULTS

DEL PRADO NORTH
BROTHERTON ROAD & S. CENTRE PARKWAY
ESCONDIDO, CALIFORNIA

FIGURE: B2

BY: SCC | DATE: AUGUST 2015 | REPORT NO: 2150474.01

EXPANSION INDEX (ASTM D2849)

Sample No.	Initial Moisture (%)	Initial Dry Density (pcf)	Final Moisture (%)	Expansion Index	Expansion Potential
T-4 @ 1'-3½'	10.4	109.1	20.0	25	Low

CLASSIFICATION OF EXPANSION POTENTIAL

Expansion Index	Expansion Potential
1-20	Very Low
21-50	Low
51-90	Medium
91-130	High
> 130	Very High

CHRISTIAN WHEELER ENGINEERING

LABORATORY TEST RESULTS

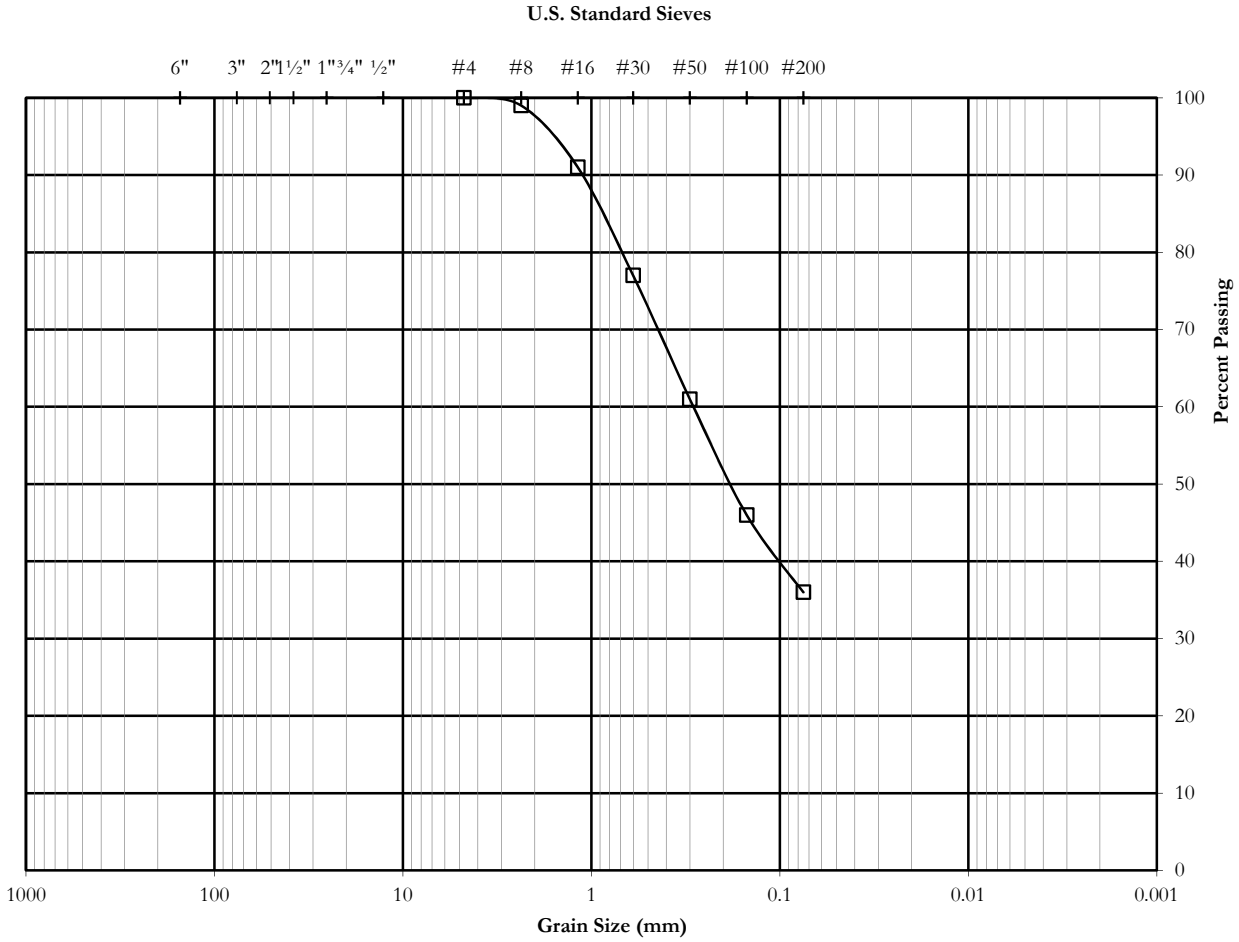
DEL PRADO NORTH
BROTHERTON ROAD & S. CENTRE PARKWAY
ESCONDIDO, CALIFORNIA

FIGURE: B3

BY: SCC | DATE: AUGUST 2015 | REPORT NO: 2150474.01

GRAIN SIZE DISTRIBUTION (ASTM D422)

Cobble	Gravel		Sand			Silt and Clay
	Coarse	Fine	Coarse	Medium	Fine	



Symbol	Sample No.	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	USCS
□	T-4 @ 1-'3½'									SC

CHRISTIAN WHEELER
ENGINEERING

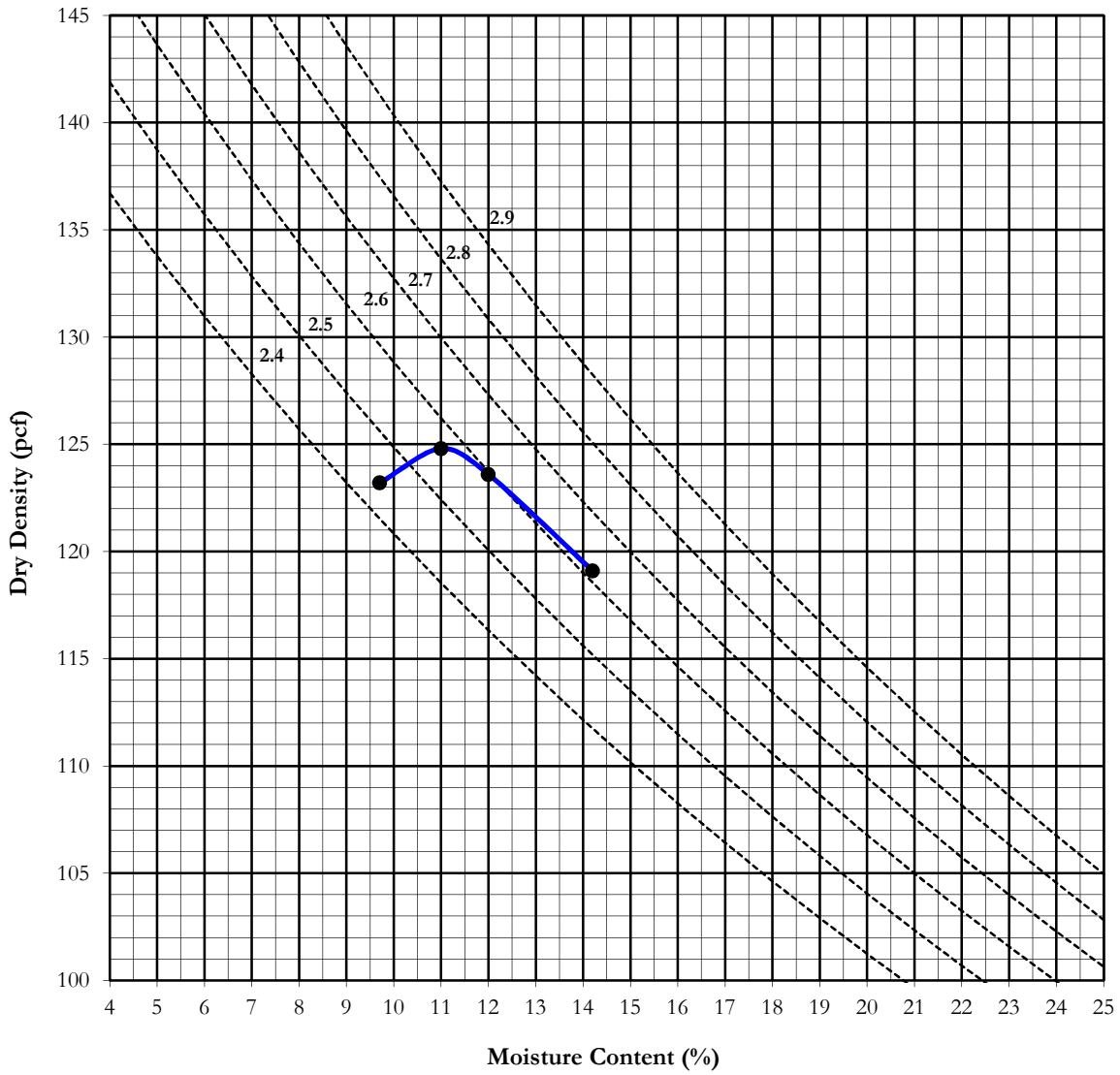
LABORATORY TEST RESULTS

DEL PRADO NORTH
BROTHERTON ROAD & S. CENTRE PARKWAY
ESCONDIDO, CALIFORNIA

FIGURE: B4

BY: SCC | DATE: AUGUST 2015 | REPORT NO: 2150474.01

MAXIMUM DENSITY AND OPTIMUM MOISTURE CONTENT (ASTM D1557)



Sample No	Sample Description	Method	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
T-4 @ 1'-3½'	Reddish-brown, clayey sand	A	124.8	11.0

CHRISTIAN WHEELER ENGINEERING

LABORATORY TEST RESULTS

DEL PRADO NORTH
BROTHERTON ROAD & S. CENTRE PARKWAY
ESCONDIDO, CALIFORNIA

FIGURE: B5

BY: SCC | DATE: AUGUST 2015 | REPORT NO: 2150474.01

RESISTANCE VALUE (CALTEST 301)

Sample No.	Sample Description	R-Value
T-5 @ 2'-5'	Reddish-brown, clayey sand	12

CORROSIVITY TESTS

Sample No.	CALTEST 417	CALTEST 643		CALTEST 422
	Sulfate Content (% SO_4)	pH	Resistivity (ohm-cm)	Chloride Content (ppm)
T-4 @ 1'-3½'	0.003	--	--	--

Appendix C

Del Prado South – Trench Logs and Lab Results

Reference: Christian Wheeler Engineering, 2011, Report of Preliminary Geotechnical Investigation, Proposed Parkway Residence Inns, 2301-2413 South Centre City Parkway, Escondido, California.

LOG OF TRENCH T-1

Date Excavated:	3/3/2011	Equipment:	Case 580L backhoe
Logged by:	TSW	Bucket Size:	18 inch
Existing Elevation:	610.5 feet	Drive Weight:	N/A
Proposed Elevation:	613 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Sample
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Maximum Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	610.5		SM	**Topsoil:** Medium brown, moist to very moist, loose, VERY SILTY SAND, fine- to medium-grained.		CK		8.2	116.2	89.4	SA MD SO4 DS
				Wet.							
			SC	**Subsoil:** Dark reddish-brown, moist to very moist, medium dense, CLAYEY SAND, fine- to medium-grained. Expansion Index = 45 (Low)		CK		12.3	112.6		EI
4	606.5		SM	**Old Alluvium (Qoal):** Medium to dark reddish-brown, moist, medium dense, SILTY SAND with CLAY, fine- to medium-grained.		CK		12.8	118.7		
				Medium dense to dense.		CK		10.2	124.4		
8	602.5		SW-SM	**Weathered Granitic Rock (Kgr):** Reddish-brown to dark brown, moist, dense, WELL GRADED SAND with SILT, fine- to coarse-grained.		CK					
				Trench terminated at 9 ½ feet. Seepage encountered at 2 ½ feet. No groundwater encountered.							
12	598.5										
16	594.5										
20	590.5										
24	586.5										
28	582.5										

Symbol Legend

- Groundwater
- Apparent Seepage
- * No Sample Recovery
- ** Nonrepresentative Blow Count (rocks present)

CHRISTIAN WHEELER ENGINEERING

PROPOSED PARKWAY APARTMENT RESIDENCES
2353-2383 S Centre City Parkway
Escondido, California

BY:	JDB	DATE:	MARCH 2011
JOB NO.:	2110114	PLATE NO.:	2

LOG OF TRENCH T-2

Date Excavated:	3/3/2011	Equipment:	Case 580L backhoe
Logged by:	TSW	Bucket Size:	18 inch
Existing Elevation:	613 feet	Drive Weight:	N/A
Proposed Elevation:	615 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Sample
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Maximum Density	DS	Direct Shear
SO4	Soluble Sulfates	Col	Collapse Potential
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	613		SM	**Topsoil:** Medium brown, moist to very moist, loose, VERY SILTY SAND, fine- to medium-grained.		CK					
				Wet.							
4	609		SC	**Subsoil:** Dark reddish-brown, moist to very moist, medium stiff to medium dense, CLAYEY SAND, fine- to medium-grained.		CK		14.0	109.1		
			SM	**Old Alluvium (Qoal):** Medium to dark reddish-brown, moist, medium dense, SILTY SAND with CLAY, fine- to medium-grained.		CK		13.1	114.5		Col
				Medium dense to dense.							
8	605			Trench terminated at 7 feet. Seepage encountered at 3 feet. No groundwater encountered.							
12	601										
16	597										
20	593										
24	589										
28	585										

Symbol Legend

- Groundwater
- Apparent Seepage
- * No Sample Recovery
- ** Nonrepresentative Blow Count (rocks present)

CHRISTIAN WHEELER ENGINEERING

PROPOSED PARKWAY APARTMENT RESIDENCES
2353-2383 S Centre City Parkway
Escondido, California

BY:	JDB	DATE:	MARCH 2011
JOB NO.:	2110114	PLATE NO.:	3

LOG OF TRENCH T-3

Date Excavated:	3/3/2011	Equipment:	Case 580L backhoe
Logged by:	TSW	Bucket Size:	18 inch
Existing Elevation:	615 feet	Drive Weight:	N/A
Proposed Elevation:	615 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Sample
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Maximum Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	615		SM	**Topsoil:** Medium brown, moist to very moist, loose, VERY SILTY SAND, fine- to medium-grained.							
			SC	**Subsoil:** Dark reddish-brown, moist to very moist, medium stiff to medium dense, CLAYEY SAND, fine- to medium-grained.		CK					
4	611		SM	**Old Alluvium (Qoal):** Light to medium reddish-brown, moist, medium dense, SILTY SAND with CLAY, fine- to medium-grained.		CK CK		15.0	117.6		
			SW-SM	Medium dense to dense.		CK					
8	607			**Weathered Granitic Rock (Kgr):** Reddish-brown to dark brown, moist, dense to very dense, WELL GRADED SAND with SILT, fine- to coarse-grained.							
				Trench terminated at 6 feet. No groundwater or seepage encountered.							
12	603										
16	599										
20	595										
24	591										
28	587										

Symbol Legend

- Groundwater
- Apparent Seepage
- * No Sample Recovery
- ** Nonrepresentative Blow Count (rocks present)

CHRISTIAN WHEELER ENGINEERING

PROPOSED PARKWAY APARTMENT RESIDENCES
2353-2383 S Centre City Parkway
Escondido, California

BY:	JDB	DATE:	MARCH 2011
JOB NO.:	2110114	PLATE NO.:	4

LOG OF TRENCH T-4

Date Excavated:	3/3/2011	Equipment:	Case 580L backhoe
Logged by:	TSW	Bucket Size:	18 inch
Existing Elevation:	613 feet	Drive Weight:	N/A
Proposed Elevation:	613 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Sample
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Maximum Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	613		SM	**Topsoil:** Medium brown, moist to very moist, loose, VERY SILTY SAND, fine- to medium-grained. Wet.							
			SC	**Subsoil:** Dark reddish-brown, moist to very moist, medium stiff to medium dense, CLAYEY SAND, fine- to medium-grained.							
4	609		SM	**Old Alluvium (Qoal):** Medium to dark reddish-brown, moist, medium dense, SILTY SAND with CLAY, fine- to medium-grained.		CK		13.3	118.3		
				Medium dense to dense.		CK					
				Trench terminated at 6 feet. No groundwater or seepage encountered.							
8	605										
12	601										
16	597										
20	593										
24	589										
28	585										

Symbol Legend

- Groundwater
- Apparent Seepage
- * No Sample Recovery
- ** Nonrepresentative Blow Count (rocks present)

CHRISTIAN WHEELER ENGINEERING

PROPOSED PARKWAY APARTMENT RESIDENCES
2353-2383 S Centre City Parkway
Escondido, California

BY:	JDB	DATE:	MARCH 2011
JOB NO.:	2110114	PLATE NO.:	5

LOG OF TRENCH T-5

Date Excavated:	3/3/2011	Equipment:	Case 580L backhoe
Logged by:	TSW	Bucket Size:	18 inch
Existing Elevation:	611.5 feet	Drive Weight:	N/A
Proposed Elevation:	613 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Sample
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Maximum Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	611.5		SM	**Topsoil:** Medium brown, moist to very moist, loose, VERY SILTY SAND, fine- to medium-grained. Wet.							
			SC	**Subsoil:** Dark reddish-brown, moist to very moist, medium stiff to medium dense, CLAYEY SAND, fine- to medium-grained.		CK					
4	607.5		SM	**Old Alluvium (Qoal):** Light to medium reddish-brown, moist, medium dense, SILTY SAND with CLAY, fine- to medium-grained. Medium dense to dense.		CK CK					
				Trench terminated at 6 feet. No groundwater or seepage encountered.							
8	603.5										
12	599.5										
16	595.5										
20	591.5										
24	587.5										
28	583.5										

Symbol Legend

- Groundwater
- Apparent Seepage
- * No Sample Recovery
- ** Nonrepresentative Blow Count (rocks present)

CHRISTIAN WHEELER ENGINEERING

PROPOSED PARKWAY APARTMENT RESIDENCES
2353-2383 S Centre City Parkway
Escondido, California

BY:	JDB	DATE:	MARCH 2011
JOB NO.:	2110114	PLATE NO.:	6

LOG OF TRENCH T-6

Date Excavated:	3/3/2011	Equipment:	Case 580L backhoe
Logged by:	TSW	Bucket Size:	18 inch
Existing Elevation:	608.5 feet	Drive Weight:	N/A
Proposed Elevation:	613 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal Modified California Sampler
CK Chunk Sample
SPT Standard Penetration Test
DR Density Ring
ST Shelby Tube

MD Maximum Density
SO4 Soluble Sulfates
SA Sieve Analysis
HA Hydrometer
SE Sand Equivalent
PI Plasticity Index
DS Direct Shear
Con Consolidation
EI Expansion Index
R-Val Resistance Value
Chl Soluble Chlorides
Res pH & Resistivity

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	608.5		SM	**Topsoil:** Medium brown, moist to very moist, loose, VERY SILTY SAND, fine- to medium-grained.							
			SC	**Subsoil:** Dark reddish-brown, moist to very moist, medium stiff to medium dense, CLAYEY SAND, fine- to medium-grained.		CK					
4	604.5		SM	**Old Alluvium (Qoal):** Light to medium reddish-brown, moist, medium dense, SILTY SAND with CLAY, fine- to medium-grained.		CK		13.3	118.3		
				Medium dense to dense.		CK					
8	600.5			Trench terminated at 6 feet. No groundwater or seepage encountered.							
12	596.5										
16	592.5										
20	588.5										
24	584.5										
28	580.5										

Symbol Legend

- Groundwater
- Apparent Seepage
- * No Sample Recovery
- ** Nonrepresentative Blow Count (rocks present)

CHRISTIAN WHEELER ENGINEERING

PROPOSED PARKWAY APARTMENT RESIDENCES
2353-2383 S Centre City Parkway
Escondido, California

BY: JDB	DATE: MARCH 2011
JOB NO.: 2110114	PLATE NO.: 7

LOG OF TRENCH T-7

Date Excavated:	3/3/2011	Equipment:	Case 580L backhoe
Logged by:	TSW	Bucket Size:	18 inch
Existing Elevation:	611 feet	Drive Weight:	N/A
Proposed Elevation:	611 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Sample
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Maximum Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	611		SM	**Topsoil:** Medium brown, moist to very moist, loose, VERY SILTY SAND, fine- to medium-grained.							
			SC	**Subsoil:** Dark reddish-brown, moist to very moist, medium stiff to medium dense, CLAYEY SAND, fine- to medium-grained.		CK					
4	607		SM	**Old Alluvium (Qoal):** Medium to dark reddish-brown, moist, medium dense, SILTY SAND with CLAY, fine- to medium-grained. Medium dense to dense.		CK					
8	603			Trench terminated at 6 feet. No groundwater or seepage encountered.							
12	599										
16	595										
20	591										
24	587										
28	583										

Symbol Legend

- Groundwater
- Apparent Seepage
- * No Sample Recovery
- ** Nonrepresentative Blow Count (rocks present)

CHRISTIAN WHEELER ENGINEERING

PROPOSED PARKWAY APARTMENT RESIDENCES
2353-2383 S Centre City Parkway
Escondido, California

BY:	JDB	DATE:	MARCH 2011
JOB NO.:	2110114	PLATE NO.:	8

LOG OF TRENCH T-8

Date Excavated:	3/3/2011	Equipment:	Case 580L backhoe
Logged by:	TSW	Bucket Size:	18 inch
Existing Elevation:	611 feet	Drive Weight:	N/A
Proposed Elevation:	611 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk Sample
SPT	Standard Penetration Test	DR	Density Ring
ST	Shelby Tube		
MD	Maximum Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	611		SM	**Topsoil:** Medium brown, moist to very moist, loose, VERY SILTY SAND, fine- to medium-grained.							
			SC	**Subsoil:** Medium to dark reddish-brown, moist to very moist, medium stiff to medium dense, CLAYEY SAND, fine- to medium-grained.							
4	607		SM	**Old Alluvium (Qoal):** Light to medium reddish-brown, moist, medium dense, SILTY SAND with CLAY, fine- to medium-grained.		CK		15.3	100.5		
				Medium dense to dense.		CK					
8	603			Trench terminated at 6 feet. No groundwater or seepage encountered.							
12	599										
16	595										
20	591										
24	587										
28	583										

Symbol Legend

- Groundwater
- Apparent Seepage
- * No Sample Recovery
- ** Nonrepresentative Blow Count (rocks present)

CHRISTIAN WHEELER ENGINEERING

PROPOSED PARKWAY APARTMENT RESIDENCES
2353-2383 S Centre City Parkway
Escondido, California

BY:	JDB	DATE:	MARCH 2011
JOB NO.:	2110114	PLATE NO.:	9

LABORATORY TEST RESULTS

PROPOSED PARKWAY RESIDENCE INNS

2301-2413 S CENTRE CITY PARKWAY

ESCONDIDO, CALIFORNIA

MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT (ASTM D1557)

Sample Location	**Trench T-1 @ 0-2½'**
Sample Description	Brown Very Silty Sand, SM
Maximum Density	130.0 pcf
Optimum Moisture	8.2 %

DIRECT SHEAR (ASTM D3080)

Sample Location	**Trench T-1 @ 0-2½'**
Sample Type	Remolded to 90 %
Friction Angle	31°
Cohesion	200 psf

EXPANSION INDEX TESTS (ASTM D4829)

Sample Location	**Trench T-1 @ 2½'-4'**
Initial Moisture:	10.4 %
Initial Dry Density	103.2 pcf
Final Moisture:	24.4 %
Expansion Index:	45 (low)

GRAIN SIZE DISTRIBUTION (ASTM D422)

Sample Location	**Trench T-1 @ 0-2½'**
Sieve Size	*Percent Passing*
#4	100
#8	99
#16	97
#30	87
#50	70
#100	51
#200	35

LABORATORY TEST RESULTS (Continued)

COLLAPSE POTENTIAL (ASTM D 5333)

Sample Location	**Trench T-2 @ 5½'**
Initial Moisture Content	13.1%
Initial Density	114.5 pcf
Consolidation Before Water Added	2.9 %
Consolidation After Water Added	3.3%
Final Moisture	14.8 %
Axial Load	4.3 ksf

SOLUBLE SULFATES (CALIFORNIA TEST METHOD 417)

Sample Location	**Trench T-1 @ 0-2½'**
Soluble Sulfate	<0.001 % (SO_4)

Appendix D

References

REFERENCES

California Division of Mines and Geology, 1998, Maps of Known Active Fault Near Source-Zones in California and Adjacent Portions of Nevada

Christian Wheeler Engineering, 2011, Report of Preliminary Geotechnical Investigation, Proposed Parkway Residence Inns, 2301-2413 South Centre City Parkway, Escondido, California.

Hart, E. W. and Bryant, W. A., 1997, Fault-Rupture Hazard Zones in California; California Division of Mines and Geology Special Publication 42

Kennedy, M.P. and others, 1975, Character and Recency of Faulting, San Diego Metropolitan Area, California, California Division of Mines and Geology Special Report 123

Kennedy, M.P. and Tan, S.S., 2008, Geologic Map of the Oceanside 30' X 60' Quadrangle, California; California Department of Conservation and California Geological Survey.

Tan, S.S., 1995, Landslide Hazards in the Northern Part of the San Diego Metropolitan Area, SanDiego County, California, California Division of Mines and Geology Open-File Report 95-03.

United States Geological Survey, Seismic Design Values for Buildings, Java Ground Motion Calculator Version 5.0.9a.

Appendix E

Recommended Grading Specifications – General Provisions

RECOMMENDED GRADING SPECIFICATIONS - GENERAL PROVISIONS

DEL PRADO
BROTHERTON ROAD AND S. CENTRE PARKWAY
ESCONDIDO, CALIFORNIA

GENERAL INTENT

The intent of these specifications is to establish procedures for clearing, compacting natural ground, preparing areas to be filled, and placing and compacting fill soils to the lines and grades shown on the accepted plans. The recommendations contained in the preliminary geotechnical investigation report and/or the attached Special Provisions are a part of the Recommended Grading Specifications and shall supersede the provisions contained hereinafter in the case of conflict. These specifications shall only be used in conjunction with the geotechnical report for which they are a part. No deviation from these specifications will be allowed, except where specified in the geotechnical report or in other written communication signed by the Geotechnical Engineer.

OBSERVATION AND TESTING

Christian Wheeler Engineering shall be retained as the Geotechnical Engineer to observe and test the earthwork in accordance with these specifications. It will be necessary that the Geotechnical Engineer or his representative provide adequate observation so that he may provide his opinion as to whether or not the work was accomplished as specified. It shall be the responsibility of the contractor to assist the Geotechnical Engineer and to keep him appraised of work schedules, changes and new information and data so that he may provide these opinions. In the event that any unusual conditions not covered by the special provisions or preliminary geotechnical report are encountered during the grading operations, the Geotechnical Engineer shall be contacted for further recommendations.

If, in the opinion of the Geotechnical Engineer, substandard conditions are encountered, such as questionable or unsuitable soil, unacceptable moisture content, inadequate compaction, adverse weather, etc., construction should be stopped until the conditions are remedied or corrected or he shall recommend rejection of this work.

Tests used to determine the degree of compaction should be performed in accordance with the following American Society for Testing and Materials test methods:

Maximum Density & Optimum Moisture Content - ASTM D-1557
Density of Soil In-Place - ASTM D-1556 or ASTM D-6938

All densities shall be expressed in terms of Relative Compaction as determined by the foregoing ASTM testing procedures.

PREPARATION OF AREAS TO RECEIVE FILL

All vegetation, brush and debris derived from clearing operations shall be removed, and legally disposed of. All areas disturbed by site grading should be left in a neat and finished appearance, free from unsightly debris.

After clearing or benching the natural ground, the areas to be filled shall be scarified to a depth of 6 inches, brought to the proper moisture content, compacted and tested for the specified minimum degree of compaction. All loose soils in excess of 6 inches thick should be removed to firm natural ground which is defined as natural soil which possesses an in-situ density of at least 90 percent of its maximum dry density.

When the slope of the natural ground receiving fill exceeds 20 percent (5 horizontal units to 1 vertical unit), the original ground shall be stepped or benched. Benches shall be cut to a firm competent formational soil. The lower bench shall be at least 10 feet wide or 1-1/2 times the equipment width, whichever is greater, and shall be sloped back into the hillside at a gradient of not less than two (2) percent. All other benches should be at least 6 feet wide. The horizontal portion of each bench shall be compacted prior to receiving fill as specified herein for compacted natural ground. Ground slopes flatter than 20 percent shall be benched when considered necessary by the Geotechnical Engineer.

Any abandoned buried structures encountered during grading operations must be totally removed. All underground utilities to be abandoned beneath any proposed structure should be removed from within 10 feet of the structure and properly capped off. The resulting depressions from the above described procedure should be backfilled with acceptable soil that is compacted to the requirements of the Geotechnical Engineer. This includes, but is not limited to, septic tanks, fuel tanks, sewer lines or leach lines, storm drains and water lines. Any buried structures or utilities not to be abandoned should be brought to the attention of the Geotechnical Engineer so that he may determine if any special recommendation will be necessary.

All water wells which will be abandoned should be backfilled and capped in accordance to the requirements set forth by the Geotechnical Engineer. The top of the cap should be at least 4 feet below finish grade or 3 feet below the bottom of footing whichever is greater. The type of cap will depend on the diameter of the well and should be determined by the Geotechnical Engineer and/or a qualified Structural Engineer.

FILL MATERIAL

Materials to be placed in the fill shall be approved by the Geotechnical Engineer and shall be free of vegetable matter and other deleterious substances. Granular soil shall contain sufficient fine material to fill the voids. The definition and disposition of oversized rocks and expansive or detrimental soils are covered in the geotechnical report or Special Provisions. Expansive soils, soils of poor gradation, or soils with low strength characteristics may be thoroughly mixed with other soils to provide satisfactory fill material, but only with the explicit consent of the Geotechnical Engineer. Any import material shall be approved by the Geotechnical Engineer before being brought to the site.

PLACING AND COMPACTION OF FILL

Approved fill material shall be placed in areas prepared to receive fill in layers not to exceed 6 inches in compacted thickness. Each layer shall have a uniform moisture content in the range that will allow the compaction effort to be efficiently applied to achieve the specified degree of compaction. Each layer shall be uniformly compacted to the specified minimum degree of compaction with equipment of adequate size to economically compact the layer. Compaction equipment should either be specifically designed for soil compaction or of proven reliability. The minimum degree of compaction to be achieved is specified in either the Special Provisions or the recommendations contained in the preliminary geotechnical investigation report.

When the structural fill material includes rocks, no rocks will be allowed to nest and all voids must be carefully filled with soil such that the minimum degree of compaction recommended in the Special Provisions is achieved. The maximum size and spacing of rock permitted in structural fills and in non-structural fills is discussed in the geotechnical report, when applicable.

Field observation and compaction tests to estimate the degree of compaction of the fill will be taken by the Geotechnical Engineer or his representative. The location and frequency of the tests shall be at the Geotechnical Engineer's discretion. When the compaction test indicates that a particular layer is at less

than the required degree of compaction, the layer shall be reworked to the satisfaction of the Geotechnical Engineer and until the desired relative compaction has been obtained.

Fill slopes shall be compacted by means of sheepsfoot rollers or other suitable equipment. Compaction by sheepsfoot roller shall be at vertical intervals of not greater than four feet. In addition, fill slopes at a ratio of two horizontal to one vertical or flatter, should be trackrolled. Steeper fill slopes shall be over-built and cut-back to finish contours after the slope has been constructed. Slope compaction operations shall result in all fill material six or more inches inward from the finished face of the slope having a relative compaction of at least 90 percent of maximum dry density or the degree of compaction specified in the Special Provisions section of this specification. The compaction operation on the slopes shall be continued until the Geotechnical Engineer is of the opinion that the slopes will be surficially stable.

Density tests in the slopes will be made by the Geotechnical Engineer during construction of the slopes to determine if the required compaction is being achieved. Where failing tests occur or other field problems arise, the Contractor will be notified that day of such conditions by written communication from the Geotechnical Engineer or his representative in the form of a daily field report.

If the method of achieving the required slope compaction selected by the Contractor fails to produce the necessary results, the Contractor shall rework or rebuild such slopes until the required degree of compaction is obtained, at no cost to the Owner or Geotechnical Engineer.

CUT SLOPES

The Engineering Geologist shall inspect cut slopes excavated in rock or lithified formational material during the grading operations at intervals determined at his discretion. If any conditions not anticipated in the preliminary report such as perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints or fault planes are encountered during grading, these conditions shall be analyzed by the Engineering Geologist and Geotechnical Engineer to determine if mitigating measures are necessary.

Unless otherwise specified in the geotechnical report, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of the controlling governmental agency.

ENGINEERING OBSERVATION

Field observation by the Geotechnical Engineer or his representative shall be made during the filling and compaction operations so that he can express his opinion regarding the conformance of the grading with acceptable standards of practice. Neither the presence of the Geotechnical Engineer or his representative or the observation and testing shall release the Grading Contractor from his duty to compact all fill material to the specified degree of compaction.

SEASON LIMITS

Fill shall not be placed during unfavorable weather conditions. When work is interrupted by heavy rain, filling operations shall not be resumed until the proper moisture content and density of the fill materials can be achieved. Damaged site conditions resulting from weather or acts of God shall be repaired before acceptance of work.

RECOMMENDED GRADING SPECIFICATIONS - SPECIAL PROVISIONS

RELATIVE COMPACTION: The minimum degree of compaction to be obtained in compacted natural ground, compacted fill, and compacted backfill shall be at least 90 percent. For street and parking lot subgrade, the upper twelve inches should be compacted to at least 95 percent relative compaction.

EXPANSIVE SOILS: Detrimentally expansive soil is defined as clayey soil which has an expansion index of 50 or greater when tested in accordance with the American Society of Testing Materials (ASTM) Laboratory Test D4829-95.

OVERSIZED MATERIAL: Oversized fill material is generally defined herein as rocks or lumps of soil over six inches in diameter. Oversized materials should not be placed in fill unless recommendations of placement of such material is provided by the Geotechnical Engineer. At least 40 percent of the fill soils shall pass through a No. 4 U.S. Standard Sieve.

TRANSITION LOTS: Where transitions between cut and fill occur within the proposed building pad, the cut portion should be undercut a minimum of one foot below the base of the proposed footings and recompacted as structural backfill. In certain cases that would be addressed in the geotechnical report, special footing reinforcement or a combination of special footing reinforcement and undercutting may be required.

Appendix D

PHASE I ENVIRONMENTAL SITE ASSESSMENT

PHASE I
ENVIRONMENTAL SITE ASSESSMENT

For Property at:

TWO VACANT LOTS ON WEST SIDE OF S. CENTRE CITY PARKWAY
APN 238-130-35 & -36
ESCONDIDO, CALIFORNIA 92029

Prepared For:

Ms. Linda Chandler
Heritage Communities, Inc.
4879 E. La Palma Avenue, Suite 203
Anaheim, California 92807

Prepared By:

Carole Missirlian, PE
Principal

(QA)2 Environmental
18330 Blackhawk Street
Northridge, California 91326
(818) 831-9221

May 21, 2005

Phase I Environmental Site Assessment Report
Two Vacant Lots - S. Centre City Pkwy., Escondido, California
APNs 238-130-35 & -36
May 21, 2005

TABLE OF CONTENTS

SECTION		PAGE
EXECUTIVE SUMMARY		**3**
1.0	**INTRODUCTION**	**4**
1.1	STATEMENT OF PURPOSE	4
1.2	TERMS AND CONDITIONS	4
1.3	SCOPE OF WORK	4
2.0	**SITE DESCRIPTION**	**5**
2.1	SITE LOCATION AND DESCRIPTION	5
2.2	SITE INSPECTION	5
2.3	SUMMARY OF SITE RECONNAISSANCE	5
2.3.1	*Use of Hazardous Substances*	*5*
2.3.2	*Hazardous Substance Containers*	*6*
2.3.3	*Waste Management and Disposal*	*6*
2.3.4	*Polychlorinated Biphenyls*	*6*
2.3.5	*Asbestos*	*6*
2.3.6	*Wells*	*7*
2.3.7	*Radon*	*7*
2.3.8	*Lead-Based Paint*	*7*
2.3.9	*Potential Mold Issue*	*7*
2.3.10	*Utilities*	*7*
2.4	SURROUNDING LAND USES	8
2.5	INTERVIEW	9
2.6	REGIONAL TOPOGRAPHY AND HYDROGEOLOGY	9
2.7	WETLAND AREA	10
3.0	**HISTORICAL INFORMATION**	**11**
3.1	AERIAL PHOTOGRAPH REVIEW	11
3.2	TOPOGRAPHIC MAPS	13
3.3	SANBORN MAPS	14
3.4	CITY OF ESCONDIDO	14
3.5	CITY DIRECTORIES	14
3.7	HISTORICAL USE SUMMARY	14
4.0	**RECORDS REVIEW**	**16**
4.1	REGULATORY DATABASE REVIEW	16
4.1.1	*Subject Property*	*16*
4.1.2	*Adjacent Sites*	*16*
4.2	CITY AND COUNTY AGENCY RECORDS	18
4.2.1	*County of San Diego Department of Environmental Health*	*18*
4.2.2	*County of San Diego Air Pollution Control District*	*18*
4.3	STATE AGENCY RECORDS	18
4.3.1	*California Regional Water Quality Control Board*	*18*
4.3.2	*California EPA – Department of Toxic Substances Control*	*19*
4.3.3	*State of California Division of Oil and Gas*	*19*

TABLE OF CONTENTS

SECTION		PAGE
5.0	**SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**	**20**
5.1	SUMMARY	20
5.2	CONCLUSIONS AND RECOMMENDATIONS	21
6.0	**LIMITATIONS**	**22**
7.0	**REFERENCES**	**23**
8.0	**QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS**	**24**

FIGURES
Figure 1: Site Location Map
Figure 2: Site and Vicinity Map

APPENDICES
Appendix 1: Figures, Maps, Sanborn Report
Appendix 2: Photographs
Appendix 3: Interview/Site Inspection Form
Appendix 4: Environmental Data Resources, Inc. Database Report

EXECUTIVE SUMMARY

This Phase I Environmental Site Assessment (ESA) was performed for two lots located on the west side of S. Centre City Parkway, San Diego County Assessor Parcel Nos. 238-130-35 and -36, in the City of Escondido, San Diego County, California. This Phase I ESA has been prepared by (QA)2 Environmental for the sole use of Heritage Communities, Inc. and their lender.

The subject property is located on the west side of Centre City Parkway, about 325 feet south of Brotherton Road. The two adjoining lots were undeveloped/vacant at the time of the site inspection. No item of environmental concern, such as stained soils, drums or other 1-gallon or larger containers were observed at this lot.

Historically, the property was part of agricultural fields, and a residence was observed towards the northeastern part of the property. By the 1974 aerial photograph, the property was no longer used for agriculture and the former residence had been demolished. No subsequent development at the subject property was found in the readily available historical records.

Below is the Assessment Summary, presenting recommended actions for the subject property:

ASSESSMENT SUMMARY TABLE			
Report Component	**Sections**	**Concern Noted or Reported**	**Recommended Actions**
Current Tenant of Property Use Concerns	2.2 & 2.3		No Further Action.
ASTs/USTs	2.3.2		No Further Action
Clarifier/Sump	2.3.2		No Further Action
Waste Management	2.3.3		No Further Action.
Asbestos Containing Material	2.3.5		No Further Action
Historical Use of Subject Property	3.0		No Further Action
Oil Field Area	4.3.4		No Further Action
Potential for Off-site Sources	4.1.2		No Further Action
State and Local Agency Concerns	4.2 & 4.3		No Further Action

1.0 INTRODUCTION

1.1 STATEMENT OF PURPOSE

This Phase I Environmental Site Assessment (ESA) was performed on the property issued San Diego County Assessor Parcel Nos. 238-130-35 and -36, located on the west side of S. Centre City Parkway, south of Brotherton Road in the City of Escondido, San Diego County, California.

This Phase I ESA has been prepared by (QA)2 Environmental for the sole use of Heritage Communities, Inc. and their lender. Heritage Communities, Inc. issued authorization for performance of this Phase I ESA to (QA)2 Environmental on May 5, 2005. The overall purpose of the assessment is to establish environmental conditions at the property based on information collected at the time of this investigation.

1.2 TERMS AND CONDITIONS

(QA)2 Environmental has prepared the following Phase I ESA in accordance with the American Society of Testing and Materials (ASTM) Method E 1527-00, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. No deviation from the ASTM recommended research methods occurred during this assessment.

1.3 SCOPE OF WORK

This Phase I ESA consisted of the following tasks:

- Performance of a site reconnaissance
- Description of the physical setting of the site
- Description of historical site conditions
- Review of environmental databases
- Review of regulatory agency records
- Preparation of a report summarizing our findings, conclusions, and recommendations

2.0 SITE DESCRIPTION

2.1 SITE LOCATION AND DESCRIPTION

This Phase I Environmental Site Assessment (ESA) was performed for two adjoining lots issued San Diego County Assessor Parcel No. 238-130-35 and -36, located on the west side of S. Centre City Parkway in the City of Escondido, San Diego County, California (Figure1). They will be referred to as the subject property or "property" for the remainder of this report. Each parcel is approximately 209 feet by 148 feet (about 0.72 acre). According to the City of Escondido Building Department, no addresses have been issued for these two lots. A copy of the Assessor's map is included in Appendix 1.

The subject property is located on the west side of Centre City Parkway, about 325 feet south of Brotherton Road. The subject property is located in a commercial zoned area. Adjoining properties have been developed with shopping centers/retail stores, restaurants, and a child care center. San Diego Gas & Electric (SDG&E) maintains an electrical substation at the adjoining property to the west (refer to Figure 2).

2.2 SITE INSPECTION

A visual site inspection was performed on May 13, 2005. Photographs of specific areas of interest are presented in Appendix 2. A map of the facility is provided in Figure 2.

At the time of the site inspection, the subject property consisted on a vacant/undeveloped lot. The overall lot was covered with vegetation/weeds. A storage trailer was observed towards the southeastern part of the property. According to Mr. Dean Welsh, realtor, this trailer is used by the property owner for storage of building material/tools. A small pile of construction material debris, including concrete, bricks and sand, was located towards the northwestern part of the lot. No litter was observed at the time of the site inspection. No item of environmental concern, such as stained soils, drums or other 1-gallon or larger containers were observed at this lot.

On the western property boundary, drainage channels were observed around the SDG&E substation.

2.3 SUMMARY OF SITE RECONNAISSANCE

2.3.1 Use of Hazardous Substances

No use of hazardous materials was observed at the property at the time of the site inspection.

2.3.2 Hazardous Substance Containers

Underground Storage Tanks
No visual evidence indicating current Underground Storage Tanks (USTs) was observed at the time of the site inspection. In addition, historical records review and the regulatory records review did not indicate evidence of past or present USTs on-site. However, note that based on the historical presence of a residence at the property (refer to Section 3.1), an associated septic system might have been present.

Above-Ground Storage Tanks
No above-grade tank was observed at the subject property at the time of the site inspection. In addition, review of historical records did not indicate the former presence of an AST on site.

Clarifier and Sump
No clarifier or sump was observed at the subject property at the time of the site inspection. In addition, review of historical records did not indicate the former presence of a clarifier or sump on site.

2.3.3 Waste Management and Disposal

The subject property being vacant, no generation of regulated waste was observed.

2.3.4 Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) are industrial chemicals widely used in industry for their heat transfer properties. These substances were used in electrical transformers, hydraulic fluids, as well as, electrical equipment such as fluorescent light ballasts. PCBs are stable compounds that persist in the environment after a spill or improper disposal. They have also been determined to be carcinogenic substances. However, since 1978, the use of PCBs has been prohibited in most products. All light ballasts manufactured since that time must state that they contain no PCBs. Fluorescent light tubes and ballasts must be disposed in accordance with local regulations.

No item suspect of containing PCBs was observed at the subject property.

2.3.5 Asbestos

Asbestos is a naturally occurring fibrous mineral that was extensively used in the past for its insulation qualities. Asbestos fibers can be found in thermal insulation, fire-proofing material, vinyl floor tiles, mastic, wallboard, ceiling tiles, roof penetration mastic, and numerous other

materials. After asbestos was determined to be carcinogenic, its use was severely restricted in the late 1970's. Building materials are classified as Asbestos Containing Material (ACM) if they contain greater than 1% asbestos. Such material is considered a hazardous material and must be properly disposed when removed.

No buildings or structures are located at the subject property and, therefore, no suspect ACM building materials were observed.

2.3.6 Wells

No groundwater wells were observed at the subject property at the time of the site visit.

2.3.7 Radon

Radon is an odorless, radioactive gas that occurs naturally in soil, rock, and building materials. It results from the natural radioactive decay of radium and uranium. In outdoor air, radon is generally diluted to such low concentrations that it is usually not of concern. In enclosed spaces such as homes or offices, and specially basements, radon can accumulate and pose an environmental concern. Indoor levels of radon depend on a building's construction and the concentration of radon in the underlying soil and rock.

According to the EPA publication "EPA's Map of Radon Zones, California," dated 1993, the subject property is located in a county with a predicted average radon concentration of less than 2.0 picoCuries per liter (pCi/l). The EPA has set a standard of 4.0 pCi/l as the concentration of radon at which corrective action is recommended. Based on the location of the Property, elevated levels of radon are not expected to be of concern.

2.3.8 Lead-Based Paint

Since no buildings are located on the subject property, no suspect lead-based paint is present.

2.3.9 Potential Mold Issue

Since no buildings are located on the subject property, potential for mold is not applicable.

2.3.10 Utilities

Utilities will be provided by the following municipality and companies:

- Electricity: SDG&E

- Gas: SDG&E
- Municipal Waste: Private Company
- Water: City of Escondido
- Sewer: City of Escondido

2.4 SURROUNDING LAND USES

A visual examination of the surrounding area was conducted on the same day as the site inspection. Observations of surrounding properties were limited to accessible public areas and areas that could be readily observed from the subject property.

North - To the north of the property is Woody's sports bar at 2329 S. Centre City Parkway.

South - To the south of the property is Kinder Care Leaning Center at 2415 Centre City Parkway. Further to the south is a shopping center at 2423 – 2449 Centre City Parkway. Tenants include, starting from the northern part of the center: Calvary Chapel (2423 Centre City Pkwy), Escondido Bridge Center (2427 Centre City Pkwy), Razmatazz (2431 Centre City Pkwy), Calvary Pre-school & Sunday school (2437 & 2435 Centre City Pkwy), Carson's Cleaners (2441 Centre City Pkwy), The Executive Barber Shop (2443 Centre City Pkwy), Southwest General Contractor (2445 Centre City Pkwy), Allstate Insurance (2447 Centre City Pkwy) and Calvary Chapel (2449 Centre City Pkwy).

West - To the west of the property is the SDG&E Felicita Substation. The substation also includes a drive-way immediately to the north of the subject property. Along the northern, southern and eastern parts of the substation are stormwater drainage channels. To the northwest is a vacant lot and to the southwest are condominium buildings.

East - To the east of the subject property, on the east side of Centre City Parkway, are Motel Mediterranean at 2336 Centre City Parkway and Canterbury Gifts at 2402 Centre City Parkway. To the northeast are Sunset Lounge at 2328 Centre City Parkway and an Arco Station at 2306 Centre City Parkway (southeast corner of Centre City Parkway & Brotherton Road). To the southeast are vacant lots and Elks Lodge (2430 Centre City Parkway).

An overview of the adjacent properties is provided in Figure 2.

2.5 INTERVIEW

For this Phase I ESA, an interview was conducted with Dean Welsh, Realtor. The interview process included the Transaction Screen Questionnaire in accordance with the ASTM excerpt E1528: *Standard Practice for Environmental Site Assessments, Transaction Screen Process.* A copy of the interview/site inspection form can be found in Appendix 3.

Mr. Welsh indicated that the storage container belongs to the owner of the property. Mr. Welsh did not have the keys to the locked container. He indicated that construction related materials are stored inside. No item of environmental concern was identified during the interview.

2.6 REGIONAL TOPOGRAPHY AND HYDROGEOLOGY

The subject property is located at an elevation of approximately 620 feet above mean sea level (msl), according to the Escondido, California USGS 7.5 minute topographic map. Surface topography in the immediate vicinity of the site gently slopes to the south-southwest. According to the Environmental Data Resources, Inc. (EDR) report, the area of the subject property is not located within a flood zone.

The site is located in an area historically dominated by alluvial stream depositions. The geologic setting consists of a moderate to deep Ramona Sandy Loam soil overlying bedrock. The site is underlain of undifferentiated granitic rock of the Southern California Bartholith.

Based on review of the San Diego Regional Water Quality Control Board (SDRWQCB) Water Quality Control Plan for the San Diego Region, the subject property lies within the Escondido Hydrologic Subarea of the Escondido Creek Hydrologic Area, within the Carlsbad Hydrological Unit. The groundwater in this area is classified for beneficial use.

Site specific groundwater information was provided on the State Water Resource Control Board (SWRCB) Geotracker website, for an Arco Station located at 2306 S. Centre City Parkway (or 2306 S. Escondido Boulevard). This Arco station is located about 400 feet to the northeast of the property, at the southeast corner of Centre City Parkway and Brotherton Road, as observed during the site inspection. The depth to groundwater, in wells installed as part of the investigations for this Arco station, was measured between about 15 and 35 feet below grade, with an east-southeasterly to southeasterly gradient.

2.7 WETLAND AREA

The subject property is not located in an area designated as wetlands per the National Wetland Inventory, according to the Environmental Data Resources, Inc. (EDR) report. Therefore, at this time, regulations pertaining to wetlands do not appear to impact the subject property.

3.0 HISTORICAL INFORMATION

A review of historical information was performed to identify past uses of the site and adjacent properties that may pose environmental concern. The following sources of information were reviewed during the course of this investigation:

- Aerial Photographs
- Topographic Maps
- Sanborn Maps
- City of Escondido Building and Safety Department
- City Directories
- Former Environmental Reports

3.1 AERIAL PHOTOGRAPH REVIEW

Aerial photographs are a recommended source of historical research for a Phase I ESA. The general type of activity and land use can often be discerned from the type and layout of structures visible in an aerial photograph; however, specific elements of a site operation cannot normally be determined from the photographs. With this in mind, (QA)2 Environmental reviewed historical aerial photographs obtained from EDR. Aerial photographs were available from 1946 to 2002, and are summarized below.

YEAR/ SOURCE	SCALE	COMMENTS
1946 Jack Amman	1" = 655 ft	The general area is used for agriculture. Escondido Boulevard (currently named Centre City Parkway) had been constructed. The subject property is part of cultivated fields. No structure was observed at the subject property. A small stream appeared to be crossing the property in a west-east direction. All adjoining properties consisted of cultivated fields or orchards, with a few farm houses.
1953 Park	1" = 555 ft	Highway 395 had been constructed within the same alignment as Escondido Boulevard. Subject Property: The subject property is part of agricultural fields, and an apparent residence was observed towards the northeastern part of the property. No other significant changes were observed at the property. Adjoining Properties: No significant changes were observed on the

YEAR/ SOURCE	SCALE	COMMENTS
		adjoining properties used either as cultivated fields or as orchards.
1963 Cartwright	1" = 555 ft	Some areas are being urbanized, in the general area of the subject property. Subject Property: No significant changes were observed at the subject property: cultivated field with a residence towards the northeastern portion, and a stream crossing the property. Adjoining Areas: North: Cultivated fields South: Orchards East: On the east side of Centre City Parkway (south of Brotherton Rd) were a few commercial buildings and orchards. West: Cultivated fields and further to the west were residences.
1974 AMI	1" = 600 ft	The general area is being developed. Subject Property: The subject property was no longer observed as a cultivated field. It was as a graded/undeveloped lot. The stream was no longer observed at the subject property, as it appeared to have been diverted in the immediate area. Adjoining Areas: North: One commercial building; area no longer used for agriculture. South: Orchards East: Commercial development was observed on the east side of Centre City Parkway. A gasoline station was observed to the northeast (current Arco Station at 2306 Centre City Parkway, southeast corner of Centre City Parkway and Brotherton Road). West: Apparent SDG&E substation to the west and residences further to the west..
1989 USGS	1" = 666 ft	The general area was observed as urbanized. Subject Property: No changes were observed at the subject property (i.e. undeveloped lot). Adjoining Areas: North: Commercial building. South: The current commercial building at 2415 Centre City Pkwy and the Shopping Center at 2423 – 2449 Centre City Pkwy had been constructed. The current condominium complex had been constructed to the southwest. East: Commercial buildings on the east side of Centre City Pkwy. The gas station was observed to the northeast, at the

YEAR/ SOURCE	SCALE	COMMENTS
		southeast corner of Brotherton Road and Centre City Parkway. West: SDG&E substation and residences further to the west.
1995 USGS 2002 USGS	1" = 666 ft 1" = 666 ft	No significant changes were observed at the subject and surrounding areas.

The review of the aerial photographs indicated that the general area of the subject property was used for agriculture prior to development starting in the 1960s – 1980s. Of environmental significance, a gasoline station was observed to the northeast, at the southeast corner of Brotherton Road and Centre City Parkway (since the 1974 photograph). Subject Property: The property was part of agricultural fields, with a residence towards the northeastern part. A stream was observed crossing the property in a west to east direction. The stream was apparently diverted prior to 1974, when the property had been graded and no longer used for agriculture, and the adjoining SDG&E electrical substation had been constructed. Since the 1974 photograph, the subject property was observed as a vacant/undeveloped lot.

3.2 TOPOGRAPHIC MAPS

(QA)2 Environmental reviewed available historic USGS Topographic Quadrangle Maps for information regarding past uses of the Property. The following USGS topographical maps were obtained from EDR:

- 1949, Escondido, California Quadrangle, Scale: 1 : 24,000
- 1968, Escondido, California Quadrangle, Scale: 1 : 24,000
- 1968, Photorevised 1975, Escondido, California Quadrangle, Scale: 1 : 24,000
- 1996, Escondido, California Quadrangle, Scale: 1 : 24,000

The subject property was indicated as undeveloped on the 1949 to 1975 topographic maps. Highway 395 was indicated to the east on the 1949 map, subsequently named Escondido Boulevard and Centre City Parkway. On the 1968 and 1975 topographic maps, areas to the west and northwest were indicated as developed, and several structures were indicated to the east, east of Highway 395.

On the 1996 topographic map, the overall area was indicated as highly developed, with no detail illustrated. Former Highway 395 was named Centre City Parkway, and Freeway 15 was indicated on this map.

A portion of the current Topographic Map is provided in Figure 1.

3.3 SANBORN MAPS

The Sanborn Mapping and Geographic Information Service began producing maps of industrial areas across the country for fire insurance purposes since the 1860's. These maps detail property use, construction of buildings, and related fire risks. The Sanborn archives were searched by EDR, however, no maps were found for this area.

3.4 CITY OF ESCONDIDO

(QA)2 Environmental requested to review building permits for the subject properties at the City of Escondido Building and Safety Department. Staff indicated that no addresses have been issued for the two subject lots (APNs 238-130-35 & -36), and thus no permit has been issued for the subject property.

3.5 CITY DIRECTORIES

Research regarding the availability of historical city directories was obtained from Environmental Data Resources, Inc (EDR). Directories (as available) were reviewed between 1922 through 2000. According to performed research, the adjoining property to the north has been issued address on 2329 S. Centre City Parkway (or formerly 2329 S. Escondido Boulevard), and the adjoining property to the south has been issued address of 2415 S. Centre City Parkway. No listing was found for any address between the ones issued for the adjoining property to the north and to the south.

The Arco station to the northeast, at 2306 S. Centre City Parkway (or 2306 S. Escondido Boulevard) was listed since the 1965 directory.

3.6 REVIEW OF FORMER ENVIRONMENTAL REPORT

No former Phase I Environmental Site Assessment Report was provided to (QA)2 Environmental for review.

3.7 HISTORICAL USE SUMMARY

The review of the historical records indicated that the general area of the subject property was used for agriculture prior to development starting in the 1960s – 1980s. Of environmental significance, a gasoline station (current Arco Station at 2306 Centre City Pkwy or 2306 S. Escondido Blvd.) has been located to the northeast of the subject property, at the southeast corner of Centre City Pkwy and Brotherton Road, since the mid 1960s. The adjoining property to the west was observed as an electrical substation since the 1974 aerial photograph.

Subject Property: The property was part of agricultural fields, with a residence towards the northeastern part. A stream was observed crossing the property in a west to east direction. The stream was apparently diverted prior to 1974, when the property had been graded and no longer used for agriculture, and the adjoining SDG&E electrical substation had been constructed. Since the 1974 photograph, the subject property was observed as a vacant/undeveloped lot.

4.0 RECORDS REVIEW

Selected agencies were consulted, seeking relevant and accessible records of hazardous materials usage or of recent hazardous materials incidents in the property area. Entities consulted or records reviewed included:

- State and Federal ASTM Database
- County of San Diego – Department of Environmental Health
- California Regional Water Quality Control Board, San Diego Region
- California EPA – Department of Toxic Substances Control
- San Diego County Air Pollution Control District
- State of California, Division of Oil and Gas

4.1 REGULATORY DATABASE REVIEW

Various federal and state regulations require that government agencies maintain records of environmental permits, records of properties known to be impacted by regulated compounds, and records of properties under investigation by the government for alleged violations of hazardous material regulations. Environmental Data Resources, Inc. (EDR), a specialized research firm, was contracted to provide electronic search of these data files. The complete EDR report, including a summary table is provided in Appendix 4.

4.1.1 Subject Property

The subject property was not listed on any database searched by EDR.

4.1.2 Adjacent Sites

Typically, groundwater would represent the migration medium for contaminants over significant distances. Surrounding sites with known environmental conditions are typically of concern to the subject property when they are located in an up-gradient direction with respect to groundwater flow. Sites that are located in cross-gradient or down-gradient directions are not likely to adversely impact the subject property.

Groundwater flow direction in the area of the subject property is to the east-southeast to southeast. Sites that are generally located to the northwest of the subject property would be at an upgradient location with respect to groundwater flow and could potentially affect the subject property.

The following sites are within a ⅛ of a mile (i.e. approximately 650 feet) from the subject property and were identified on the EDR report.

Arco #1020, Blue Ribbon Investment, David Tollison, 2306 S. Escondido Blvd., Escondido. This site is located about 400 feet to the northeast of the subject property, at the southeast corner of Centre City Pkwy and Brotherton Road, as observed during the site inspection. It was listed on the Underground Storage Tank (UST) and Leaking UST database. A gasoline leak was reported in 1987. According to the information provided in the EDR report and on the State Water Resources Control Board (SWRCB) Geotracker website (www.geotracker.swrcb.ca.gov), the groundwater has been affected by this release. Up to 1.65 feet of free product has been measured at this Arco station. Fifteen groundwater monitoring wells have been installed as part of the investigations, on and off the Arco station site. Based on the information provided on the Geotracker database, groundwater depth has been measured at about 16 to 35 feet below grade, with an east-southeasterly direction to southeasterly direction (south of the station). Groundwater and soil remediation are implemented at this site. One groundwater monitoring well has been placed within Centre City Parkway, west of the Arco Station. The groundwater data for this well (closest well to the subject property), as presented for 2001 through 2004, indicated only very low concentrations of gasoline compounds, detected occasionally. All measured concentrations were below their respective Maximum Contaminant Level (MCL, i.e. drinking water standard). Maximum measured concentrations included benzene at 0.62 µg/L (MCL of 1 µg/L), toluene at 1.2 µg/L (MCL of 150 µg/L), methyl tertiary butyl ether (MTBE) at 2.06 µg/L (MCL of 13 µg/L), and total xylenes at 2.5 µg/L (MCL of 1,750 µg/L). This site was also listed on the Haznet database for the generation of regulated waste. Based on the analytical data provided on the Geotracker database, and the cross-gradient location with respect to groundwater flow, it appears unlikely that this site would have affected the subject property.

The following sites within 650 feet from the subject property were listed on the small quantity generators of hazardous waste database (i.e. generating less than 1000 Kg of hazardous waste per month), the Haznet database (i.e. shipment of waste under the hazardous waste manifest system). These sites were also listed on the San Diego County HMMD database for storage and use of hazardous materials and generation of hazardous waste only.

- Carson Cleaners, 2441 Centre City Parkway, Escondido. Note that this site is located about 300 feet south of the subject property, as observed during the site inspection, and not to the north as indicated in the EDR report.

Based on type of listing and type of reported violations (if any), it is unlikely that these sites would have affected the subject property.

Other Sites:
Other sites have been reported by EDR, however, due to distance, location with respect to groundwater flow, depth of the groundwater, and type of contamination found (if applicable), there is a low likelihood for these sites to have impacted the subject property. .

Unmapped Sites:
Unmapped sites were included in the EDR report. However, they do not appear to be located in the vicinity of the property.

4.2 CITY AND COUNTY AGENCY RECORDS

4.2.1 County of San Diego Department of Environmental Health

The County of San Diego Department of Environmental Health, (DEH) Hazardous Materials Management Division was contacted to inquire about any records for the subject property. This agency is the local agency regulating the use of underground storage tanks, use of hazardous materials and generation of hazardous waste within the area of the subject property. The DEH keeps records of the sites with respect to the street address. As no address is assigned to the subject property, no record was accessed.

4.2.2 County of San Diego Air Pollution Control District

The San Diego Air Pollution Control District (SDAPCD) regulates the air quality in San Diego County. The SDAPCD was contacted to determine whether air discharge permits or other types of permits had been issued for the subject property. The SDAPCD keeps records of the sites with respect to the street address. As no address is assigned to the subject property, no record was accessed.

4.3 STATE AGENCY RECORDS

4.3.1 California Regional Water Quality Control Board

The subject property is within the boundaries and jurisdiction of the San Diego Regional Water Quality Control Board (SARWQCB). The SARWQCB was contacted to determine whether the subject property had any discharge permit or had been investigated with regard to potential violations. The SARWQCB keeps records of the sites with respect to the street address. As no address is assigned to the subject property, no record was accessed

4.3.2 California EPA – Department of Toxic Substances Control

The California EPA - Department of Toxic Substances Control (DTSC) was contacted to determine whether the property had any hazardous waste permits or had been investigated by the DTSC. The DTSC keeps records of the sites with respect to the street address. As no address is assigned to the subject property, no record was accessed.

4.3.3 State of California Division of Oil and Gas

Numerous areas of Southern California produce oil and gas from commercially viable fields. Over the past century, large numbers of commercial development and wildcat exploration wells have been drilled throughout the area. Improperly drilled or abandoned wells present potential hazards from gas seeps and other concerns may exist due to hazardous material handling during well construction.

The California Department of Conservation, Division of Oil, Gas & Geothermal Resource, Oil & Gas Maps, internet web-site was researched (www.consrv.ca.gov) to determine if petroleum exploration activities had occurred in the vicinity of the property. The subject property is not located within a known oil field and no wells or dry holes were identified at the subject property or in the vicinity of the property.

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY

(QA)2 Environmental has performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM E1527.00 of the subject property located on the west side of Centre City Pkwy, about 325 feet south of Brotherton Road (APNs 238-130-35 & -36) in the City of Escondido, San Diego County, California. Any exceptions to, or deletion from, this practice were described in Section 1 of this report.

- The subject property is located on the west side of Centre City Parkway, south of Brotherton Road. The subject property is located in a commercial zoned area. Adjoining properties have been developed with shopping centers/retail stores, restaurants, and a child care center. San Diego Gas & Electric (SDG&E) maintains an electrical substation at the adjoining property to the west.

- The review of the historical records indicated that the general area of the subject property was used for agriculture prior to development starting in the 1960s – 1980s. Of environmental significance, a gasoline station (current Arco Station at 2306 Centre City Pkwy or 2306 S. Escondido Blvd.) has been located to the northeast of the subject property, at the southeast corner of Centre City Pkwy and Brotherton Road, since the mid 1960s. The adjoining property to the west was observed as an electrical substation since the 1974 aerial photograph.

  Subject Property: The property was part of agricultural fields, with a residence towards the northeastern part. A stream was observed crossing the property in a west to east direction. The stream was apparently diverted prior to 1974, when the property had been graded and no longer used for agriculture, and the adjoining SDG&E electrical substation had been constructed. Since the 1974 photograph, the subject property was observed as a vacant/undeveloped lot.

- At the time of the site inspection, the subject property consisted of a vacant/undeveloped lot. A small pile of construction material debris, including concrete, bricks and sand, was located towards the northwestern part of the lot. No item of environmental concern, such as stained soils, drums or other 1-gallon or larger containers were observed at this lot. On the western property boundary, drainage channels were observed around the SDG&E substation

- No use of hazardous materials or generation of regulated waste was observed at the property at the time of the site inspection.

- No indication of underground storage tank, above-grade storage tank sump or clarifier was observed at the subject property or in the reviewed documents. However, note that based on the historical presence of a residence at the property, an associated septic system might have been present.

- Based on the environmental records reviewed during this investigation, as reported by Environmental Data Resources, Inc., (EDR) it is unlikely that the subject property has been affected by activities and/or releases of hazardous substances from offsite sources or surrounding properties.

5.2 CONCLUSIONS AND RECOMMENDATIONS

(QA)2 Environmental has performed a Phase I Environmental Site Assessment for the subject property located on the west side of Centre City Pkwy, about 325 feet south of Brotherton Road (APNs 238-130-35 & -36) in the City of Escondido, San Diego County, California. The term "*recognized environmental condition*" (REC) is defined by ASTM as the "presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property". '*Historical recognized environmental condition*' is defined by ASTM as "environmental condition which in the past would have been considered a *recognized environmental condition*, but which may or may not be considered a *recognized environmental condition* currently."

This assessment has revealed no evidence classified as *recognized environmental condition* or *historical recognized environmental condition* by the ASTM guideline 1527-00, associated with the subject property. No further action is needed at this time.

6.0 LIMITATIONS

(QA)2 Environmental has prepared this Phase I Environmental Site Assessment using reasonable efforts in each phase of its work to identify recognized environmental conditions associated with hazardous substances, wastes, and petroleum products at the Property. The methodology of this Phase I Environmental Site Assessment was consistent with the ASTM Standard Practice for E 1527. Findings within this report are based on information collected from observations made on the day of the site investigation and from reasonably ascertainable information obtained from governing public agencies and private sources.

This report is not definitive and should not be assumed to be a complete or specific definition of the conditions above or below grade. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation, or other construction purposes. (QA)2 Environmental makes no representation or warranty that the past or current operations at the Property are or have been in compliance with all applicable federal, state and local laws, regulations and codes. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

The regulatory database report provided is based on an evaluation of the data collected and compiled by a contracted data research company. The report focuses on the Property and neighboring properties that could impact the subject property. Neighboring properties listed in governmental environmental records are identified within specific search distances. The search distance varies depending upon the particular government record being checked. The regulatory research is designed to meet the requirements of ASTM Standard E 1527. The information provided in the regulatory database report is assumed to be correct and complete.

Subsurface conditions may differ from the conditions implied by the surface observations and can only be reliably evaluated through intrusive techniques.

Reasonable efforts have been made during this assessment of aboveground and underground storage tanks and ancillary equipment. "Reasonable efforts" are limited to information gained from visual observation of largely unobstructed areas, recorded database information held in public record, and available information gathered from interviews. Such methods may not identify subsurface equipment that may have been hidden from view due to paving, construction or debris pile storage, or incorrect information from sources.

7.0 REFERENCES

California, State of, Environmental Protection Agency, Department of Toxic Substances Control, Cypress, California, correspondence, May 2005.

Environmental Data Resources, Inc., Southport, Connecticut, The EDR Radius Map with Geocheck report, Inquiry No. 1416822.1r, May 6, 2005.

Environmental Data Resources, Inc., Southport, Connecticut, Sanborn Map report, Inquiry No. 1416813.3s, May 6, 2005.

Environmental Data Resources, Inc., Southport, Connecticut, EDR Aerial Photography Print Service, Inquiry No. 1416813.5, May 9, 2005.

Environmental Data Resources, Inc., Southport, Connecticut, EDR Topographic Map Report, Inquiry No. 1416813.4, May 9, 2005.

Environmental Data Resources, Inc., Southport, Connecticut, EDR Historical City Directory Report, Inquiry No. 1416813.7, May 9, 2005.

Escondido, City of, Building Department, records review, May 13, 2005.

Regional Water Quality Control Board, San Diego Region, correspondence, May 2005.

San Diego, County of, Department of Environmental Health – Hazardous Materials Division, correspondence, May 2005.

San Diego Air Pollution Control District, correspondence, May 2005.

8.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

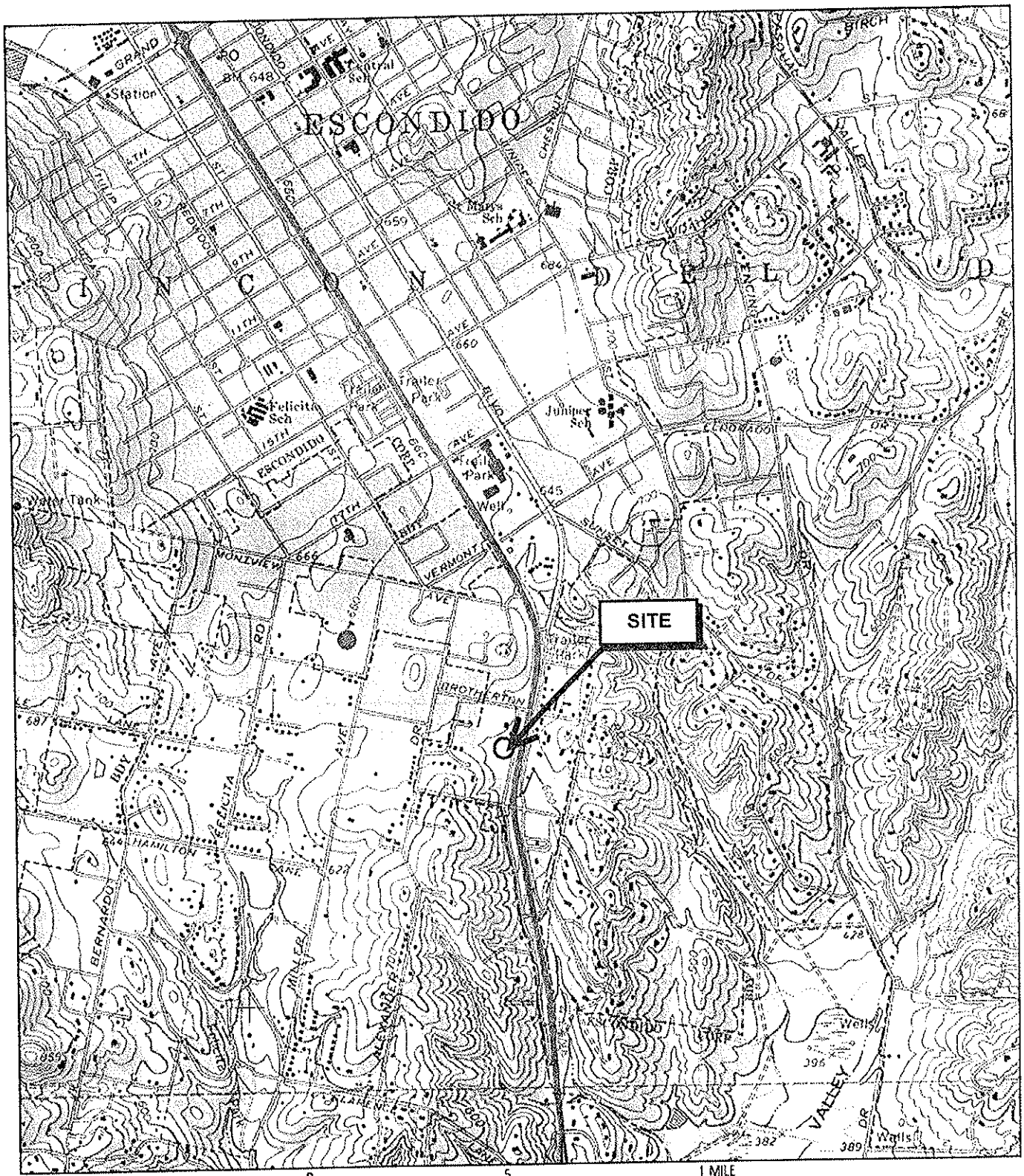
This work was performed under the supervision of Ms. Carole Missirlian. The site inspector and principal report author was Ms. Carole Missirlian, P.E. Ms. Missirlian has 18 years of experience, including performing hundreds of Phase I Environmental Site Assessments, Environmental Transaction Screen reports, and similar environmental assessments. Ms. Missirlian's experience also includes investigations, remediation and closure of contaminated properties, including underground storage tank leak cases, and closure of RCRA permitted facilities

APPENDIX 1

FIGURES & MAPS

County Assessor Map

FIGURES



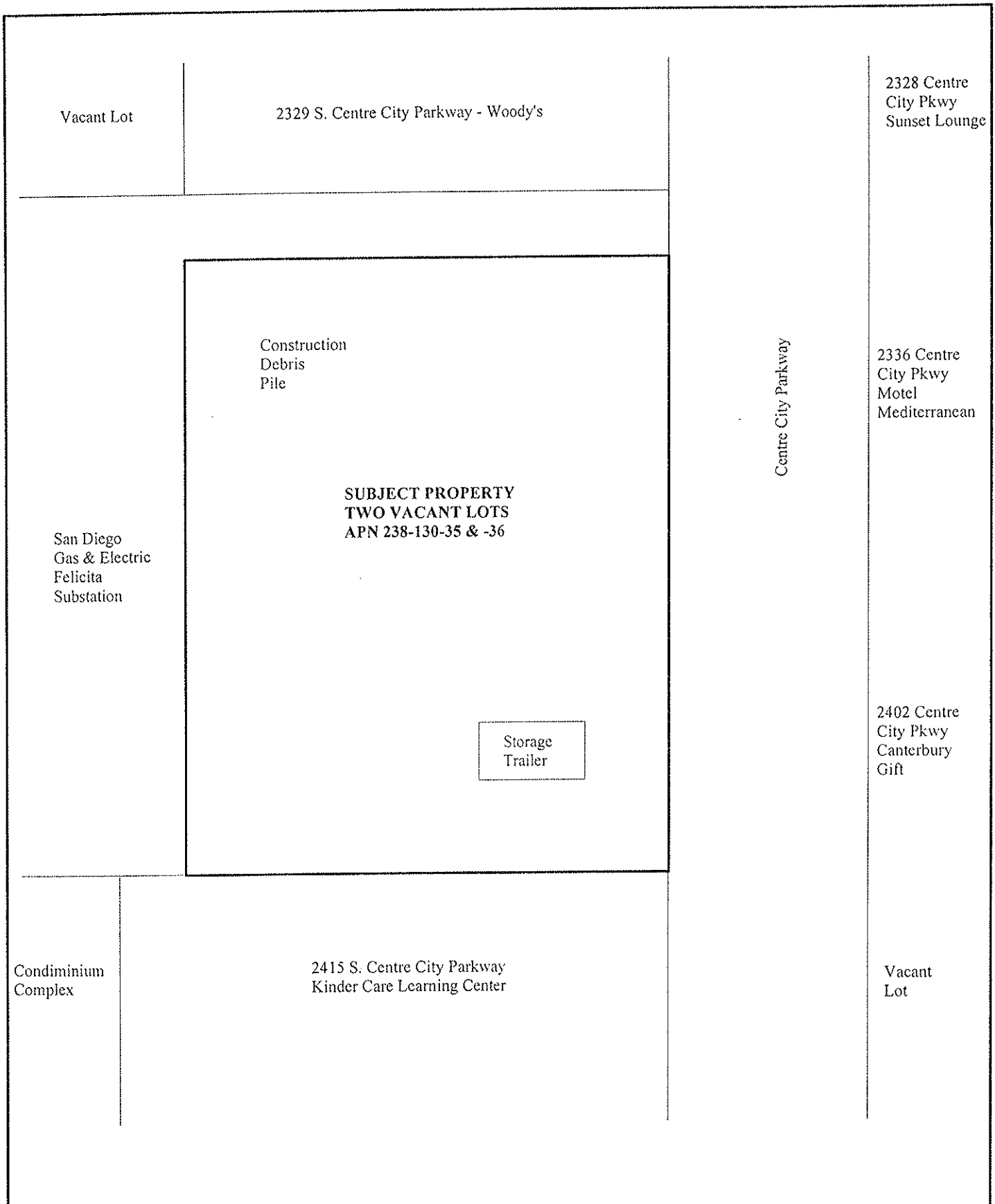
Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

Source:
USGS Topo Map
Escondido Quadrangle

N

Figure 1 - Site Location Map
West Side of S. Centre City Pkwy
APNs 238-130-35 & -36
Escondido, California

(QA)2 ENVIRONMENTAL
18330 Blackhawk Street, Northridge, California 91326
Tel: (818) 831-9221, Fax: (818)831-6993



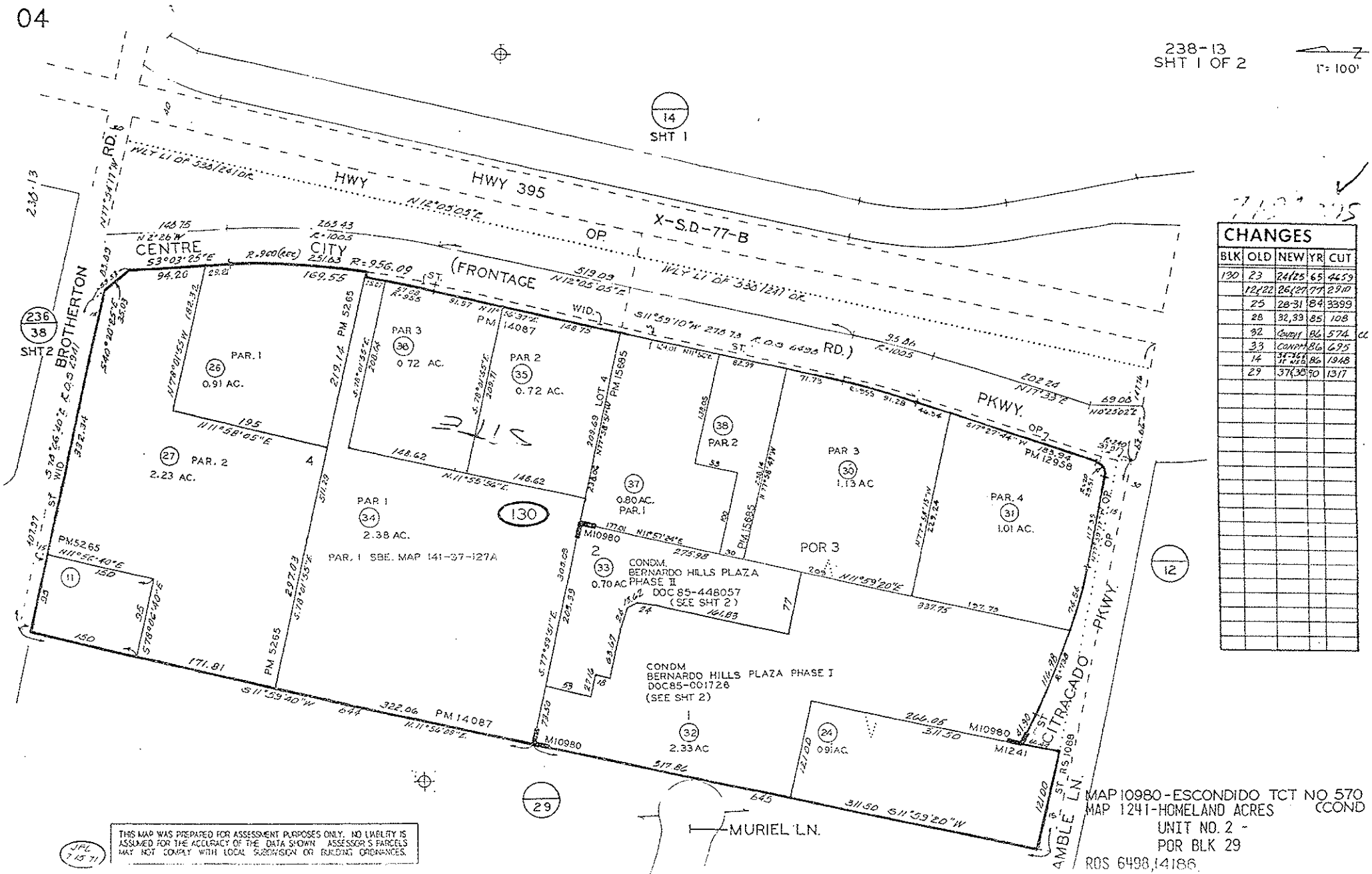
Not to Scale	N	**Figure 2 - Site and Vicinity Map** **Centre City Pkwy & Brotherton Rd** **APNs 238-130-35 & -36** **Escondido, California**	**(QA)2 ENVIRONMENTAL** 18330 Blackhawk Street, Northridge, California 91326

ASSESSOR'S MAP

04

238-13
SHT 1 OF 2

1" = 100'



CHANGES				
BLK	OLD	NEW	YR	CUT
130	23	24/25	65	4459
	12/22	26/27/77		2910
	25	28-31	84	3399
	28	32,33	85	108
	32	CONFM	86	574 CC
	33	CONFM	86	695
	14	34-36 ET AL	86	1948
	29	37/38	90	1317

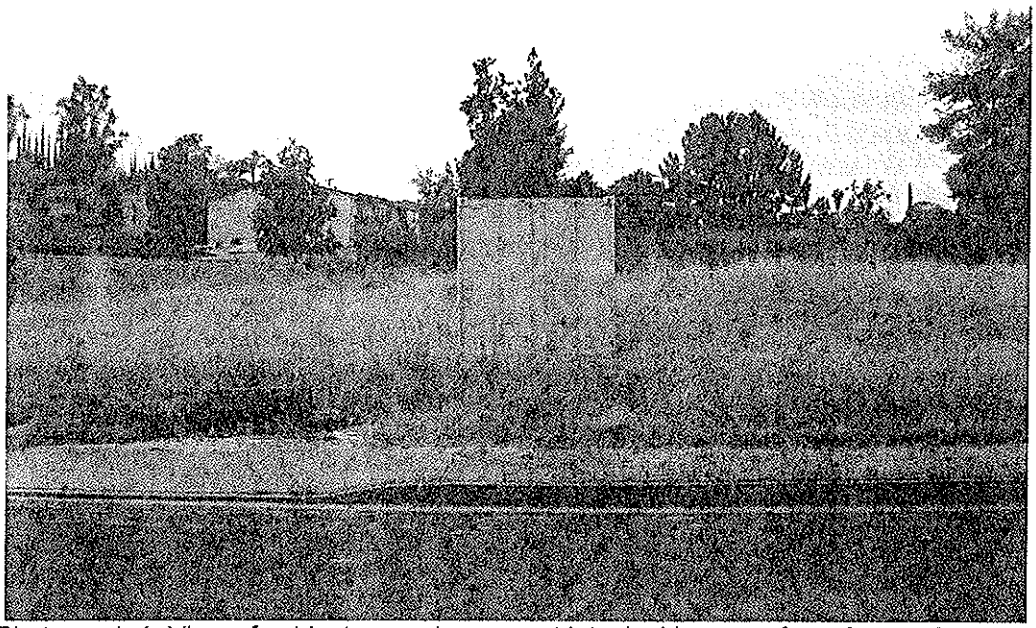
MAP 10980-ESCONDIDO TCT NO 570 CCOND
MAP 1241-HOMELAND ACRES
UNIT NO. 2 -
POR BLK 29
ROS 6498, 14186

JFL 7 15 71

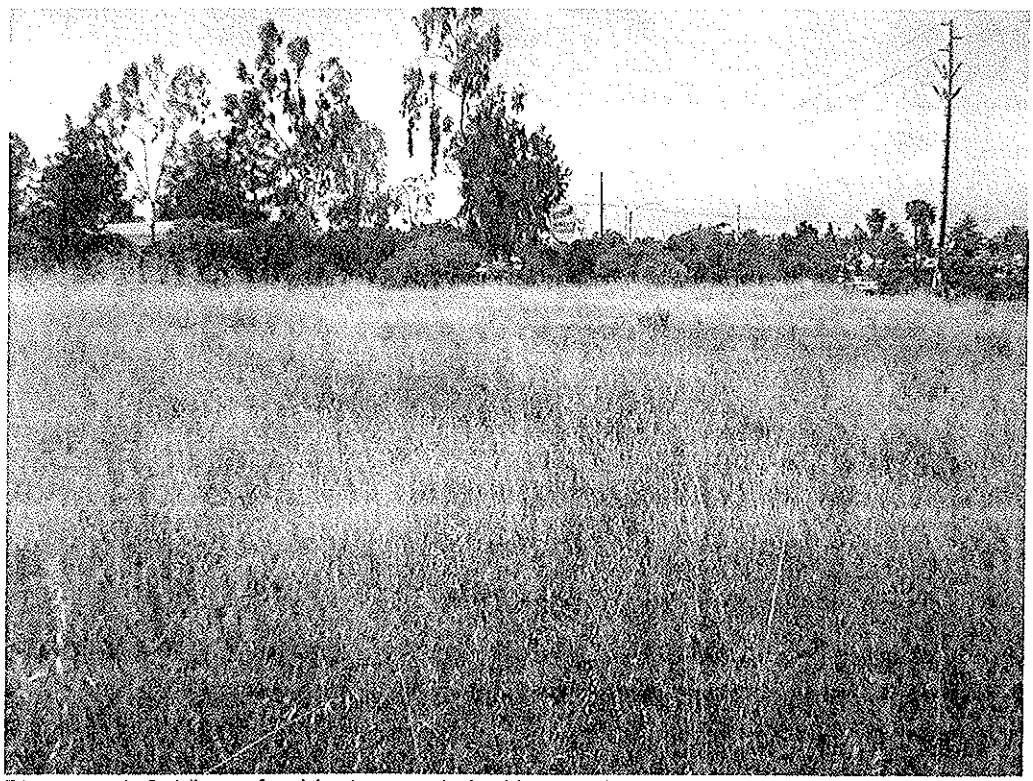
THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES.

APPENDIX 2

PHOTOGRAPHS

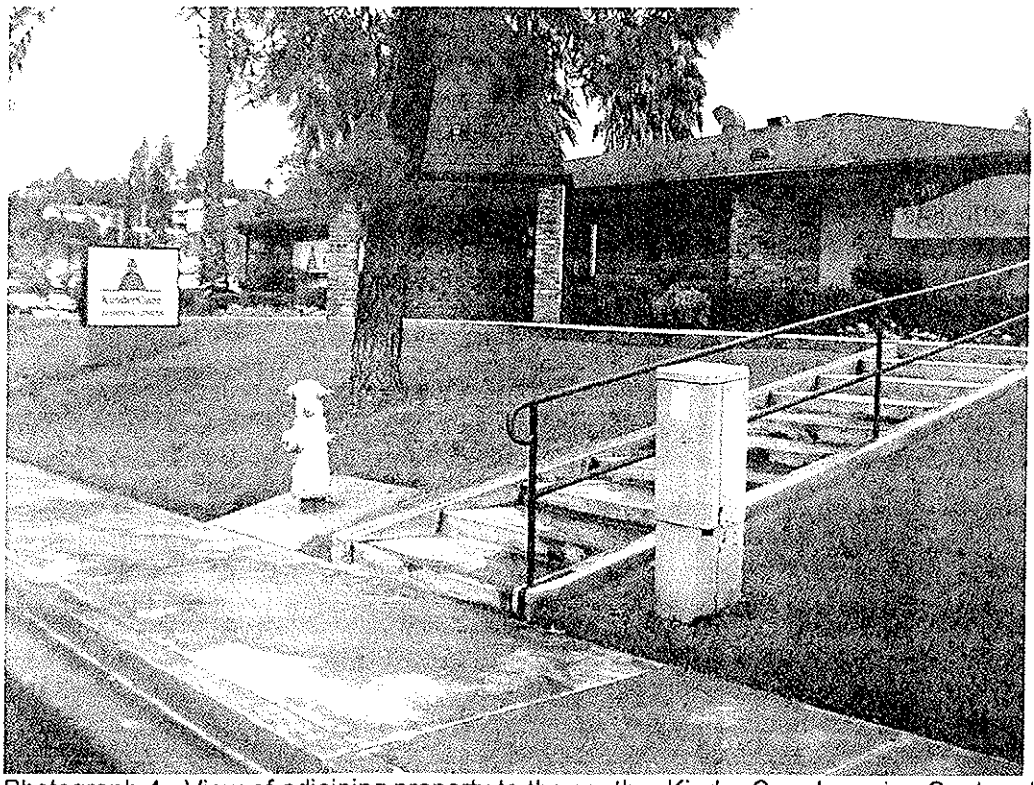


Photograph 1: View of subject property – vacant lots, looking west from Centre City Parkway.

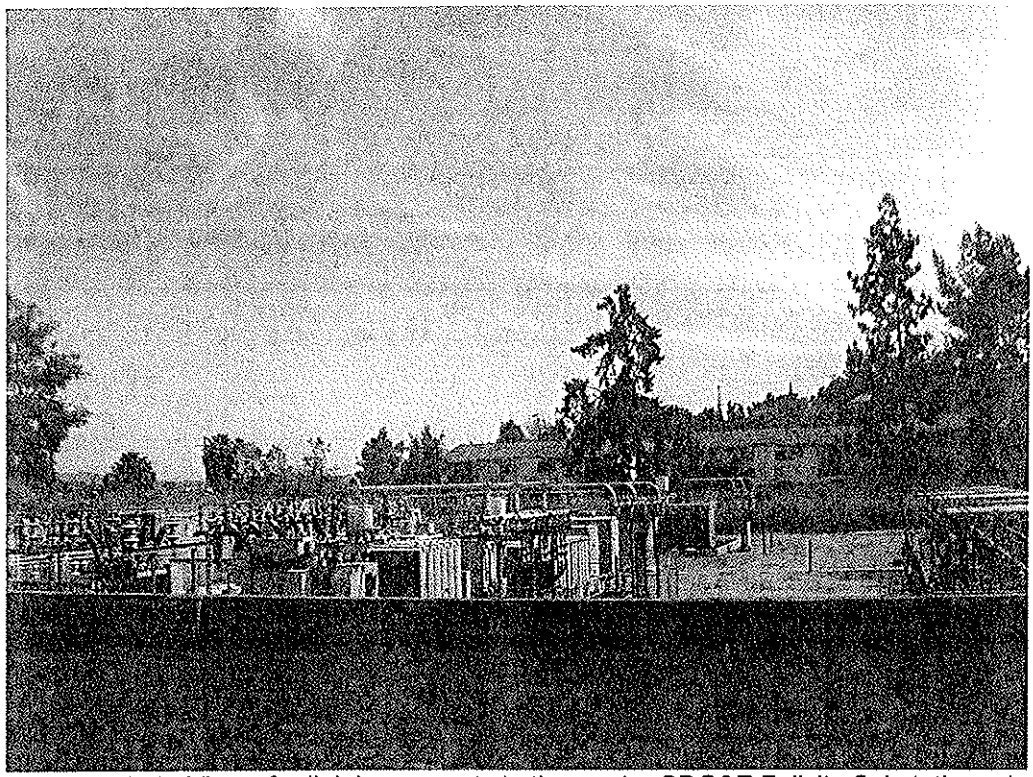


Photograph 2: View of subject property looking north.

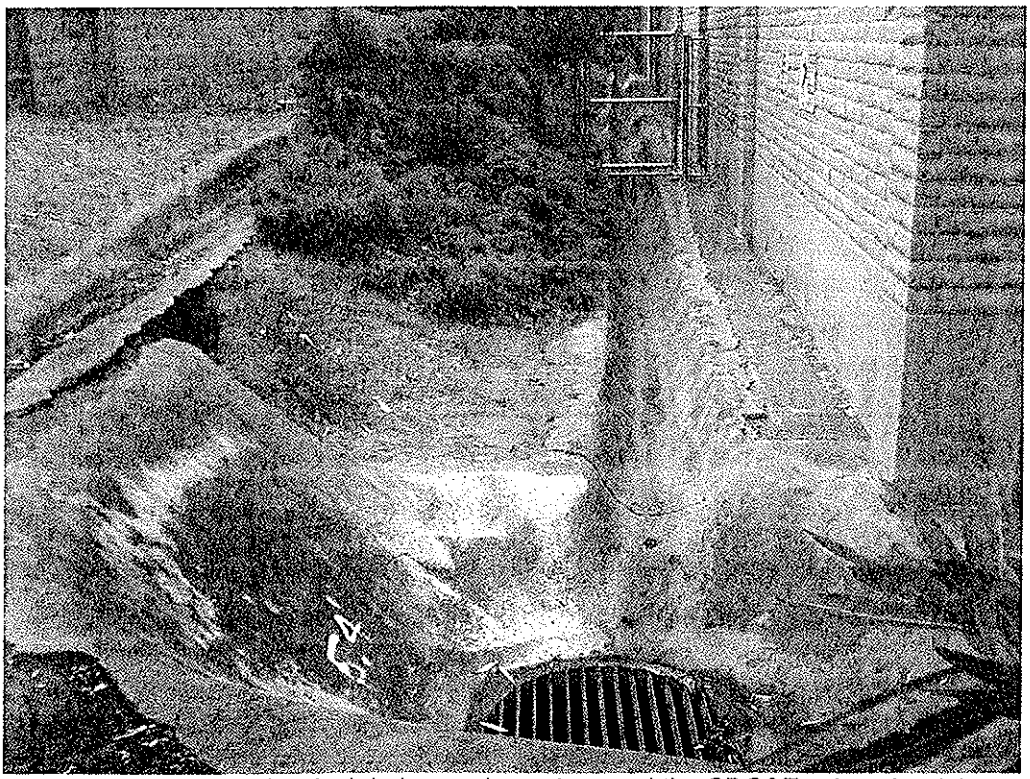
Photograph 3: View of construction debris pile towards the northwestern part of the property.



Photograph 4: View of adjoining property to the south – Kinder Care Learning Center at 2415 S. Centre City Parkway



Photograph 5: View of adjoining property to the west – SDG&E Felicita Substation, photo taken looking south.



Photograph 6: View of typical drainage channel around the SDG&E substation (photo taken looking west).

APPENDIX 3

INTERVIEW/SITE INSPECTION FORM

ENVIRONMENTAL SITE ASSESSMENT
TRANSACTION SCREEN QUESTIONNAIRE

his document is an excerpt of Practice E 1528-00: Standard Practice for Environmental Site Assessments: Transaction Screen rocess, which is under the jurisdiction of ASTM Committee E-50 on Environmental Assessment and is the direct responsibility f Subcommittee E 50.02 on Commercial Real Estate Transactions. This questionnaire represents only Sections 5 and 6 of Practice 1528-00 and should not be construed as being the complete standard. It is necessary to refer to the full standard prior to using is questionnaire. COPYRIGHT© 2000 AMERICAN SOCIETY FOR TESTING AND MATERIALS, West Conshohocken, A. Prior edition copyrighted 1996. Stock #: ADJE1528. For the complete standard, or to order additional copies of this uestionnaire, contact ASTM Customer Service at (610) 832-9585.

. Introduction to Transaction Screen Questionnaire

1 *Process*—The *transaction screen process* consists of asking questions ntained within the *transaction screen questionnaire* of *owners* and *occupants* the *property*, observing site conditions at the *property* with direction provided the *transaction screen questionnaire*, and, to the extent *reasonably scertainable*, conducting limited research regarding certain *government records* d certain *standard historical sources*. The questions asked of *owners* are the me questions as those asked of *occupants*.

2 *Guide*—The *transaction screen questionnaire* is followed by a guide lesigned to assist the person completing the *transaction screen questionnaire*. The guide to the *transaction screen questionnaire* is set out in Sections 7-10 of is practice. The guide is divided into three sections: Guide for Owner/Occupant quiry, Guide to Site Visit, and Guide to Government Records/Historical ources Inquiry.

5.2.1 To assist the *user*, its employee or agent, or the *environmental professional* preparing a report, the guide repeats each of the questions set out in the *ansaction screen questionnaire* in both the guide for *owner/occupant inquiry* id the guide to *site visit*. The questions regarding *government records/historical sources inquiry* are also repeated in the guide to that section.

2.2 The guide also describes the procedures to be followed to determine if liance upon the information in a prior *environmental site assessment* is ppropriate under this practice.

5.2.3 A *user*, his employee or agent, or *environmental professional* conducting he *transaction screen process* should not use the *transaction screen questionire* without reference to, or familiarity from prior usage with, the guide.

.3 *User and Preparer*—The *user* conducting the *transaction screen process* is ne party seeking to perform *appropriate inquiry* with respect to the *property*. The *user* may delegate the preparation of the *transaction screen questionnaire* to employee or agent of the *user* or may contract with a third party to prepare the uestionnaire on behalf of the *user*. The person preparing the questionnaire is the *reparer*, who may be either the *user* or the person to whom the *user* has delegated the preparation of the *transaction screen questionnaire*.

.4 *Exercise of Care*— The *preparer* conducting the transaction screen process ould use good faith efforts in determining answers to the questions set forth in e transaction screen questionnaire. The *user* should take time and care to check hatever records are in the user's possession. The *preparer* should ask all persons to whom questions are directed to give answers to the best of the espondent's knowledge. As required by Section 9601(35)(B) of CERCLA, the ser or *preparer* should discuss with a responsible person in authority in the ser's organization (if any) any specialized knowledge or experience relating to *azardous substances* on the *property* and the *preparer* should understand such information.

.5 *Knowledge*—The owner or occupant of the *property* to which portions of the ransaction screen questionnaire are directed should have sufficient knowledge nd experience with respect to the property or in the owner's or occupant's particular business to understand the purpose and use of the transaction screen uestionnaire. All answers should be given to the best of the owner's or ccupant's actual knowledge.

5.1 While the person conducting the *transaction screen process* has an obligation to ask the questions set forth in the *transaction screen questionnaire*, n many instances the parties to whom the questions are addressed will have no bligation to answer them. The *user* is only required to obtain information to the xtent it is *reasonably ascertainable*.

5.2 If the preparer asks the questions set forth in the *transaction screen questionnaire*, but does not receive any response or receives partial responses, the uestions will be deemed to have been answered provided the questions have een asked, or were attempted to be asked, in person or by telephone and written ecords have been kept of the person to whom the questions were addressed and their responses, or the questions have been asked in writing sent by certified or registered mail, return receipt requested, postage prepaid, or by private, commercial overnight carrier and no responses have been obtained after at least two follow-up telephone calls were made or written request was sent again asking for responses.

5.3 The *transaction screen questionnaire* and the *transaction screen guide* sometimes include the phrase "to the best of your knowledge." Use of this phrase shall not be interpreted as imposing a constructive knowledge standard when it is not included or as imposing anything other than an *actual knowledge* standard for the person answering the questions, regardless of whether it is used. It is sometimes included as an assurance to the person being questioned that he or she is not obligated to search out information he or she does not currently have in order to answer the particular question.

5.6 *Conclusions Regarding Affirmative or Unknown Answers*—If any of the questions set forth in the transaction screen questionnaire are answered in the affirmative, the user must document the reason for the affirmative answer. If any of the questions are not answered or the answer is unknown, the user should document such nonresponse or answer of unknown and evaluate it in light of the other information obtained in the transaction screen process, including, in particular, the *site visit* and the government records/historical sources inquiry. If the *user* decides no further inquiry is warranted after receiving no response, an answer of unknown or an affirmative answer, the *user* must document the reasons for any such conclusion

5.6.1 Upon obtaining an affirmative answer, an answer of unknown or no response, the *user* should first refer to the guide. The guide may provide sufficient explanation to allow a *user* to conclude that no further inquiry is appropriate with respect to the particular question.

5.6.2 If the guide to a particular question does not, in itself, permit a *user* to conclude that no further inquiry is appropriate, then the *user* should consider other information obtained from the *transaction screen process* relating to this question. For example, while on the site performing a *site visit*, a person may find a storage tank on the *property* and therefore answer Question 10 of the *transaction screen questionnaire* in the affirmative. However, during or subsequent to the *owner/occupant inquiry*, the *owner* may produce evidence that substances now or historically contained in the tank (for example, water) are not likely to cause contamination.

5.6.3 If either the guide to the question or other information obtained during the *transaction screen process* does not permit a *user* to conclude no further inquiry is appropriate with respect to such question, then the user must determine, in the exercise of the *user's* reasonable business judgment, based upon the totality of unresolved affirmative answers or answers of unknown received during the *transaction screen process*, whether further inquiry may be limited to those specific issues identified as of concern or should proceed with a full *Phase I Environmental Site Assessment*.

5.7 *Presumption*—A presumption exists that further inquiry is necessary if an affirmative answer is given to a question or because the answer was unknown or no response was given. In rebutting this presumption, the *user* should evaluate information obtained from each component of the transaction screen process and consider whether sufficient information has been obtained to conclude that no further inquiry is necessary. The user must determine, in the exercise of the user's reasonable business judgment, the scope of such further inquiry: whether to proceed with a *Phase I Environmental Site Assessment* prepared in accordance with Practice E 1527 or a lesser inquiry directed at specific issues raised by the questionnaire.

5.8 *Further Inquiry Under Practice E 1527*—Upon completing the *transaction screen questionnaire*, if the *user* concludes that a *Phase I Environmental Site Assessment* is needed, the *user* should proceed with such inquiry with the advice and guidance of an *environmental professional*. Such further inquiry should be undertaken in accordance with Practice E 1527.

5.9 *Signature*—The *user* and the *preparer* of the *transaction screen questionnaire* must complete and sign the questionnaire as provided at the end of the questionnaire.

6. Transaction Screen Questionnaire

6.1 *Persons to Be Questioned*—The following questions should be asked of (*1*) the current *owner* of the *property*,(2)any major *occupant* of the *property* or, if the *property* does not have any major *occupants*, at least 10 % of the *occupants* of the *property*, and (*3*) in addition to the current *owner* and the *occupants* identified in (2), any *occupant* likely to be using, treating, generating, storing, or disposing of *hazardous substances* or *petroleum products* on or from the *property*. A major *occupant* is any *occupant* using at least 40 % of the leasable area of the property or any anchor tenant when the *property* is a shopping center. In a multifamily property containing both residential and commercial uses, the *preparer* does not need to ask questions of the residential *occupants*. The preparer should ask each person to answer all questions to the best of the respondent's *actual knowledge* and in good faith. When completing the *site visit* column, the *preparer* should be sure to observe the *property* and any buildings and other structures on the *property*. The guide provides further details on the appropriate use of this questionnaire.[1]

Description of Site: Address:

N. Side of Centre City Parkway
325' S. of Brotherton Rd, APN 238-130-35 & 36
Escondido, California

Question	Owner			Occupants (if applicable)			Observed During Site Visit	
1a. Is the *property* used for an industrial use?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
1b. Is any *adjoining property* used for an industrial use?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
2a. Did you observe evidence or do you have any prior knowledge that the *property* has been used for an industrial use in the past?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
2b. Did you observe evidence or do you have any prior knowledge that any *adjoining property* has been used for an industrial use in the past?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
3a. Is the *property* used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
3b. Is any *adjoining property* used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing,or recycling facility (if applicable, identify which)?	Yes	No	Unk	Yes	No	Unk	(Yes)	No Gas Station NE
4a. Did you observe evidence or do you have any prior knowledge that the *property* has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
4b. Did you observe evidence or do you have any prior knowledge that any *adjoining property* has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
5a. Are there currently any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the *property* or at the facility?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
5b. Did you observe evidence or do you have any prior knowledge that there have been previously any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the *property* or at the facility?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
6a. Are there currently any industrial *drums* (typically 55 gal (208 L)) or sacks of chemicals located on the *property* or at the facility?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
6b. Did you observe evidence or do you have any prior knowledge that there have been previously any industrial *drums* (typically 55 gal (208L)) or sacks of chemicals located on the *property* or at the facility?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
7a. Did you observe evidence or do you have any prior knowledge that *fill dirt* has been brought onto the *property* that originated from a contaminated site?	Yes	No	Unk	Yes	No	Unk	Yes	(No)

[1] Unk = "unkown" or "no response"

Copyright © 2000 AMERICAN SOCIETY FOR TESTING AND MATERIALS, West Conshohocken, PA
This document is an excerpt of E 1528-00: Standard Practice for Environmental Site Assessments: Transaction Screen Process, which is under the jurisdiction of ASTM Committee E-50 on Environmental Assessment and is the direct responsibility of Subcommittee E 50.02 on Commercial Real Estate Transactions. This questionnaire represents only Sections 5 and 6 of Practice E 1528-00 and should not be construed as being the complete standard It is necessary to refer to the full standard prior to using this questionnaire. For the complete standard, or to order additional copies of this questionnaire, contact ASTM Customer Service at (610) 832-9585

Question	Owner			Occupants (if applicable)			Observed During Site Visit	
7b. Did you observe evidence or do you have any prior knowledge that *fill dirt* has been brought onto the *property* that is of an unknown origin?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
8a. Are there currently any *pits, ponds*, or *lagoons* located on the *property* in connection with waste treatment or waste disposal?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
8b. Did you observe evidence or do you have any prior knowledge that there have been previously, any pits, ponds, or lagoons located on the *property* in connection with waste treatment or waste disposal?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
9a. Is there currently any stained soil on the *property*?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
9b. Did you observe evidence or do you have any prior knowledge that there has been previously, any stained soil on the *property*?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
10a. Are there currently any registered or unregistered storage tanks(above or underground) located on the *property*?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
10b. Did you observe evidence or do you have any prior knowledge that there have been previously, any registered or unregistered storage tanks(above or underground) located on the *property*?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
11a. Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
11b. Did you observe evidence or do you have any prior knowledge that there have been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
12a. Is there currently evidence of leaks, spills or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the *property*?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
12b. Did you observe evidence or do you have any prior knowledge that there have been previously any leaks, spills, or staining by substances other than water, or foul odors, associated with any flooring drains, walls, ceilings or exposed grounds on the *property*?	Yes	No	Unk	Yes	No	Unk	Yes	(No)
13a. If the *property* is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system?	Yes	No	Unk	Yes	No	Unk	Yes	No N/A
13b. If the *property* is served by a private well or non-public water system, is there evidence or do you have prior knowledge that the well has been designated as contaminated by any government environmental/health agency?	Yes	No	Unk	Yes	No	Unk	Yes	No N/A
14. Does the *owner* or *occupant* of the *property* have any knowledge of *environmental* liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the *property* or any facility located on the *property*?	Yes	No	Unk	Yes	No	Unk		
15a. Has the owner or occupant of the *property* been informed of the past existence of hazardous substances or petroleum products with respect to the property or any facility located on the *property*?	Yes	No	Unk	Yes	No	Unk		
15b. Has the *owner* or *occupant* of the *property* been informed of the current existence of *hazardous substances* or *petroleum products* with respect to the property or any facility located on the *property*?	Yes	No	Unk	Yes	No	Unk		
15c. Has the *owner* or *occupant* of the *property* been informed of the past existence of environmental violations with respect to the *property* or any facility located on the *property*?	Yes	No	Unk	Yes	No	Unk		
15d. Has the owner or occupant of the *property* been informed of the current existence of environmental violations with respect to the *property* or any facility located on the *property*?	Yes	No	Unk	Yes	No	Unk		
16. Does the *owner* or *occupant* of the *property* have any knowledge of any environmental site assessment of the *property* or facility that indicated the presence of *hazardous substances* or *petroleum products* on, or contamination of, the *property* or recommended further assessment of the *property*?	Yes	No	Unk	Yes	No	Unk		

Copyright © 2000 AMERICAN SOCIETY FOR TESTING AND MATERIALS, West Conshohocken, PA
This document is an excerpt of E 1528-00: Standard Practice for Environmental Site Assessments: Transaction Screen Process, which is under the jurisdiction of ASTM Committee E-50 on Environmental Assessment and is the direct responsibility of Subcommittee E 50.02 on Commercial Real Estate Transactions. This questionnaire represents only Sections 5 and 6 of Practice E 1528-00 and should not be construed as being the complete standard. It is necessary to refer to the full standard prior to using this questionnaire. For the complete standard, or to order additional copies of this questionnaire, contact ASTM Customer Service at (610) 832-9585

Question	Owner			Occupants (if applicable)			Observed During Site Visit
17. Does the *owner* or *occupant* of the *property* know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any *hazardous substance* or *petroleum products* involving the *property* by any owner or occupant of the *property*?	Yes	No	Unk	Yes	No	Unk	
18a. Does the *property* discharge waste water (not including sanitary waste or storm water) onto or adjacent to the *property* and/or into a storm water system?	Yes	No	Unk	Yes	No	Unk	Yes (No)
18b. Does the *property* discharge waste water (not including sanitary waste or storm water) onto or adjacent to the *property* and/or into a sanitary sewer system?	Yes	No	Unk	Yes	No	Unk	Yes (No)
19. Did you observe evidence or do you have any prior knowledge that any *hazardous substances* or *petroleum products*, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried and/or burned on the *property*?	Yes	No	Unk	Yes	No	Unk	Yes (No)
20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	Yes	No	Unk	Yes	No	Unk	Yes (No)

Refer to Enclosed Report

Government Records/Historical Sources Inquiry
(See guide, Section 10 of ASTM Practice E 1528-00)

21. Do any of the following Federal government record systems list the property or any property within the search distance noted below:

	Approximate Minimum Search Distance, miles (kilometers)		
Federal NPL site list	1.0 (1.6)	Yes	No
Federal CERCLIS list	0.5 (0.8)	Yes	No
Federal CERCLIS NFRAP site list	property and adjoining properties	Yes	No
Federal RCRA CORRACTS facilities list	1.0 (1.6)	Yes	No
Federal RCRA non-CORRACTS TSD facilities list	0.5 (0.8)	Yes	No
Federal RCRA generators list	property and adjoining properties	Yes	No
Federal ERNS list	property only	Yes	No

22. Do any of the following state record systems list the property or any property within the search distance noted below:

	Approximate Minimum Search Distance, miles (kilometers)		
State lists of hazardous waste sites identified for Investigation or remediation:			
State — Equivalent NPL	1.0 (1.6)	Yes	No
State — Equivalent CERCLIS	0.5 (0.8)	Yes	No
State landfill and/or solid waste disposal site lists	0.5 (0.8)	Yes	No
State leaking UST lists	0.5 (0.8)	Yes	No
State registered UST lists	property and adjoining properties	Yes	No

23. Based upon a review of *fire insurance maps* 10.3.1.3 or consultation with the local fire department serving the *property*, all as specified in the guide, are any buildings or other improvements on the *property* or on an *adjoining property* identified as having been used for an industrial use or uses likely to lead to contamination of the *property*? Yes (No)

Copyright © 2000 AMERICAN SOCIETY FOR TESTING AND MATERIALS, West Conshohocken, PA
This document is an excerpt of E 1528-00: Standard Practice for Environmental Site Assessments: Transaction Screen Process, which is under the jurisdiction of ASTM Committee E-50 on Environmental Assessment and is the

ie preparer of the transaction screen questionnaire must complete and sign the following. (For definition of *preparer* and *er*, see 5.3 or 3.3.28 of ASTM Practice E 1528-00.)

The Owner questionnaire was completed by:

ame _____

itle _____

rm _____

ddress _____

_____

one number _____

ate _____

eparer's relationship to site _____

reparer's relationship to user (for example, principal, employee, ent, consultant) _____

The Occupant questionnaire was completed by:

ame _____

itle _____

rm _____

ddress _____

_____

one number _____

ate _____

eparer's relationship to site _____

reparer's relationship to user (for example, principal, employee, ent, consultant) _____

The Site Visit questionnaire was completed by:

ame Carole Missirlian

itle ~~(EP)~~ Principal

rm (EP)2 Environmental

ddress 18330 Blackhawk St

Northridge CA 91326

one number 818. 881. 9221

ate 5-13-05

eparer's relationship to site —

reparer's relationship to user (for example, principal, employee, ent, consultant) Consultant

The Government Records and Historical Sources Inquiry questionnaire was completed by:

Name _____

Title _____

Firm _____

Address _____

_____

Phone number _____

Date _____

Preparer's relationship to site _____

Preparer's relationship to user (for example, principal, employee, agent, consultant) _____

User's relationship to the site (for example, owner, prospective purchaser, lender, etc.)

If the preparer(s) is different from the user, complete the following:

Name of User _____

User's address _____

_____

User's phone number _____

Copies of the completed questionnaires have been filed at:

_____

_____

_____

Copies of the completed questionnaires have been mailed or delivered to:

_____

_____

_____

Preparer represents that to the best of the preparer's knowledge the above statements and facts are true and correct and to the best of the preparer's actual knowledge no material facts have been suppressed or misstated.

Signature _____

Date _____

Signature _____

Date _____

Signature _____

Date _____

yright © 2000 AMERICAN SOCIETY FOR TESTING AND MATERIALS, West Conshohocken, PA
document is an excerpt of E 1528-00: Standard Practice for Environmental Site Assessments: Transaction Screen Process, which is under the jurisdiction of ASTM Committee E-50 on Environmental ssment and is the direct responsibility of Subcommittee E 50.02 on Commercial Real Estate Transactions. This questionnaire represents only Sections 5 and 6 of Practice E 1528-00 and should e construed as being the complete standard. It is necessary to refer to the full standard prior to using this questionnaire. For the complete standard, or to order additional copies of this questionnaire, ct ASTM Customer Service at (610) 832-9585.

APPENDIX 4

ENVIRONMENTAL DATA RESOURCES, INC., DATABASE REPORT

EDR™ Environmental
Data Resources Inc

The EDR Radius Map
with GeoCheck®

Vacant Lots APN 238-130-35 and -36
Centre City Parkway/Brotherton
Escondido, CA 92025

Inquiry Number: 01416822.1r

May 06, 2005

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

FORM-MOR

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	6
Orphan Summary	51
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting Source Map	A-7
Physical Setting Source Map Findings	A-8
Physical Setting Source Records Searched	A-12

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2005 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

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

CENTRE CITY PARKWAY/BROTHERTON
ESCONDIDO, CA 92025

COORDINATES

Latitude (North):	33.092700 - 33° 5' 33.7"
Longitude (West):	117.073000 - 117° 4' 22.8"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	493187.6
UTM Y (Meters):	3661374.8
Elevation:	617 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	33117-A1 ESCONDIDO, 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
RCRA-TSDF ..... Resource Conservation and Recovery Act Information
RCRA-LQG ..... Resource Conservation and Recovery Act Information
ERNS ..... Emergency Response Notification System

STATE ASTM STANDARD

CHMIRS ..... California Hazardous Material Incident Report System

Toxic Pits..... Toxic Pits Cleanup Act Sites
SWF/LF..... Solid Waste Information System
WMUDS/SWAT..... Waste Management Unit Database
VCP..... Voluntary Cleanup Program Properties
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
INDIAN UST..... Underground Storage Tanks on Indian Land
CA FID UST..... Facility Inventory 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
US ENG CONTROLS..... Engineering Controls Sites List
ODI..... Open Dump Inventory
DOD..... Department of Defense Sites
INDIAN RESERV..... Indian Reservations
UMTRA..... Uranium Mill Tailings Sites
FUDS..... Formerly Used Defense 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
CA WDS..... Waste Discharge System
DEED..... Deed Restriction Listing
NFA..... No Further Action Determination
WIP..... Well Investigation Program Case List
EMI..... Emissions Inventory Data
SCH..... School Property Evaluation Program
NFE..... Properties Needing Further Evaluation
CA SLIC..... Statewide SLIC Cases
HAZNET..... Facility and Manifest Data
San Diego Co. HMMD..... Hazardous Materials Management Division Database

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas..... Former Manufactured Gas (Coal Gas) Sites

BROWNFIELDS DATABASES

US BROWNFIELDS..... A Listing of Brownfields Sites

EXECUTIVE SUMMARY

US INST CONTROL..... Sites with Institutional Controls
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.

FEDERAL ASTM STANDARD

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database 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 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 offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/13/2005 has revealed that there is 1 RCRA-SQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
CARSON CLEANERS	*2441 SOUTH CENTRE CITY*	*0 - 1/8 NE*	*1*	*6*

STATE ASTM STANDARD

AWP: California DTSC's Annual Workplan, formerly known as BEP, identifies known hazardous substance sites targeted for cleanup. The source is the California Environmental Protection Agency.

A review of the AWP list, as provided by EDR, and dated 02/07/2005 has revealed that there is 1 AWP site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
CHATHAM BROTHERS BARREL YARD	*2257 BERNARDO AVE*	*1/2 - 1 W*	*D17*	*23*

EXECUTIVE SUMMARY

CAL-SITES: Formerly known as ASPIS, this database contains both known and potential hazardous substance sites. The source is the California Department of Toxic Substance Control.

A review of the Cal-Sites list, as provided by EDR, has revealed that there is 1 Cal-Sites site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
CHATHAM BROTHERS BARREL YARD	***2257 BERNARDO AVE***	***1/2 - 1 W***	***D17***	***23***

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 0.5 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
ARCO SERVICE STATION #194	***2306 ESCONDIDO***	***1/8 - 1/4 NE***	***A6***	***13***
FORMER HARRIS TEXACO	***2690 ESCONDIDO BLVD S***	***1/4 - 1/2 S***	***15***	***22***

NOTIFY 65: Notify 65 records contain facility notifications about any release that could impact drinking water and thereby expose the public to a potential health risk. The data come from the State Water Resources Control Board's Proposition 65 database.

A review of the Notify 65 list, as provided by EDR, has revealed that there are 4 Notify 65 sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
LIFT STATION 3	2045 SO. ESCONDIDO BLVD	1/4 - 1/2 NNE	14	22

Lower Elevation	Address	Dist / Dir	Map ID	Page
ARCO GASOLINE STATION	2306 SO. ESCONDIDO BLVD	1/8 - 1/4 NE	A3	11
2698 SO. ESCONDIDO BLVD.	PS NO2	1/4 - 1/2 SSE	C12	21
2698 SO. ESCONDIDO BLVD	PS NO2	1/4 - 1/2 SSE	C13	21

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 01/10/2005 has revealed that there are 6 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
ARCO SERVICE STATION #1948	2306 ESCONDIDO BLVD S	1/8 - 1/4 NE	A5	12
ARCO	2306 S ESCONDIDO BL	1/8 - 1/4 NE	A7	14
DAVID V TOLLISON	2306 S ESCONDIDO BL	1/8 - 1/4 NE	A8	17
ARCO #1948	2306 S ESCONDIDO BL	1/8 - 1/4 NE	A9	18
BROTHERTON PLAZA	2250 S ESCONDIDO BL	1/8 - 1/4 NNE	B10	19
FORMER HARRIS TEXACO	***2690 ESCONDIDO BLVD S***	***1/4 - 1/2 S***	***15***	***22***

BEP: 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.

A review of the CA BOND EXP. PLAN list, as provided by EDR, has revealed that there is 1 CA BOND EXP. PLAN site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
CHATHAM BROTHERS BARRELS	2257 BERNARDO AVENUE	1/2 - 1 W	D16	22

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 04/12/2005 has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
BLUE RIBBON INVESTMENTS INC	2306 S ESCONDIDO BLVD	1/8 - 1/4 NE	A2	10

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
DAVID V TOLLISON	*2306 S ESCONDIDO BLVD*	*1/8 - 1/4 NE*	*A4*	*11*

STATE OR LOCAL ASTM SUPPLEMENTAL

DRYCLEANERS: 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 cleaners' agents; linen supply; coin-operated laundries and cleaning; drycleaning plants except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

A review of the CLEANERS list, as provided by EDR, has revealed that there is 1 CLEANERS site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
CARSON CLEANERS	*2441 SOUTH CENTRE CITY*	*0 - 1/8 NE*	*1*	*6*

REF: 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 tate or local regulatory agency.

A review of the REF list, as provided by EDR, and dated 02/07/2005 has revealed that there is 1 REF site within approximately 0.25 miles of the target property.

EXECUTIVE SUMMARY

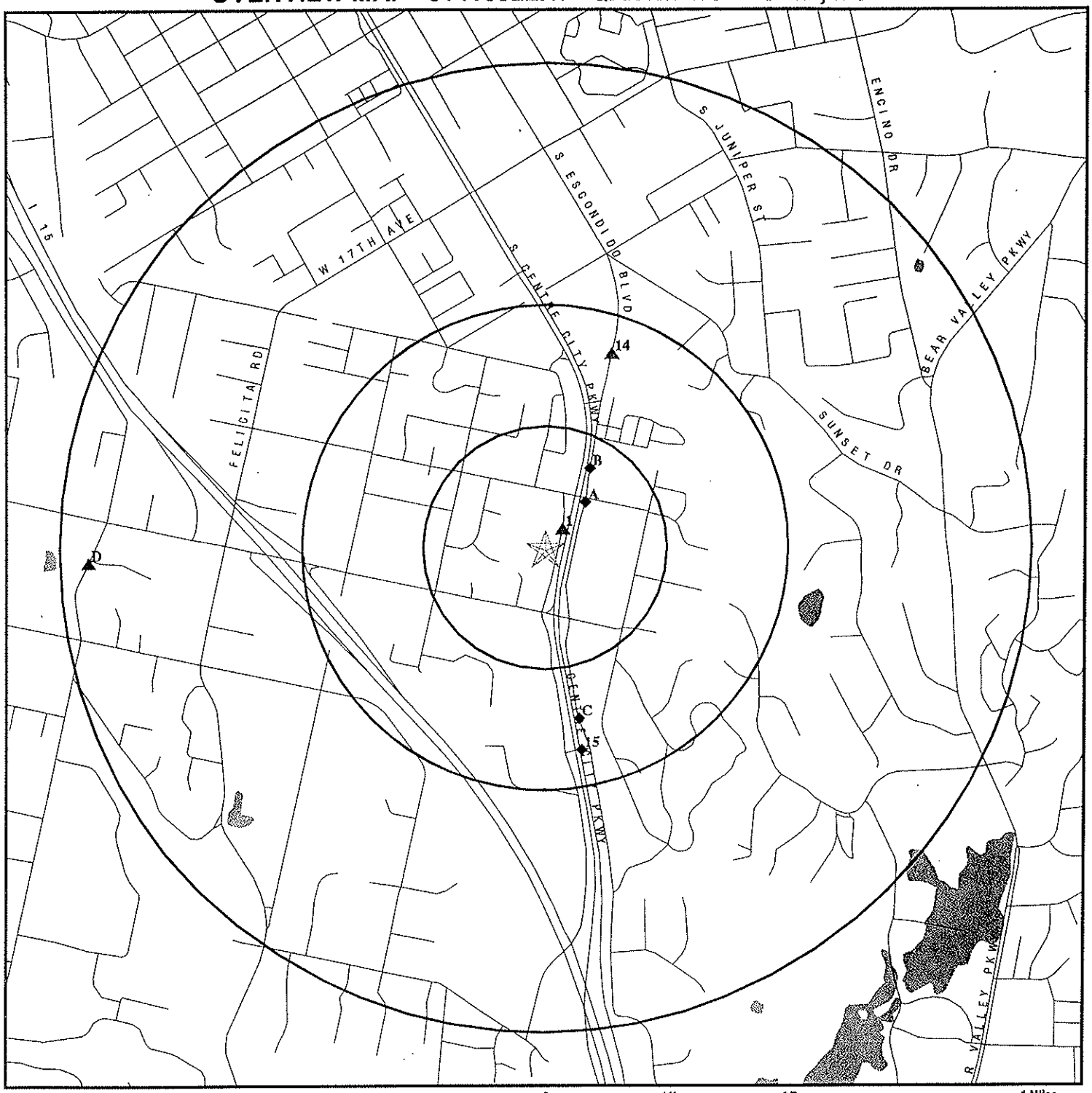
Lower Elevation	Address	Dist / Dir	Map ID	Page
BROTHERTON PLAZA	2250 S. ESCONDIDO BLVD.	1/8 - 1/4 NNE	B11	20

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
BENTON BURN DUMP	CERCLIS
SANTA YSABEL CREEK GROUNDWATER CONTAMIN.	CERCLIS, FINDS
DIXON DAM	SWF/LF
ESCONDIDO 1 (MAYHEW) BURNSITE	SWF/LF
BENTON DUMP	SWF/LF
BENTON DUMP	SWF/LF
VACANT LOT (5TH AND PINE)	LUST
ESCONDIDO NISSAN INC	LUST
EAST ESCONDIDO DUMP	WMUDS/SWAT

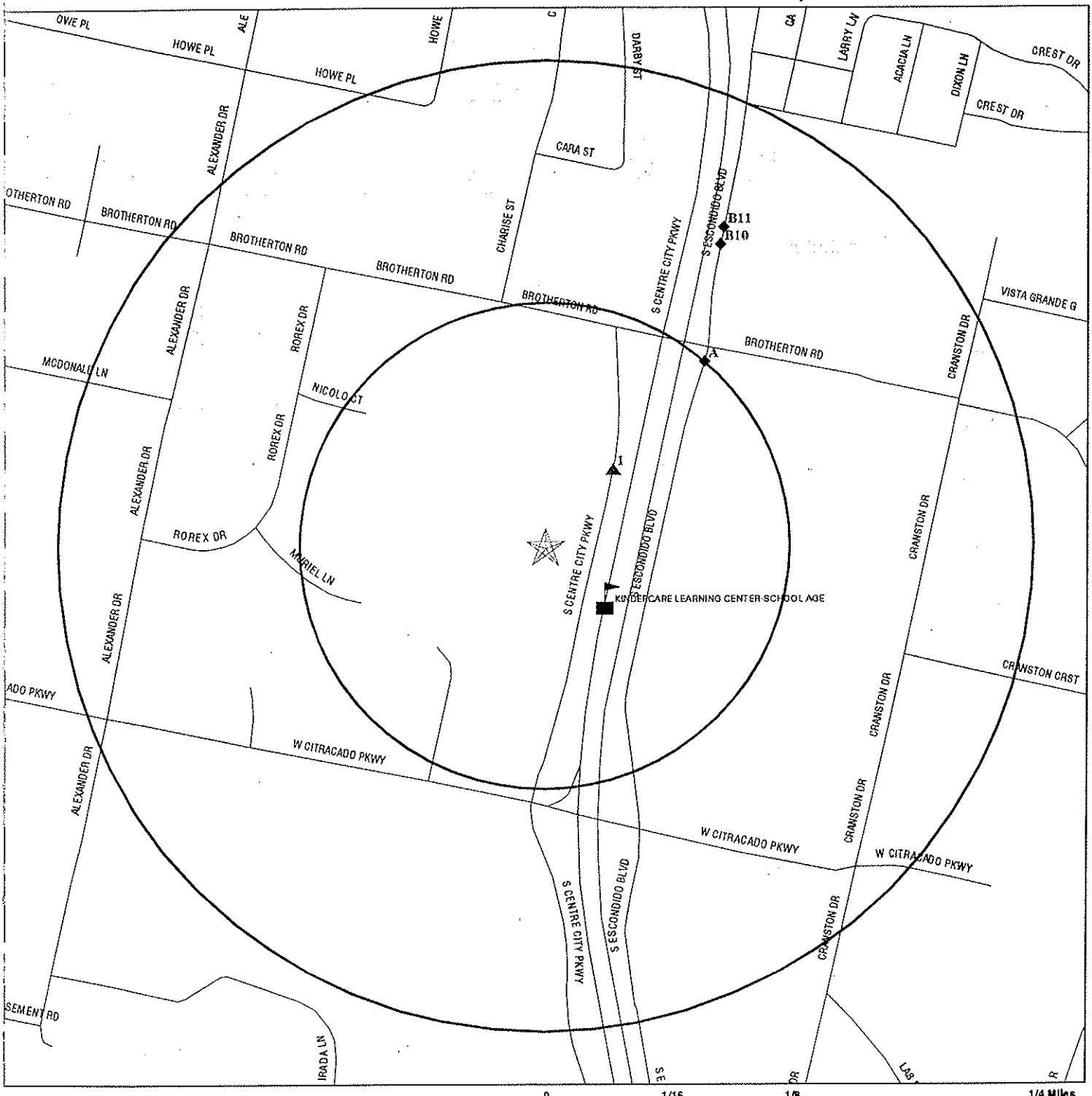
OVERVIEW MAP - 01416822.1r - QA2 Environmental, Inc.



- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ♟ Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Vacant Lots APN 238-130-35 and -36	CUSTOMER:	QA2 Environmental, Inc.
ADDRESS:	Centre City Parkway/Brotherton	CONTACT:	Carole Missirlian
CITY/STATE/ZIP:	Escondido CA 92025	INQUIRY #:	01416822.1r
LAT/LONG:	33.0927 / 117.0730	DATE:	May 06, 2005 8:01 pm

DETAIL MAP - 01416822.1r - QA2 Environmental, Inc.



- ★ 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
- Indian Reservations BIA
- Oil & Gas pipelines
- Areas of Concern

TARGET PROPERTY:	Vacant Lots APN 238-130-35 and -36	CUSTOMER:	QA2 Environmental, Inc.
ADDRESS:	Centre City Parkway/Brotherton	CONTACT:	Carole Missirlian
CITY/STATE/ZIP:	Escondido CA 92025	INQUIRY #:	01416822.1r
LAT/LONG:	33.0927 / 117.0730	DATE:	May 06, 2005 8:01 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
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	1	0	NR	NR	NR	1
ERNS		TP	NR	NR	NR	NR	NR	0
STATE ASTM STANDARD								
AWP		1.000	0	0	0	1	NR	1
Cal-Sites		1.000	0	0	0	1	NR	1
CHMIRS		TP	NR	NR	NR	NR	NR	0
Cortese		0.500	0	1	1	NR	NR	2
Notify 65		1.000	0	1	3	0	NR	4
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	5	1	NR	NR	6
CA Bond Exp. Plan		1.000	0	0	0	1	NR	1
UST		0.250	0	1	NR	NR	NR	1
VCP		0.500	0	0	0	NR	NR	0
INDIAN LUST		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	1	NR	NR	NR	1
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
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
INDIAN RESERV		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
FUDS		1.000	0	0	0	0	NR	0
RAATS		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
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
CLEANERS		0.250	1	0	NR	NR	NR	1
CA WDS		TP	NR	NR	NR	NR	NR	0
DEED		0.500	0	0	0	NR	NR	0
NFA		0.250	0	0	NR	NR	NR	0
WIP		0.250	0	0	NR	NR	NR	0
EMI		TP	NR	NR	NR	NR	NR	0
REF		0.250	0	1	NR	NR	NR	1
SCH		0.250	0	0	NR	NR	NR	0
NFE		0.250	0	0	NR	NR	NR	0
SLIC		0.500	0	0	0	NR	NR	0
HAZNET		TP	NR	NR	NR	NR	NR	0
San Diego Co. HMMD		TP	NR	NR	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
US INST CONTROL		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
NE
< 1/8
279 ft.

CARSON CLEANERS
2441 SOUTH CENTRE CITY PARKWAY
ESCONDIDO, CA 92025

RCRA-SQG 1000904946
FINDS CA0000206870
HAZNET
CLEANERS

Relative:
Higher

Actual:
618 ft.

RCRAInfo:
Owner: MARGARET JONES
(619) 747-0733
EPA ID: CA0000206870
Contact: RICHARD JONES
(619) 747-0733

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
National Emissions Inventory
Resource Conservation and Recovery Act Information system

CA Cleaners:

Inactive Date:	11/12/2004
EPA Id:	CAL000267746
Facility Address 2 :	Not reported
NAICS Code :	81232
Facility Active :	No
Mail Name :	Not reported
Mailing Address:	8065 LOS SABALOS ST SAN DIEGO, CA 92126
Owner Name :	EPA BACKREST INC
Mailing Address:	2441 S CENTRE CITY PKWY ESCONDIDO, CA 92025
Owner Telephone :	8587470733
Contact Name :	ANIL MAVALANKAR
Mailing Address:	2441 S CENTRE CITY PKWY ESCONDIDO, CA 92025
Contact Telephone :	8587487988
Region Code :	4
Create Date :	03/14/2003
SIC Description :	Drycleaning Plants, Except Rug Cleaning
NAICS Description :	Drycleaning and Laundry Services (except Coin-Operated)

Inactive Date:	Not reported
EPA Id:	CAL000275115
Facility Address 2 :	Not reported
NAICS Code :	81232
Facility Active :	Yes
Mail Name :	Not reported
Mailing Address:	2441 S CENTRE CITY PKWY ESCONDIDO, CA 92025
Owner Name :	CARSON CLEANERS
Mailing Address:	899 GRAND AVE STE A SAN DIEGO, CA 92109
Owner Telephone :	8582727450

CARSON CLEANERS (Continued) 1000904946

Contact Name : HAU VAN
Mailing Address: 8065 LOS SABALOS
SAN DIEGO, CA 92126
Contact Telephone : 8586930843
Region Code : 4
Create Date : 09/29/2003
SIC Description : Drycleaning Plants, Except Rug Cleaning
NAICS Description : Drycleaning and Laundry Services (except Coin-Operated)

Inactive Date: 6/30/2003
EPA Id: CA0000206870
Facility Address 2 : Not reported
NAICS Code : Not reported
Facility Active : No
Mail Name : Not reported
Mailing Address: 2441 S CENTRE CITY PKWY
ESCONDIDO, CA 92025
Owner Name : MARGARET JONES
Mailing Address: 2441 S CENTRE CITY PKWY
ESCONDIDO, CA 92025
Owner Telephone : 6197470733
Contact Name : RICHARD R JONES MGR
Mailing Address: 2441 S CENTRE CITY PKWY
ESCONDIDO, CA 92025
Contact Telephone : 8587487988
Region Code : 0
Create Date : 12/08/1995
SIC Description : Not reported
NAICS Description : Not reported

Inactive Date: 11/12/2004
EPA Id: CAL000267746
Facility Address 2 : Not reported
NAICS Code : 81232
Facility Active : No
Mail Name : Not reported
Mailing Address: 8065 LOS SABALOS ST
SAN DIEGO, CA 92126
Owner Name : EPA BACKREST INC
Mailing Address: 2441 S CENTRE CITY PKWY
ESCONDIDO, CA 92025
Owner Telephone : 8587470733
Contact Name : ANIL MAVALANKAR
Mailing Address: 2441 S CENTRE CITY PKWY
ESCONDIDO, CA 92025
Contact Telephone : 8587487988
Region Code : 4
Create Date : 03/14/2003
SIC Description : Laundry and Garment Services, NEC (except diaper service and clothing alteration and repair)
NAICS Description : Drycleaning and Laundry Services (except Coin-Operated)

Inactive Date: Not reported
EPA Id: CAL000275115
Facility Address 2 : Not reported
NAICS Code : 81232
Facility Active : Yes
Mail Name : Not reported

CARSON CLEANERS (Continued) 1000904946

Mailing Address: 2441 S CENTRE CITY PKWY
ESCONDIDO, CA 92025
Owner Name : CARSON CLEANERS
Mailing Address: 899 GRAND AVE STE A
SAN DIEGO, CA 92109
Owner Telephone : 8582727450
Contact Name : HAU VAN
Mailing Address: 8065 LOS SABALOS
SAN DIEGO, CA 92126
Contact Telephone : 8586930843
Region Code : 4
Create Date : 09/29/2003
SIC Description : Laundry and Garment Services, NEC (except diaper service and clothing alteration and repair)
NAICS Description : Drycleaning and Laundry Services (except Coin-Operated)

Inactive Date: 11/12/2004
EPA Id: CAL000267746
Facility Address 2 : Not reported
NAICS Code : 81232
Facility Active : No
Mail Name : Not reported
Mailing Address: 8065 LOS SABALOS ST
SAN DIEGO, CA 92126
Owner Name : EPA BACKREST INC
Mailing Address: 2441 S CENTRE CITY PKWY
ESCONDIDO, CA 92025
Owner Telephone : 8587470733
Contact Name : ANIL MAVALANKAR
Mailing Address: 2441 S CENTRE CITY PKWY
ESCONDIDO, CA 92025
Contact Telephone : 8587487988
Region Code : 4
Create Date : 03/14/2003
SIC Description : Power Laundries, Family and Commercial
NAICS Description : Drycleaning and Laundry Services (except Coin-Operated)

Inactive Date: Not reported
EPA Id: CAL000275115
Facility Address 2 : Not reported
NAICS Code : 81232
Facility Active : Yes
Mail Name : Not reported
Mailing Address: 2441 S CENTRE CITY PKWY
ESCONDIDO, CA 92025
Owner Name : CARSON CLEANERS
Mailing Address: 899 GRAND AVE STE A
SAN DIEGO, CA 92109
Owner Telephone : 8582727450
Contact Name : HAU VAN
Mailing Address: 8065 LOS SABALOS
SAN DIEGO, CA 92126
Contact Telephone : 8586930843
Region Code : 4
Create Date : 09/29/2003
SIC Description : Power Laundries, Family and Commercial
NAICS Description : Drycleaning and Laundry Services (except Coin-Operated)

CARSON CLEANERS (Continued) 1000904946

Inactive Date:	11/12/2004
EPA Id:	CAL000267746
Facility Address 2 :	Not reported
NAICS Code :	81232
Facility Active :	No
Mail Name :	Not reported
Mailing Address:	8065 LOS SABALOS ST SAN DIEGO, CA 92126
Owner Name :	EPA BACKREST INC
Mailing Address:	2441 S CENTRE CITY PKWY ESCONDIDO, CA 92025
Owner Telephone :	8587470733
Contact Name :	ANIL MAVALANKAR
Mailing Address:	2441 S CENTRE CITY PKWY ESCONDIDO, CA 92025
Contact Telephone :	8587487988
Region Code :	4
Create Date :	03/14/2003
SIC Description :	Garment Pressing, and Agents for Laundries and Drycleaners
NAICS Description :	Drycleaning and Laundry Services (except Coin-Operated)

Inactive Date:	Not reported
EPA Id:	CAL000275115
Facility Address 2 :	Not reported
NAICS Code :	81232
Facility Active :	Yes
Mail Name :	Not reported
Mailing Address:	2441 S CENTRE CITY PKWY ESCONDIDO, CA 92025
Owner Name :	CARSON CLEANERS
Mailing Address:	899 GRAND AVE STE A SAN DIEGO, CA 92109
Owner Telephone :	8582727450
Contact Name :	HAU VAN
Mailing Address:	8065 LOS SABALOS SAN DIEGO, CA 92126
Contact Telephone :	8586930843
Region Code :	4
Create Date :	09/29/2003
SIC Description :	Garment Pressing, and Agents for Laundries and Drycleaners
NAICS Description :	Drycleaning and Laundry Services (except Coin-Operated)

HAZNET:

Gepaid:	CA0000206870
TSD EPA ID:	CAT000613976
Gen County:	San Diego
Tsd County:	Orange
Tons:	.8775
Waste Category:	Liquids with halogenated organic compounds > 1000 mg/l
Disposal Method:	Transfer Station
Contact:	MARGARET JONES
Telephone:	(619) 747-0733
Mailing Address:	2441 S CENTRE CITY PKWY ESCONDIDO, CA 92025 - 7002
County	San Diego

CARSON CLEANERS (Continued) 1000904946

Gepaid: CA0000206870
TSD EPA ID: CAT000613976
Gen County: San Diego
Tsd County: Orange
Tons: .3900
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l
Disposal Method: Transfer Station
Contact: MARGARET JONES
Telephone: (619) 747-0733
Mailing Address: 2441 S CENTRE CITY PKWY
ESCONDIDO, CA 92025 - 7002
County San Diego

Gepaid: CA0000206870
TSD EPA ID: CAT000613976
Gen County: San Diego
Tsd County: Orange
Tons: .6825
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l
Disposal Method: Transfer Station
Contact: MARGARET JONES
Telephone: (619) 747-0733
Mailing Address: 2441 S CENTRE CITY PKWY
ESCONDIDO, CA 92025 - 7002
County San Diego

Gepaid: CA0000206870
TSD EPA ID: CAT000613976
Gen County: San Diego
Tsd County: Orange
Tons: .1950
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l
Disposal Method: Not reported
Contact: MARGARET JONES
Telephone: (619) 747-0733
Mailing Address: 2441 S CENTRE CITY PKWY
ESCONDIDO, CA 92025 - 7002
County San Diego

A2 **BLUE RIBBON INVESTMENTS INC** UST U003789207
NE **2306 S ESCONDIDO BLVD** N/A
1/8-1/4 **ESCONDIDO, CA 92025**
662 ft.

Site 1 of 8 in cluster A

Relative:
Lower

Actual:
614 ft.

State UST:
Facility ID: H05186
Total Tanks: 1
Region: STATE
Local Agency: 37000

Map ID / Direction / Distance / Distance (ft.) / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
A3 NE 1/8-1/4 662 ft. Relative: Lower Actual: 614 ft.	ARCO GASOLINE STATION 2306 SO. ESCONDIDO BLVD. ESCONDIDO, CA 92025 Site 2 of 8 in cluster A	Notify 65	S100178478 N/A

NOTIFY 65:

Date Reported:	Not reported	Staff Initials: Not reported
Board File Number:	Not reported	
Facility Type:	Not reported	
Discharge Date:	Not reported	
Incident Description:	92025-7028	

Map ID / Direction / Distance / Distance (ft.) / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
A4 NE 1/8-1/4 662 ft. Relative: Lower Actual: 614 ft.	DAVID V TOLLISON 2306 S ESCONDIDO BLVD ESCONDIDO, CA 92025 Site 3 of 8 in cluster A	HAZNET HIST UST	U001571405 N/A

HAZNET:

Gepaid:	CAL000225446
TSD EPA ID:	Not reported
Gen County:	San Diego
Tsd County:	Los Angeles
Tons:	0.87
Waste Category:	Aqueous solution with less than 10% total organic residues
Disposal Method:	Not reported
Contact:	JACK OMAN
Telephone:	(714) 670-5402
Mailing Address:	PO BOX 6038
	ARTESIA, CA 90702 - 6038
County	Not reported

Gepaid:	CAL000225446
TSD EPA ID:	Not reported
Gen County:	San Diego
Tsd County:	Los Angeles
Tons:	4.71
Waste Category:	Aqueous solution with less than 10% total organic residues
Disposal Method:	Recycler
Contact:	JACK OMAN
Telephone:	(714) 670-5402
Mailing Address:	PO BOX 6038
	ARTESIA, CA 90702 - 6038
County	Not reported

Gepaid:	CAL000225446
TSD EPA ID:	Not reported
Gen County:	San Diego
Tsd County:	Los Angeles
Tons:	6.88
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Contact:	JACK OMAN
Telephone:	(714) 670-5402
Mailing Address:	PO BOX 6038
	ARTESIA, CA 90702 - 6038
County	Not reported

UST HIST:

Facility ID:	26676	Owner Name:	ARCO PETROLEUM PRODUCTS CO.
Total Tanks:	4	Region:	STATE

DAVID V TOLLISON (Continued) U001571405

Owner Address: 515 SOUTH FLOWER STREET
LOS ANGELES, CA 90071
Tank Used for: PRODUCT
Tank Num: 1
Tank Capacity: 00004000
Type of Fuel: UNLEADED
Leak Detection: Stock Inventor
Contact Name: Not reported
Facility Type: Gas Station

Container Num: 0000000001
Year Installed: 1967
Tank Construction: 0000167 inches

Telephone: (000) 000-0000
Other Type: Not reported

Facility ID: 26676
Total Tanks: 4
Owner Address: 515 SOUTH FLOWER STREET
LOS ANGELES, CA 90071
Tank Used for: PRODUCT
Tank Num: 2
Tank Capacity: 00004000
Type of Fuel: UNLEADED
Leak Detection: Stock Inventor
Contact Name: Not reported
Facility Type: Gas Station

Owner Name: ARCO PETROLEUM PRODUCTS CO.
Region: STATE

Container Num: 0000000002
Year Installed: 1967
Tank Construction: 0000167 inches

Telephone: (000) 000-0000
Other Type: Not reported

Facility ID: 26676
Total Tanks: 4
Owner Address: 515 SOUTH FLOWER STREET
LOS ANGELES, CA 90071
Tank Used for: PRODUCT
Tank Num: 3
Tank Capacity: 00006000
Type of Fuel: REGULAR
Leak Detection: Stock Inventor
Contact Name: Not reported
Facility Type: Gas Station

Owner Name: ARCO PETROLEUM PRODUCTS CO.
Region: STATE

Container Num: 0000000003
Year Installed: 1967
Tank Construction: 0000240 inches

Telephone: (000) 000-0000
Other Type: Not reported

Facility ID: 26676
Total Tanks: 4
Owner Address: 515 SOUTH FLOWER STREET
LOS ANGELES, CA 90071
Tank Used for: PRODUCT
Tank Num: 4
Tank Capacity: 00006000
Type of Fuel: PREMIUM
Leak Detection: Stock Inventor
Contact Name: Not reported
Facility Type: Gas Station

Owner Name: ARCO PETROLEUM PRODUCTS CO.
Region: STATE

Container Num: 0000000004
Year Installed: 1973
Tank Construction: 0000240 inches

Telephone: (000) 000-0000
Other Type: Not reported

A5
NE
1/8-1/4
662 ft.

Site 4 of 8 in cluster A

Relative:
Lower

Actual:
614 ft.

ARCO SERVICE STATION #1948 LUST S101301616
2306 ESCONDIDO BLVD S N/A
ESCONDIDO, CA 92025

ARCO SERVICE STATION #1948 (Continued) **S101301616**

LUST Region 9:

Case Number:	9UT2425	Release Date:	01/24/1990
Local Agency:	37000		
Substance:	8006619	Qty Leaked:	Not reported
Date Found:	02/06/1990	How Found:	Tank Closure
Date Stopped:	02/06/1990	How Stopped:	Close Tank
Source:	Unknown	Cause:	Unknown
Lead Agency:	Local Agency		
Status:	Preliminary site assessment underway		
Case Type:	Drinking Water Aquifer affected		
Confirm Date:	Not reported	Submit Workplan:	Not reported
Prelim Assess:	Not reported	Desc Pollution:	Not reported
Remed Plan:	Not reported	Remed Action:	Not reported
Began Monitor:	Not reported	Closed Date:	Not reported
Enforce Type:	Not reported		
Enforce Date:	Not reported		
Pilot Program:	LOP	Local Case:	H05186-004
Basin Number:	905.20	Gwater Depth:	11'
File Dispn:	Not reported		

Interim Remedial Actions:	Yes
Beneficial Use:	MUN
Cleanup and Abatement order Number:	Not reported
Waste Discharge Requirement Number:	Not reported
NPDES Number:	Not reported

A6 **ARCO SERVICE STATION #194** **HAZNET S103644005**
NE **2306 ESCONDIDO** **Cortese N/A**
1/8-1/4 **ESCONDIDO, CA 92025**
662 ft.

Site 5 of 8 in cluster A

Relative: Lower

Actual: 614 ft.

HAZNET:

Gepaid:	CAL000034590
TSD EPA ID:	CAT080013352
Gen County:	San Diego
Tsd County:	Los Angeles
Tons:	.8340
Waste Category:	Aqueous solution with less than 10% total organic residues
Disposal Method:	Recycler
Contact:	ATLANTIC RICHFIELD CORP
Telephone:	(714) 670-5366
Mailing Address:	PO BOX 6038
	ARTESIA, CA 90702 - 6038
County	San Diego

Gepaid:	CAL000034590
TSD EPA ID:	CAT080013352
Gen County:	San Diego
Tsd County:	Los Angeles
Tons:	.3127
Waste Category:	Aqueous solution with less than 10% total organic residues
Disposal Method:	Recycler
Contact:	ATLANTIC RICHFIELD CORP
Telephone:	(714) 670-5366
Mailing Address:	PO BOX 6038
	ARTESIA, CA 90702 - 6038
County	San Diego

ARCO SERVICE STATION #194 (Continued) S103644005

Gepaid: CAL000034590
TSD EPA ID: CAT080013352
Gen County: San Diego
Tsd County: Los Angeles
Tons: .8757
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Not reported
Contact: ATLANTIC RICHFIELD CORP
Telephone: (714) 670-5366
Mailing Address: PO BOX 6038
ARTESIA, CA 90702 - 6038
County San Diego

Gepaid: CAL000034590
TSD EPA ID: CAT080013352
Gen County: San Diego
Tsd County: Los Angeles
Tons: .3127
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Contact: ATLANTIC RICHFIELD CORP
Telephone: (714) 670-5366
Mailing Address: PO BOX 6038
ARTESIA, CA 90702 - 6038
County San Diego

Gepaid: CAL000034590
TSD EPA ID: CAT080013352
Gen County: San Diego
Tsd County: Los Angeles
Tons: 3.9988
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Recycler
Contact: ATLANTIC RICHFIELD CORP
Telephone: (714) 670-5366
Mailing Address: PO BOX 6038
ARTESIA, CA 90702 - 6038
County San Diego

Click this hyperlink while viewing on your computer to access
6 additional CA HAZNET record(s) in the EDR Site Report.

CORTESE:
Region: CORTESE
Fac Address 2: Not reported

A7
NE
1/8-1/4
662 ft.

Relative:
Lower

Actual:
614 ft.

ARCO
2306 S ESCONDIDO BL
ESCONDIDO, CA 92025

LUST S106163853
N/A

Site 6 of 8 in cluster A

State LUST:
Cross Street: Not reported
Qty Leaked: Not reported
Case Number Not reported
Reg Board: 9
Chemical: Not reported
Lead Agency: Local Agency
Local Agency : 37000L

ARCO (Continued) S106163853

Case Type:	FT		
Status:	Case Closed		
Review Date:	Not reported	Confirm Leak:	Not reported
Workplan:	1965-01-03 00:00:00	Prelim Assess:	1965-01-03 00:00:00
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	1965-01-03 00:00:00		
Monitoring:	Not reported		
Close Date:	1987-09-24 00:00:00		
Release Date:	Not reported		
Cleanup Fund Id :	Not reported		
Discover Date :	Not reported		
Enforcement Dt :	Not reported		
Enf Type:	Not reported		
Enter Date :	Not reported		
Funding:	Not reported		
Staff Initials:	CVI		
How Discovered:	Not reported		
How Stopped:	Not reported		
Interim :	Not reported		
Leak Cause:	Not reported		
Leak Source:	Not reported		
MTBE Date :	Not reported		
Max MTBE GW :	Not reported		
MTBE Tested:	Not Required to be Tested.		
Priority:	3VA		
Local Case # :	Not reported		
Beneficial:	Not reported		
Staff :	UNK		
GW Qualifier :	Not reported		
Max MTBE Soil :	Not reported		
Soil Qualifier :	Not reported		
Hydr Basin #:	Not reported		
Operator :	Not reported		
Oversight Prgm:	LOCNL		
Review Date :	Not reported		
Stop Date :	Not reported		
Work Suspended :	Not reported		
Responsible Party	Not reported		
RP Address:	Not reported		
Global Id:	T0608119285		
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		
Summary :	11/14 EDR;12/12WP; MTBE DATE 4/20/98. 11/14 EDR;12/12WP; MTBE DATE 4/20/98.		
Cross Street:	Not reported		
Qty Leaked:	Not reported		
Case Number	Not reported		
Reg Board:	9		
Chemical:	Unleaded Gasoline		

ARCO (Continued) **S106163853**

Lead Agency:	Local Agency		
Local Agency :	37000L		
Case Type:	FT		
Status:	Case Closed		
Review Date:	Not reported	Confirm Leak:	Not reported
Workplan:	1965-01-03 00:00:00	Prelim Assess:	1965-01-03 00:00:00
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	1965-01-03 00:00:00		
Monitoring:	Not reported		
Close Date:	1989-11-27 00:00:00		
Release Date:	Not reported		
Cleanup Fund Id :	Not reported		
Discover Date :	Not reported		
Enforcement Dt :	Not reported		
Enf Type:	Not reported		
Enter Date :	Not reported		
Funding:	Not reported		
Staff Initials:	VMI		
How Discovered:	Not reported		
How Stopped:	Not reported		
Interim :	Not reported		
Leak Cause:	Not reported		
Leak Source:	Not reported		
MTBE Date :	Not reported		
Max MTBE GW :	Not reported		
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.		
Priority:	10		
Local Case # :	Not reported		
Beneficial:	Not reported		
Staff :	UNK		
GW Qualifier :	Not reported		
Max MTBE Soil :	Not reported		
Soil Qualifier :	Not reported		
Hydr Basin #:	Not reported		
Operator :	Not reported		
Oversight Prgm:	LOCNL		
Review Date :	Not reported		
Stop Date :	Not reported		
Work Suspended :	Not reported		
Responsible Party	Not reported		
RP Address:	Not reported		
Global Id:	T0608177469		
Org Name:	Not reported		
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		
Summary :	11/14 EDR;12/12WP; MTBE DATE 4/20/98.		
	11/14 EDR;12/12WP; MTBE DATE 4/20/98.		

A8
NE
1/8-1/4
662 ft.

DAVID V TOLLISON
2306 S ESCONDIDO BL
ESCONDIDO, CA 92025

LUST S105693311
N/A

Site 7 of 8 in cluster A

Relative:
Lower

Actual:
614 ft.

State LUST:

Cross Street:	Not reported
Qty Leaked:	Not reported
Case Number	Not reported
Reg Board:	9
Chemical:	Not reported
Lead Agency:	Local Agency
Local Agency :	37000L
Case Type:	FT
Status:	Case Closed
Review Date:	Not reported
Workplan:	1965-01-03 00:00:00
Pollution Char:	Not reported
Remed Action:	1965-01-03 00:00:00
Monitoring:	Not reported
Close Date:	1988-06-09 00:00:00
Release Date:	Not reported
Cleanup Fund Id :	Not reported
Discover Date :	Not reported
Enforcement Dt :	Not reported
Enf Type:	Not reported
Enter Date :	Not reported
Funding:	Not reported
Staff Initials:	VMI
How Discovered:	Not reported
How Stopped:	Not reported
Interim :	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
MTBE Date :	Not reported
Max MTBE GW :	Not reported
MTBE Tested:	Not Required to be Tested.
Priority:	10
Local Case # :	Not reported
Beneficial:	Not reported
Staff :	UNK
GW Qualifier :	Not reported
Max MTBE Soil :	Not reported
Soil Qualifier :	Not reported
Hydr Basin #:	Not reported
Operator :	Not reported
Oversight Prgm:	LOCNL
Review Date :	Not reported
Stop Date :	Not reported
Work Suspended :	Not reported
Responsible Party	Not reported
RP Address:	Not reported
Global Id:	T0608107392
Org Name:	Not reported
Contact Person:	Not reported
MTBE Conc:	0
Mtbe Fuel:	0
Water System Name:	Not reported

Confirm Leak:	Not reported
Prelim Assess:	1965-01-03 00:00:00
Remed Plan:	Not reported

DAVID V TOLLISON (Continued) S105693311

Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary : 11/14 EDR;12/12WP; MTBE DATE 4/20/98.

A9
NE
1/8-1/4
662 ft.

ARCO #1948 LUST S105691818
2306 S ESCONDIDO BL N/A
ESCONDIDO, CA 92025

Site 8 of 8 in cluster A

Relative:
Lower

Actual:
614 ft.

State LUST:

Cross Street:	Not reported		
Qty Leaked:	Not reported		
Case Number	9UT2425		
Reg Board:	9		
Chemical:	Regular Gasoline		
Lead Agency:	Local Agency		
Local Agency :	37000L		
Case Type:	Drinking Water Aquifer affected		
Status:	Preliminary site assessment underway		
Review Date:	Not reported	Confirm Leak:	Not reported
Workplan:	1990-02-09 00:00:00	Prelim Assess:	1990-02-09 00:00:00
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	1965-01-03 00:00:00		
Monitoring:	Not reported		
Close Date:	Not reported		
Release Date:	Not reported		
Cleanup Fund Id :	Not reported		
Discover Date :	Not reported		
Enforcement Dt :	Not reported		
Enf Type:	Warning/notice of violation to uncooperative responsible parties (includes CDO and CAO)		
Enter Date :	Not reported		
Funding:	Not reported		
Staff Initials:	MDA		
How Discovered:	Not reported		
How Stopped:	Not reported		
Interim :	Not reported		
Leak Cause:	Not reported		
Leak Source:	Not reported		
MTBE Date :	1965-01-01 00:00:00		
Max MTBE GW :	1500.00 Parts per Billion		
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected		
Priority:	2A		
Local Case # :	Not reported		
Beneficial:	Not reported		
Staff :	UNK		
GW Qualifier :	=		
Max MTBE Soil :	0.01 Parts per Million		
Soil Qualifier :	<		
Hydr Basin #:	UNNAMED BASIN		
Operator :	Not reported		
Oversight Prgm:	LUST		
Review Date :	Not reported		
Stop Date :	Not reported		
Work Suspended :	Not reported		
Responsible Party	Not reported		
RP Address:	Not reported		

ARCO #1948 (Continued) S105691818

Global Id: T0607301190
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 4
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
Summary : 11/14 EDR;12/12WP; MTBE DATE 4/20/98.

B10 **BROTHERTON PLAZA** LUST S104890820
NNE **2250 S ESCONDIDO BL** N/A
1/8-1/4 **ESCONDIDO, CA 92025**
947 ft.

Site 1 of 2 in cluster B

Relative:
Lower

Actual:
613 ft.

State LUST:
Cross Street: Not reported
Qty Leaked: Not reported
Case Number N/A
Reg Board: 9
Chemical: Not reported
Lead Agency: Local Agency
Local Agency : 37000L
Case Type: Soil only
Status: Case Closed
Review Date: Not reported
Confirm Leak: Not reported
Workplan: 1996-06-15 00:00:00
Prelim Assess: 1996-06-15 00:00:00
Pollution Char: Not reported
Remed Plan: Not reported
Remed Action: 2001-02-26 00:00:00
Monitoring: Not reported
Close Date: 2001-04-05 00:00:00
Release Date: Not reported
Cleanup Fund Id : Not reported
Discover Date : Not reported
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : Not reported
Funding: Not reported
Staff Initials: SNA
How Discovered: Not reported
How Stopped: Not reported
Interim : Not reported
Leak Cause: Not reported
Leak Source: Not reported
MTBE Date : Not reported
Max MTBE GW : Not reported
MTBE Tested: Not Required to be Tested.
Priority: 3VA
Local Case # : Not reported
Beneficial: Not reported
Staff : UNK
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: LOCNL

BROTHERTON PLAZA (Continued) S104890820

Review Date : Not reported
Stop Date : Not reported
Work Suspended :Not reported
Responsible PartyNot reported
RP Address: Not reported
Global Id: T0608141457
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
Summary : 11/14 EDR;12/12WP; MTBE DATE 4/20/98.

B11 **BROTHERTON PLAZA** REF S106797679
NNE **2250 S. ESCONDIDO BLVD.** N/A
1/8-1/4 **ESCONDIDO, CA 92025**
991 ft.

Site 2 of 2 in cluster B

Relative:
Lower

Actual:
613 ft.

REF:
Facility ID 37000025
Dtsc Region Code : 4
Region Code Definition : CYPRESS
County Code : 37
Site Name Under : Not reported
Current Status Date : 03072001
Current Status Code : REFOA
Current Status : PROPERTY/SITE REFERRED TO ANOTHER AGENCY
Lead Agency Code : CNTY
Lead Agency : COUNTY
Site Type Code : 1248
Site Type : 1248 - LOCAL CLEANUP AGREEMENTS
National Priorities List : N
Tier : Not reported
Source Of Funding Code : Not reported
Staff Member : Not reported
Supervisor : Not reported
Sic Code : 00
Sic Code Definition : PROPERTIES THAT DO NOT HAVE SIC CODES
Site Mitigatn & Brnflds Reuse Prog (SMBR) Code : SB
SMBR Branch : SO CAL - CYPRESS
Regional Water Quality Control Board : Not reported
RWQCB Definition : Not reported
Site Access Controlled : Not reported
Listed In Haz Wst & Substncs Sites List (CORTESE):Not reported
Date Hazard Ranked : Not reported
GW Contamination Suspected : Not reported
Of Sources Contributing To Contamination : 0
Lat/Long : 0° 0′ 0″ / 0° 0′ 0″
Direction Lat : Not reported
Direction Long : Not reported
Lat/long Method : Not reported
Entity Lat/long Coordinates Refer To : Not reported
State Assembly Distt Code : 75
State Senate Distt Code : 38

BROTHERTON PLAZA (Continued) S106797679

Identifying Code: Not reported
ID Value: Not reported
Other ID Desc: Not reported
Alternate Name(s): BROTHERTON PLAZA
Address(es) : 2250 S. ESCONDIDO BLVD.
ESCONDIDO, CA 92025
Background Info : Not reported
Facility Id : Not reported
AWP Activities Code : Not reported
DTSC Site Activity Code : Not reported
Activity Code Def: Not reported
AWP Activity Id : Not reported
Dt Activity Due For Completion : Not reported
Revised Due Date : Not reported
Date Activity Completed : Not reported
Est # Of Person-years To Complete : Not reported
Est. Size Of An Activity Code : Not reported
Site Status When Activity Commitment Made : Not reported
Status Code Definition : Not reported
Cubic Yards Of Solids Removed At Completion : Not reported
Gallons Of Liquid Removed Upon Completion : Not reported
Cubic Yards Of Solids Treated Upon Completion : Not reported
Actvty Deleted Via Commitmnt/Completns Screen : Not reported
Special Program Code: Not reported
Special Program : Not reported
Comments Date : 03072001
Comments : DTSC received an SB 1248 Notification from the County of San Diego Department of Environmental Health for their review of an environmental assessment of the subject property.

C12 **2698 SO. ESCONDIDO BLVD.** Notify 65 S100178374
SSE **PS NO2** N/A
1/4-1/2 **ESCONDIDO, CA**
1892 ft.

Site 1 of 2 in cluster C

Relative: Lower

Actual: 557 ft.

NOTIFY 65:
Date Reported: Not reported Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Incident Description: Not Reported

C13 **2698 SO. ESCONDIDO BLVD** Notify 65 S100178375
SSE **PS NO2** N/A
1/4-1/2 **ESCONDIDO, CA**
1892 ft.

Site 2 of 2 in cluster C

Relative: Lower

Actual: 557 ft.

NOTIFY 65:
Date Reported: Not reported Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Incident Description: Not Reported

14
NNE
1/4-1/2
2231 ft.

Relative:
Equal

Actual:
617 ft.

LIFT STATION 3
2045 SO. ESCONDIDO BLVD.
ESCONDIDO, CA 92025

Database(s): Notify 65
EDR ID Number: S100178215
EPA ID Number: N/A

NOTIFY 65:

Date Reported:	Not reported	Staff Initials:	Not reported
Board File Number:	Not reported		
Facility Type:	Not reported		
Discharge Date:	Not reported		
Incident Description:	92025-8207		

15
South
1/4-1/2
2236 ft.

Relative:
Lower

Actual:
547 ft.

FORMER HARRIS TEXACO
2690 ESCONDIDO BLVD S
ESCONDIDO, CA 92025

Database(s): LUST, Cortese
EDR ID Number: S101301617
EPA ID Number: N/A

LUST Region 9:

Case Number:	9UT2380	Release Date:	02/15/1991
Local Agency:	37000		
Substance:	8006619	Qty Leaked:	Not reported
Date Found:	02/15/1991	How Found:	Subsurface Monitoring
Date Stopped:	/ /	How Stopped:	Not reported
Source:	Unknown	Cause:	Unknown
Lead Agency:	Local Agency		
Status:	Preliminary site assessment underway		
Case Type:	Drinking Water Aquifer affected		
Confirm Date:	Not reported	Submit Workplan:	Not reported
Prelim Assess:	Not reported	Desc Pollution:	Not reported
Remed Plan:	Not reported	Remed Action:	Not reported
Began Monitor:	Not reported	Closed Date:	Not reported
Enforce Type:	Not reported		
Enforce Date:	Not reported		
Pilot Program:	LOP	Local Case:	H05347-001
Basin Number:	905.21	Gwater Depth:	Not reported
File Dispn:	Not reported		

Interim Remedial Actions:	No
Beneficial Use:	MUN
Cleanup and Abatement order Number:	Not reported
Waste Discharge Requirement Number:	Not reported
NPDES Number:	Not reported

CORTESE:

Region:	CORTESE
Fac Address 2:	2690 ESCONDIDO BLVD S

D16
West
1/2-1
4959 ft.

Site 1 of 2 in cluster D

Relative:
Higher

Actual:
653 ft.

CHATHAM BROTHERS BARRELS
2257 BERNARDO AVENUE
ESCONDIDO, CA 92025

Database(s): CA BOND EXP. PLAN
EDR ID Number: S100833381
EPA ID Number: N/A

BEP:

Site Description :	The site was formerly a permitted industrial waste recycling and disposal facility that closed in 1982. Various industrial solvents and waste oil were brought to the facility by local businesses in the area.
Hazardous Waste Desc :	Soils are contaminated by heavy metals, polychlorinated biphenyls (PCBs), volatile organics (VOCs) and base/neutral organic compounds. VOCs were detected in samples collected from an onsite ground water monitoring wells.
Threat To Public Health & Env :	There is a threat of ground water contamination. Although the use of the upper aquifer in the immediate area is limited to irrigation, there is a

CHATHAM BROTHERS BARRELS (Continued) S100833381

potential for migration of site contaminants. There is also a threat of human exposure by direct contactto contaminated soils onsite and to runoff during rainfall.

Site Activity Status : DHS issued a remedial action order to potentially responsible parties (PRPs) in January, 1986. The PRPs failed to respond and were found in noncompliance with the order in April, 1986. The Department is preparing an engineering and cost analysis foran expedited response involving soil removal, removal of buried drums and surface water removal which is planned for the early Spring/Summer of 1989 depending upon weather conditions. In addition, ground water remedial investigation activities are also ongoing.

Project Revenue Source Co. : Not Reported
PRS Company Address : Not reported
Not reported

Project Revenue Source Desc : It appears at this time that it will continue to be necessary to utilize Bond funds to remediate this site. The Department will undertake appropriate cost recovery action. This site has not been identified as a National Priorities List (NPL) site, nor does it appear to be a likely NPL candidate in the future. Therefore, it appears unlikely that federal funds are a viable source of revenue for this site.

Responsible Party : DETAILED SITE EXPENDITURE PLAN

D17
West
1/2-1
4959 ft.

Relative:
Higher

Actual:
653 ft.

CHATHAM BROTHERS BARREL YARD
2257 BERNARDO AVE
ESCONDIDO, CA 92025

Site 2 of 2 in cluster D

Cal-Sites 1000857048
RCRA-SQG CA0000031641
FINDS
HAZNET
AWP
CA SLIC

RCRAInfo:
Owner: CHATHAM SITE PRP GROUP TRUST
(619) 555-2924
EPA ID: CA0000031641

Contact: Not reported

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Comprehensive Environmental Response, Compensation and Liability Information System
Resource Conservation and Recovery Act Information system

CAL-SITES:
Facility ID 37490029
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Date: 04/18/1996
Lead: DTSC
Region: 4 - CYPRESS
Branch: SB - SO CAL - CYPRESS
File Name: Not reported
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL Not reported
NPL: Not Listed
SIC: 49 ELECTRIC, GAS & SANITARY SERVICES
Facility Type: RP
Type Name: RESPONSIBLE PARTY
Staff Member Responsible for Site: JCULLY

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Supervisor Responsible for Site:	Not reported
Region Water Control Board:	SD - SAN DIEGO
Access:	Not reported
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
No. of Contamination Sources:	2
Lat/Long:	Not reported
Lat/long Method:	Not reported
State Assembly District Code:	75
State Senate District:	38

Click this hyperlink while viewing on your computer to access additional CAL-SITES detail in the EDR Site Report.

HAZNET:

Gepaid:	CA0000031641
TSD EPA ID:	AZD982441263
Gen County:	San Diego
Tsd County:	99
Tons:	1.8000
Waste Category:	Organic solids with halogens
Disposal Method:	Treatment, Incineration
Contact:	JOHN BURNHAM AND COMPANY
Telephone:	(909) 360-0595
Mailing Address:	3200 PYRITE ST UNIT C RIVERSIDE, CA 92509
County	San Diego

Gepaid:	CA0000031641
TSD EPA ID:	CAT000646117
Gen County:	San Diego
Tsd County:	Kings
Tons:	3.3712
Waste Category:	Contaminated soil from site clean-ups
Disposal Method:	Disposal, Land Fill
Contact:	JOHN BURNHAM AND COMPANY
Telephone:	(909) 360-0595
Mailing Address:	3200 PYRITE ST UNIT C RIVERSIDE, CA 92509
County	San Diego

Gepaid:	CA0000031641
TSD EPA ID:	AZD982441263
Gen County:	San Diego
Tsd County:	99
Tons:	2.0000
Waste Category:	Organic solids with halogens
Disposal Method:	Treatment, Incineration
Contact:	JOHN BURNHAM AND COMPANY
Telephone:	(909) 360-0595
Mailing Address:	3200 PYRITE ST UNIT C RIVERSIDE, CA 92509
County	San Diego

CHATHAM BROTHERS BARREL YARD (Continued) **1000857048**

Gepaid: CA0000031641
TSD EPA ID: AZD982441263
Gen County: San Diego
Tsd County: 99
Tons: 2.7000
Waste Category: Organic solids with halogens
Disposal Method: Treatment, Incineration
Contact: JOHN BURNHAM AND COMPANY
Telephone: (909) 360-0595
Mailing Address: 3200 PYRITE ST UNIT C
RIVERSIDE, CA 92509
County San Diego

Gepaid: CA0000031641
TSD EPA ID: AZD982441263
Gen County: San Diego
Tsd County: 99
Tons: 10.1500
Waste Category: Organic solids with halogens
Disposal Method: Not reported
Contact: JOHN BURNHAM AND COMPANY
Telephone: (909) 360-0595
Mailing Address: 3200 PYRITE ST UNIT C
RIVERSIDE, CA 92509
County San Diego

Click this hyperlink while viewing on your computer to access
14 additional CA HAZNET record(s) in the EDR Site Report.

AWP Facility ID: 37490029
Facility Type: responsible party
Site Access Controlled : Not reported
Region Code : 4
Region : CYPRESS
SMBR Branch Unit: SO CAL - CYPRESS
SMBR Branch Code : SB
Site Name. : Not reported
Current Status Date : 19/96/0418
Current Status : ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code : DTSC
Lead Agency : DEPT OF TOXIC SUBSTANCES CONTROL
NPL : No
Tier Of AWP Site : Not reported
Source Of Funding : Not reported
Responsible Staff Member : JCULLY
Supervisor Responsible : Not reported
Facility SIC : ELECTRIC, GAS & SANITARY SERVICES
SIC Code : 49
RWQCB Associated With Site SAN DIEGO
RWQCB Code : SD
Site Listed HWS List : Not reported
Hazard Ranking Score : Not reported
Date Site Hazard Ranked : Not reported
Groundwater Contamination : Confirmed
Of Contamination Sources : 2
Lat/long Method : Not reported
Description Of Entity : Not reported
State Assembly Distt Code : 75

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

State Senate District : 38
Lat/long : 0° 0′ 0″ / 0° 0′ 0″

CA STATE SLIC :
Global Id : SL209094184
Region : STATE
Assigned Name : SLICSITE
Lead Agency Contact : Not reported
Lead Agency : DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Lead Agency Case Number : 37490029
Responsible Party : DE MAXIMIS INC
Recent Dtw : Not reported
Facility Status : Remedial Action Underway
Substance Released : MET, PCB, SVO, VOC

SLIC Region 9:
Region : 9
Date Entered : 10/1962
Code : 20-0269.05
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENFORCEMENT
File Number : 1
End Date : 10/1962
Facility Status : M
Archive Box # : 319
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : K

Region : 9
Date Entered : 11/1962
Code : 20-0269.05
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENFORCEMENT
File Number : 2
End Date : 03/1983
Facility Status : M
Archive Box # : 319
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : K

Region : 9
Date Entered : 04/1984
Code : 20-0269.05
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Category :	ENFORCEMENT
File Number :	3
End Date :	07/1985
Facility Status :	M
Archive Box # :	319
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	08/1985
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	4
End Date :	09/1989
Facility Status :	M
Archive Box # :	319
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	10/1989
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	5
End Date :	07/1993
Facility Status :	M
Archive Box # :	319
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	08/1993
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	6
End Date :	04/1994

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Facility Status :	M
Archive Box # :	319
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	05/1994
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	7
End Date :	11/1994
Facility Status :	M
Archive Box # :	319
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	12/1994
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	8
End Date :	01/1995
Facility Status :	M
Archive Box # :	319
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	01/1995
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	9
End Date :	04/1995
Facility Status :	M
Archive Box # :	319
Archive Box Storage :	Not reported

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K
Region :	9
Date Entered :	05/1995
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	10
End Date :	07/1995
Facility Status :	M
Archive Box # :	320
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K
Region :	9
Date Entered :	07/1995
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	11
End Date :	10/1995
Facility Status :	M
Archive Box # :	320
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K
Region :	9
Date Entered :	10/1995
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	12
End Date :	01/1996
Facility Status :	M
Archive Box # :	320
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : K

Region : 9
Date Entered : 02/1996
Code : 20-0269.05
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENFORCEMENT
File Number : 13
End Date : 04/1996
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 05/1996
Code : 20-0269.05
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENFORCEMENT
File Number : 14
End Date : 08/1996
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 09/1996
Code : 20-0269.05
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENFORCEMENT
File Number : 15
End Date : 11/1996
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Region : 9
Date Entered : 11/1996
Code : 20-0269.05
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENFORCEMENT
File Number : 16
End Date : 02/1997
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 03/1997
Code : 20-0269.05
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENFORCEMENT
File Number : 17
End Date : 04/1997
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 04/1997
Code : 20-0269.05
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENFORCEMENT
File Number : 18
End Date : 06/1997
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 07/1997

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	19
End Date :	07/1997
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	08/1997
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	20
End Date :	09/1997
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	09/1997
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	21
End Date :	01/1998
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	01/1998
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	22
End Date :	03/1998
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	04/1998
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	23
End Date :	06/1998
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	07/1998
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	24
End Date :	10/1998
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	10/1998
Code :	20-0269.05
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENFORCEMENT
File Number :	25

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

End Date : 08/1999
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 08/1999
Code : 20-0269.05
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENFORCEMENT
File Number : 26
End Date : 06/2000
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 06/2000
Code : 20-0269.05
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENFORCEMENT
File Number : 27
End Date : Not reported
Facility Status : O
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 01/1986
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 1
End Date : 12/1987
Facility Status : M
Archive Box # : 320

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : K

Region : 9
Date Entered : 01/1988
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 2
End Date : 12/1990
Facility Status : M
Archive Box # : 320
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : K

Region : 9
Date Entered : 01/1991
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 3
End Date : 03/1991
Facility Status : M
Archive Box # : 320
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : K

Region : 9
Date Entered : 03/1991
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 4
End Date : 12/1992
Facility Status : M
Archive Box # : 320
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : K

Region : 9
Date Entered : 01/1993
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 5
End Date : 05/1993
Facility Status : M
Archive Box # : 321
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : K

Region : 9
Date Entered : 05/1993
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 6
End Date : 05/1993
Facility Status : M
Archive Box # : 321
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : K

Region : 9
Date Entered : 06/1993
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 7
End Date : 11/1993
Facility Status : M
Archive Box # : 321
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : K

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Region :	9
Date Entered :	12/1993
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	8
End Date :	12/1993
Facility Status :	M
Archive Box # :	321
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	12/1993
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	9
End Date :	12/1993
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	01/1994
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	10
End Date :	03/1994
Facility Status :	M
Archive Box # :	322
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	03/1994

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	11
End Date :	05/1994
Facility Status :	M
Archive Box # :	322
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	05/1994
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	12
End Date :	08/1994
Facility Status :	M
Archive Box # :	322
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	08/1994
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	13
End Date :	11/1994
Facility Status :	M
Archive Box # :	323
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	11/1994
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	14
End Date :	12/1994
Facility Status :	M
Archive Box # :	323
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	12/1994
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	15
End Date :	12/1994
Facility Status :	M
Archive Box # :	323
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	12/1994
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	16
End Date :	01/1995
Facility Status :	M
Archive Box # :	323
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	K

Region :	9
Date Entered :	01/1995
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	17

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

End Date : 01/1995
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 02/1995
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 18
End Date : 02/1995
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 02/1995
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 19
End Date : 02/1995
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 03/1995
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 20
End Date : 05/1995
Facility Status : C
Archive Box # : 0

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 06/1995
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 21
End Date : 08/1995
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 08/1995
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 22
End Date : 10/1995
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 10/1995
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 23
End Date : 11/1995
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 12/1995
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 24
End Date : 12/1995
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 01/1996
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 25
End Date : 03/1996
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 03/1996
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 26
End Date : 03/1996
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Region :	9
Date Entered :	04/1996
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	27
End Date :	05/1996
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	05/1996
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	28
End Date :	05/1996
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	06/1996
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	29
End Date :	11/1996
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	12/1996

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	30
End Date :	12/1996
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	01/1997
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	31
End Date :	02/1997
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	03/1997
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	32
End Date :	08/1997
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	09/1997
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	33
End Date :	02/1998
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	03/1998
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	34
End Date :	05/1998
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	06/1998
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	35
End Date :	08/1998
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	08/1998
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	36

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

End Date : 10/1998
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 11/1998
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 37
End Date : 02/1999
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 02/1999
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 38
End Date : 04/1999
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 05/1999
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 39
End Date : 08/1999
Facility Status : C
Archive Box # : 0

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 09/1999
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 40
End Date : 12/1999
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 01/2000
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 41
End Date : 04/2000
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 05/2000
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 42
End Date : 07/2000
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 08/2000
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 43
End Date : 11/2000
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 12/2000
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 44
End Date : 03/2001
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

Region : 9
Date Entered : 03/2001
Code : 20-0269.051
Local Case Num : 2090900
Class : SLIC
Facility Type : Not reported
Category : ENF. REPORT
File Number : 45
End Date : 03/2001
Facility Status : C
Archive Box # : 0
Archive Box Storage : Not reported
Remarks : Not reported
Waste Discharge ID : 9 000269N97
Order Number : Not reported
Agency Operator / Resp Party : CHATHAM BROTHERS
Facility Location / Desc : Not reported

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Region :	9
Date Entered :	03/2001
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	46
End Date :	05/2001
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	05/2001
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	47
End Date :	08/2001
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	08/2001
Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	48
End Date :	10/2001
Facility Status :	C
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

Region :	9
Date Entered :	11/2001

CHATHAM BROTHERS BARREL YARD (Continued) 1000857048

Code :	20-0269.051
Local Case Num :	2090900
Class :	SLIC
Facility Type :	Not reported
Category :	ENF. REPORT
File Number :	49
End Date :	Not reported
Facility Status :	O
Archive Box # :	0
Archive Box Storage :	Not reported
Remarks :	Not reported
Waste Discharge ID :	9 000269N97
Order Number :	Not reported
Agency Operator / Resp Party :	CHATHAM BROTHERS
Facility Location / Desc :	Not reported

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
ESCONDIDO	S105690954	VACANT LOT (5TH AND PINE)	505 W 05TH AV	92025	LUST
ESCONDIDO	S105155610	DIXON DAM	DIXON DAM/LAKE DIXON SPILLWAY		SWF/LF
ESCONDIDO	1006932061	BENTON BURN DUMP	END OF STILL WATER GLEN		CERCLIS
ESCONDIDO	S105694061	ESCONDIDO NISSAN INC	728 ESCONDIDO BL	92025	LUST
ESCONDIDO	S105548883	ESCONDIDO 1 (MAYHEW) BURNSITE	GREENWOOD PLACE		SWF/LF
ESCONDIDO	S101311431	EAST ESCONDIDO DUMP	WEST HWY 78 / 4 MILES SE ESCON		WMUDS/SWAT
ESCONDIDO	1000710152	SANTA YSABEL CREEK GROUNDWATER CONTAMIN.	1.5 MILES SE OF ESCONDIDO	92025	CERCLIS, FINDS
ESCONDIDO	S102362201	BENTON DUMP	EL NORTE PARKWAY		SWF/LF
ESCONDIDO	S105155600	BENTON DUMP	STILWATER GLEN		SWF/LF

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: 12/14/04
Date Made Active at EDR: 02/03/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 02/01/05
Elapsed ASTM days: 2
Date of Last EDR Contact: 02/01/05

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: 12/14/04
Date Made Active at EDR: 02/03/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 02/01/05
Elapsed ASTM days: 2
Date of Last EDR Contact: 02/01/05

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: 02/15/05
Date Made Active at EDR: 04/06/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/22/05
Elapsed ASTM days: 15
Date of Last EDR Contact: 03/22/05

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: 03/22/05
Date Made Active at EDR: 04/06/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/01/05
Elapsed ASTM days: 5
Date of Last EDR Contact: 04/01/05

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/15/04
Date Made Active at EDR: 02/25/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 01/07/05
Elapsed ASTM days: 49
Date of Last EDR Contact: 03/07/05

RCRA: Resource Conservation and Recovery Act Information
Source: EPA
Telephone: 800-424-9346
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database 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: 03/13/05
Date Made Active at EDR: 04/25/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/23/05
Elapsed ASTM days: 33
Date of Last EDR Contact: 03/23/05

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: 12/31/04
Date Made Active at EDR: 03/24/05
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/27/05
Elapsed ASTM days: 56
Date of Last EDR Contact: 04/25/05

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: 04/15/05
Date of Next Scheduled EDR Contact: 06/13/05

CONSENT: Superfund (CERCLA) Consent Decrees
Source: Department of Justice, Consent Decree Library
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: 12/14/04
Database Release Frequency: Varies

Date of Last EDR Contact: 04/26/05
Date of Next Scheduled EDR Contact: 07/25/05

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: 01/10/05
Database Release Frequency: Annually

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

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: 12/14/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/01/05
Date of Next Scheduled EDR Contact: 05/02/05

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: 01/12/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

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: 11/16/04
Database Release Frequency: Annually

Date of Last EDR Contact: 04/19/05
Date of Next Scheduled EDR Contact: 07/18/05

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: 01/12/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

MINES: Mines Master Index File
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/15/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 03/30/05
Date of Next Scheduled EDR Contact: 06/27/05

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: 02/22/05
Date of Next Scheduled EDR Contact: 05/23/05

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: 12/21/04
Database Release Frequency: Annually

Date of Last EDR Contact: 02/23/05
Date of Next Scheduled EDR Contact: 05/09/05

DOD: Department of Defense Sites
Source: USGS
Telephone: 703-692-8801
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: 02/08/05
Date of Next Scheduled EDR Contact: 05/09/05

UMTRA: Uranium Mill Tailings Sites
Source: Department of Energy
Telephone: 505-845-0011
Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized. In 1978, 24 inactive uranium mill tailings sites in Oregon, Idaho, Wyoming, Utah, Colorado, New Mexico, Texas, North Dakota, South Dakota, Pennsylvania, and on Navajo and Hopi tribal lands, were targeted for cleanup by the Department of Energy.

Date of Government Version: 12/29/04
Database Release Frequency: Varies

Date of Last EDR Contact: 03/22/05
Date of Next Scheduled EDR Contact: 06/20/05

ODI: Open Dump Inventory
Source: Environmental Protection Agency
Telephone: 800-424-9346
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/85
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/23/95
Date of Next Scheduled EDR Contact: N/A

FUDS: Formerly Used Defense Sites
Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/03
Database Release Frequency: Varies

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

INDIAN RESERV: Indian Reservations
Source: USGS
Telephone: 202-208-3710
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 10/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/08/05
Date of Next Scheduled EDR Contact: 05/09/05

US ENG CONTROLS: Engineering Controls Sites List
Source: Environmental Protection Agency
Telephone: 703-603-8867
A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/10/05
Database Release Frequency: Varies

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

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: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-566-0250
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: 12/31/02
Database Release Frequency: Annually

Date of Last EDR Contact: 03/22/05
Date of Next Scheduled EDR Contact: 06/20/05

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: 01/01/05
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 04/05/05
Date of Next Scheduled EDR Contact: 06/06/05

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-566-1667

Date of Government Version: 04/13/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/21/05
Date of Next Scheduled EDR Contact: 06/20/05

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: 12/31/03
Database Release Frequency: Annually
Date of Last EDR Contact: 04/19/05
Date of Next Scheduled EDR Contact: 07/18/05

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: 202-566-1667
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: 09/13/04
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/21/05
Date of Next Scheduled EDR Contact: 06/20/05

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: 02/07/05
Date Made Active at EDR: 04/05/05
Database Release Frequency: Annually
Date of Data Arrival at EDR: 03/01/05
Elapsed ASTM days: 35
Date of Last EDR Contact: 03/01/05

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: 02/07/05
Date Made Active at EDR: 04/05/05
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 03/01/05
Elapsed ASTM days: 35
Date of Last EDR Contact: 03/01/05

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: 12/31/03
Date Made Active at EDR: 06/25/04
Database Release Frequency: Varies
Date of Data Arrival at EDR: 05/18/04
Elapsed ASTM days: 38
Date of Last EDR Contact: 02/23/05

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). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/01
Date Made Active at EDR: 07/26/01
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 05/29/01
Elapsed ASTM days: 58
Date of Last EDR Contact: 04/25/05

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 Made Active at EDR: 11/19/93
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 11/01/93
Elapsed ASTM days: 18
Date of Last EDR Contact: 04/18/05

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 Made Active at EDR: 09/26/95
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 08/30/95
Elapsed ASTM days: 27
Date of Last EDR Contact: 02/01/05

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 inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/14/05
Date Made Active at EDR: 04/05/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/15/05
Elapsed ASTM days: 21
Date of Last EDR Contact: 03/15/05

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 Made Active at EDR: 05/10/00
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/10/00
Elapsed ASTM days: 30
Date of Last EDR Contact: 03/07/05

LUST: Geotracker's Leaking Underground Fuel Tank Report
Source: State Water Resources Control Board
Contact: San Diego County Dept of Env Health, (619) 338-2395
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: 01/10/05
Date Made Active at EDR: 02/21/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 01/10/05
Elapsed ASTM days: 42
Date of Last EDR Contact: 04/13/05

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 Made Active at EDR: 08/02/94
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 07/27/94
Elapsed ASTM days: 6
Date of Last EDR Contact: 05/31/94

CA UST:

UST: Active UST Facilities
Source: SWRCB
Contact: San Diego County Dept of Env Health, (619) 338-2395
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 04/12/05
Date Made Active at EDR: 05/06/05
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 04/13/05
Elapsed ASTM days: 23
Date of Last EDR Contact: 04/13/05

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: 02/07/05
Date Made Active at EDR: 03/31/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/01/05
Elapsed ASTM days: 30
Date of Last EDR Contact: 03/01/05

INDIAN LUST: Leaking Underground Storage Tanks on Indian Land
Source: Environmental Protection Agency
Telephone: 415-972-3372
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 03/18/05
Date Made Active at EDR: 04/13/05
Database Release Frequency: Varies

Date of Data Arrival at EDR: 03/21/05
Elapsed ASTM days: 23
Date of Last EDR Contact: 02/22/05

INDIAN LUST: Leaking Underground Storage Tanks on Indian Land
Source: EPA Region 10
Telephone: 206-553-2857
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/02/05
Date Made Active at EDR: 03/28/05
Database Release Frequency: Varies

Date of Data Arrival at EDR: 02/02/05
Elapsed ASTM days: 54
Date of Last EDR Contact: 01/31/05

INDIAN UST: Underground Storage Tanks on Indian Land
Source: EPA Region 9
Telephone: 415-972-3368

Date of Government Version: 11/02/04
Date Made Active at EDR: 12/13/04
Database Release Frequency: Varies

Date of Data Arrival at EDR: 11/03/04
Elapsed ASTM days: 40
Date of Last EDR Contact: 02/22/05

CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-341-5851
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: 916-341-5851
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: 02/01/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/24/05
Date of Next Scheduled EDR Contact: 05/02/05

CLEANERS: Cleaner Facilities
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
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: 04/18/05
Database Release Frequency: Annually

Date of Last EDR Contact: 04/15/05
Date of Next Scheduled EDR Contact: 07/04/05

CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-341-5227
Sites which have been issued waste discharge requirements.

Date of Government Version: 03/21/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/22/05
Date of Next Scheduled EDR Contact: 06/20/05

DEED: Deed Restriction Listing
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 04/05/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

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: 02/07/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/01/05
Date of Next Scheduled EDR Contact: 05/30/05

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: 12/31/02
Database Release Frequency: Varies

Date of Last EDR Contact: 04/22/05
Date of Next Scheduled EDR Contact: 07/18/05

WIP: Well Investigation Program Case List
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 04/26/05
Database Release Frequency: Varies

Date of Last EDR Contact: 04/25/05
Date of Next Scheduled EDR Contact: 07/25/05

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: 02/07/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/01/05
Date of Next Scheduled EDR Contact: 05/30/05

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: 02/07/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/01/05
Date of Next Scheduled EDR Contact: 05/30/05

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: 02/07/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/01/05
Date of Next Scheduled EDR Contact: 05/30/05

SLIC: Statewide SLIC Cases
Source: State Water Resources Control Board
Contact: San Diego County Dept of Env Health, (619) 338-2395
The Spills, Leaks, Investigations, and Cleanups (SLIC) listings includes unauthorized discharges from spills and leaks, other than from underground storage tanks or other regulated sites.

Date of Government Version: 04/12/05
Database Release Frequency: Varies

Date of Last EDR Contact: 04/13/05
Date of Next Scheduled EDR Contact: 07/11/05

HAZNET: Facility and Manifest Data
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: 12/31/02
Database Release Frequency: Annually

Date of Last EDR Contact: 02/17/05
Date of Next Scheduled EDR Contact: 05/09/05

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: 02/14/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/25/05
Date of Next Scheduled EDR Contact: 07/25/05

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 02/15/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/25/05
Date of Next Scheduled EDR Contact: 07/25/05

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: 03/04/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/28/05
Date of Next Scheduled EDR Contact: 05/30/05

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: 03/31/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/19/05
Date of Next Scheduled EDR Contact: 05/09/05

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 12/13/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

LOS ANGELES COUNTY:

List of Solid Waste Facilities
Source: La County Department of Public Works
Telephone: 818-458-5185

Date of Government Version: 02/01/05
Database Release Frequency: Varies

Date of Last EDR Contact: 02/18/05
Date of Next Scheduled EDR Contact: 05/16/05

City of El Segundo Underground Storage Tank
Source: City of El Segundo Fire Department
Telephone: 310-524-2236

Date of Government Version: 02/14/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/14/05
Date of Next Scheduled EDR Contact: 05/16/05

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: 02/23/05
Date of Next Scheduled EDR Contact: 05/23/05

City of Torrance Underground Storage Tank
Source: City of Torrance Fire Department
Telephone: 310-618-2973

Date of Government Version: 03/24/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/28/05
Date of Next Scheduled EDR Contact: 05/16/05

City of Los Angeles Landfills
Source: Engineering & Construction Division
Telephone: 213-473-7869

Date of Government Version: 03/01/05
Database Release Frequency: Varies

Date of Last EDR Contact: 03/18/05
Date of Next Scheduled EDR Contact: 06/13/05

HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 02/28/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/14/05
Date of Next Scheduled EDR Contact: 05/16/05

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: 03/09/05
Database Release Frequency: Annually

Date of Last EDR Contact: 02/14/05
Date of Next Scheduled EDR Contact: 05/16/05

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: 02/08/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/31/05
Date of Next Scheduled EDR Contact: 05/02/05

NAPA COUNTY:

Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 03/29/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 03/28/05
Date of Next Scheduled EDR Contact: 06/27/05

Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 03/29/05
Database Release Frequency: Annually

Date of Last EDR Contact: 03/28/05
Date of Next Scheduled EDR Contact: 06/27/05

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: 02/01/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/11/05
Date of Next Scheduled EDR Contact: 06/06/05

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: 03/01/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/11/05
Date of Next Scheduled EDR Contact: 06/06/05

List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 03/01/05
Database Release Frequency: Annually

Date of Last EDR Contact: 03/11/05
Date of Next Scheduled EDR Contact: 06/06/05

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: 04/05/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 03/21/05
Date of Next Scheduled EDR Contact: 06/20/05

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: 02/14/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/18/05
Date of Next Scheduled EDR Contact: 07/18/05

Underground Storage Tank Tank List
Source: Health Services Agency
Telephone: 909-358-5055

Date of Government Version: 02/14/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/18/05
Date of Next Scheduled EDR Contact: 07/18/05

SACRAMENTO COUNTY:

CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406

Date of Government Version: 12/30/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/04/05
Date of Next Scheduled EDR Contact: 05/02/05

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: 12/30/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/04/05
Date of Next Scheduled EDR Contact: 05/02/05

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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/25/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

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: 02/22/05
Date of Next Scheduled EDR Contact: 05/23/05

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: 06/29/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/22/05
Date of Next Scheduled EDR Contact: 07/04/05

SAN FRANCISCO COUNTY:

Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 03/09/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

Underground Storage Tank Information
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 03/09/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

SAN MATEO COUNTY:

Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921

Date of Government Version: 02/14/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/11/05
Date of Next Scheduled EDR Contact: 07/11/05

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: 02/28/05
Database Release Frequency: Annually

Date of Last EDR Contact: 04/11/05
Date of Next Scheduled EDR Contact: 07/11/05

SANTA CLARA COUNTY:

Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600

Date of Government Version: 03/29/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 03/29/05
Date of Next Scheduled EDR Contact: 06/27/05

Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659

Date of Government Version: 01/14/05
Database Release Frequency: Annually

Date of Last EDR Contact: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

SOLANO COUNTY:

Leaking Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770

Date of Government Version: 04/18/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/18/05
Date of Next Scheduled EDR Contact: 06/13/05

Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770

Date of Government Version: 12/14/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/18/05
Date of Next Scheduled EDR Contact: 06/13/05

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
Source: Department of Health Services
Telephone: 707-565-6565

Date of Government Version: 01/27/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/25/05
Date of Next Scheduled EDR Contact: 07/25/05

SUTTER COUNTY:

Underground Storage Tanks
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500

Date of Government Version: 01/29/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/18/05
Date of Next Scheduled EDR Contact: 07/04/05

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: 08/01/04
Database Release Frequency: Annually

Date of Last EDR Contact: 02/23/05
Date of Next Scheduled EDR Contact: 05/23/05

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: 03/01/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/18/05
Date of Next Scheduled EDR Contact: 06/13/05

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: 12/01/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/15/05
Date of Next Scheduled EDR Contact: 07/11/05

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: 03/01/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/18/05
Date of Next Scheduled EDR Contact: 06/13/05

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Source: Yolo County Department of Health
Telephone: 530-666-8646

Date of Government Version: 01/18/05
Database Release Frequency: Annually

Date of Last EDR Contact: 04/18/05
Date of Next Scheduled EDR Contact: 07/18/05

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: 02/23/05
Date of Next Scheduled EDR Contact: 05/23/05

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: 09/30/04
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/11/05
Date of Next Scheduled EDR Contact: 07/11/05

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: No Update Planned
Date of Last EDR Contact: 02/14/05
Date of Next Scheduled EDR Contact: 05/16/05

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: 09/07/04
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 03/29/05
Date of Next Scheduled EDR Contact: 06/27/05

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291

Date of Government Version: 04/01/05
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/19/05
Date of Next Scheduled EDR Contact: 07/04/05

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: 04/12/05
Date of Next Scheduled EDR Contact: 06/06/05

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: 08/09/04
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 04/15/05
Date of Next Scheduled EDR Contact: 07/04/05

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: 02/26/04
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 03/29/05
Date of Next Scheduled EDR Contact: 06/27/05

LUST REG 8: Leaking Underground Storage Tanks
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-4130
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: 02/14/05
Database Release Frequency: Varies
Date of Last EDR Contact: 02/08/05
Date of Next Scheduled EDR Contact: 05/09/05

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
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 04/19/05
Date of Next Scheduled EDR Contact: 07/18/05

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
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/23/05
Date of Next Scheduled EDR Contact: 05/23/05

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: 09/30/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/11/05
Date of Next Scheduled EDR Contact: 07/11/05

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: 03/21/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/14/05
Date of Next Scheduled EDR Contact: 05/23/05

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: 11/17/04
Database Release Frequency: Varies

Date of Last EDR Contact: 04/25/05
Date of Next Scheduled EDR Contact: 07/25/05

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 04/01/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/05/05
Date of Next Scheduled EDR Contact: 07/04/05

SLIC REG 6L: SLIC Sites
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574

Date of Government Version: 09/07/04
Database Release Frequency: Varies

Date of Last EDR Contact: 03/07/05
Date of Next Scheduled EDR Contact: 06/06/05

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: 01/25/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/18/05
Date of Next Scheduled EDR Contact: 07/04/05

SLIC REG 7: SLIC List
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491

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.

STREET AND ADDRESS INFORMATION

© 2004 Geographic Data Technology, Inc., Rel. 07/2004. This product contains proprietary and confidential property of Geographic Data Technology, Inc. Unauthorized use, including copying for other than testing and standard backup procedures, of this product is expressly prohibited.

Date of Government Version: 01/10/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 03/14/05
Date of Next Scheduled EDR Contact: 06/13/05

US INST CONTROL: Sites with Institutional Controls
Source: Environmental Protection Agency
Telephone: 703-603-8867
A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/10/05
Database Release Frequency: Varies

Date of Last EDR Contact: 04/04/05
Date of Next Scheduled EDR Contact: 07/04/05

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.

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).

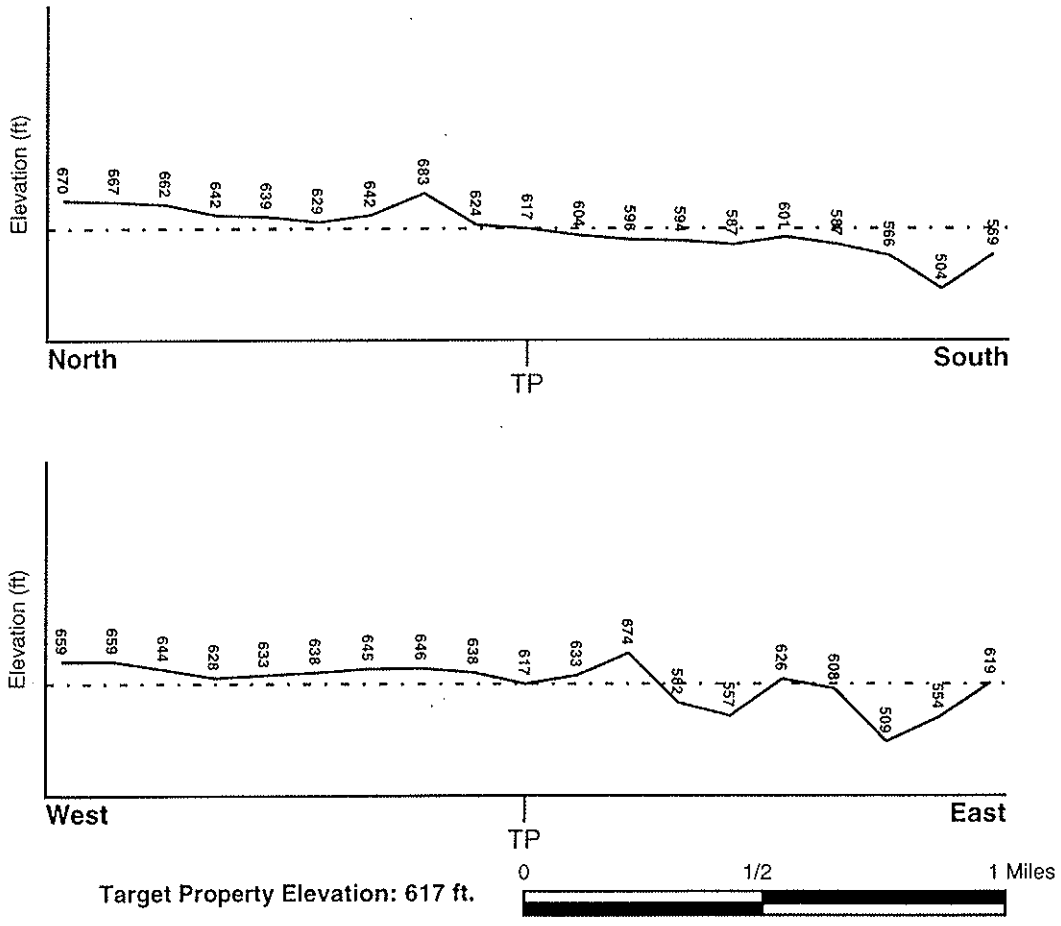
TOPOGRAPHIC INFORMATION

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:	33117-A1 ESCONDIDO, CA
General Topographic Gradient:	General SSW
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 ADDENDUM

TARGET PROPERTY ADDRESS

VACANT LOTS APN 238-130-35 AND -36
CENTRE CITY PARKWAY/BROTHERTON
ESCONDIDO, CA 92025

TARGET PROPERTY COORDINATES

Latitude (North):	33.092701 - 33° 5' 33.7"
Longitude (West):	117.072998 - 117° 4' 22.8"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	493187.6
UTM Y (Meters):	3661374.8
Elevation:	617 ft. above 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 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

Era:	Mesozoic
System:	Cretaceous
Series:	Cretaceous granitic rocks
Code:	Kg *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

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:	FALLBROOK
Soil Surface Texture:	sandy loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	MODERATE
Depth to Bedrock Min:	> 40 inches
Depth to Bedrock Max:	> 60 inches

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
SAN DIEGO, CA	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
ESCONDIDO	YES - refer to the Overview Map and Detail Map

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
1	0 - 1/8 Mile NE	Varies

For additional site information, refer to Physical Setting Source Map Findings.

* ©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.

unweathered bedrock
very fine sandy loam
sandy loam
silty clay loam

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
2	USGS3129044	1/2 - 1 Mile NNW
5	USGS3129043	1/2 - 1 Mile NNW
6	USGS3129048	1/2 - 1 Mile North

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
A3	11370	1/2 - 1 Mile SSE
A4	11369	1/2 - 1 Mile SSE

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	6 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 7.30 Min: 6.10
2	6 inches	12 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 7.30 Min: 6.10
3	12 inches	28 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 0.60 Min: 0.20	Max: 7.30 Min: 6.10
4	28 inches	47 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 7.30 Min: 6.10
5	47 inches	51 inches	weathered bedrock	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

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: coarse sandy loam
unweathered bedrock
fine sandy loam

Surficial Soil Types: coarse sandy loam
unweathered bedrock
fine sandy loam

Shallow Soil Types: sandy clay loam
clay
clay loam
fine sandy loam
gravelly - loam

Deeper Soil Types: gravelly - sandy loam

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

			Database	EDR ID Number
1	Site ID:	Not Reported	**AQUIFLOW**	**38768**
NE	Groundwater Flow:	Varies		
0 - 1/8 Mile	Shallow Water Depth:	Not Reported		
Lower	Deep Water Depth:	Not Reported		
	Average Water Depth:	40		
	Date:	12/1992		

2
NNW
1/2 - 1 Mile
Higher

FED USGS **USGS3129044**

Agency cd:	USGS	Site no:	330609117043001
Site name:	012S002W27F002S		
Latitude:	330609		
Longitude:	1170430	Dec lat:	33.10254075
Dec lon:	-117.07586523	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	ESCONDIDO	Map scale:	24000
Altitude:	660	Altitude method:	M
Altitude accuracy:	20	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19870506	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	165	Hole depth:	Not Reported
Source of depth data:	reporting agency (generally USGS)	Project number:	470639900
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1987-05-06	Ground water data end date:	1987-05-06
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

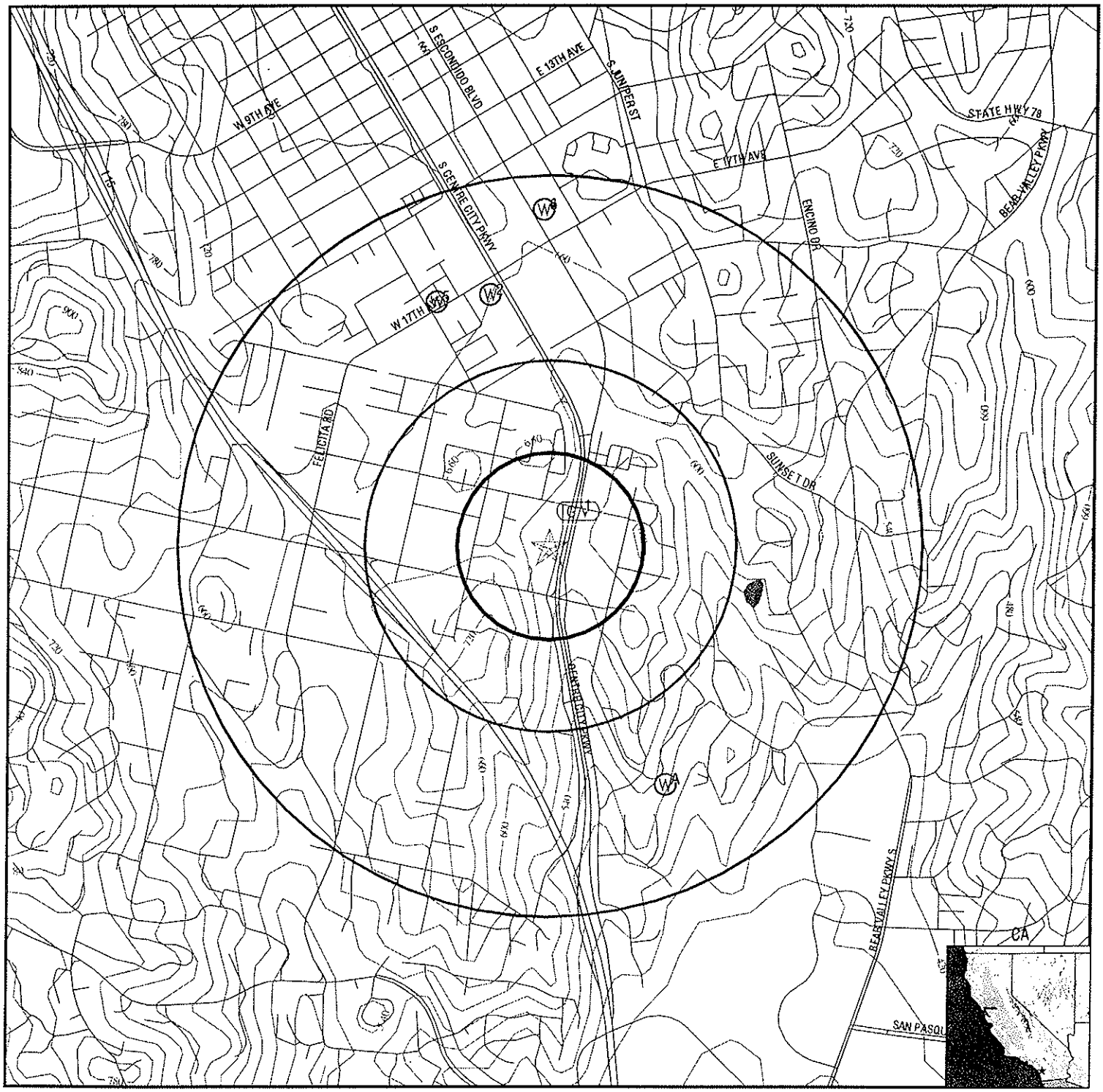
Date	Feet below Surface	Feet to Sealevel
1987-05-06	16.8	

Note: Other conditions existed that would affect the measured water level.

A3
SSE
1/2 - 1 Mile
Lower

CA WELLS **11370**

PHYSICAL SETTING SOURCE MAP - 01416822.1r



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- (GI) Indeterminate Groundwater Flow at Location
- (GV) Groundwater Flow Varies at Location
- (HD) Closest Hydrogeological Data
- Oil, gas or related wells

TARGET PROPERTY:	Vacant Lots APN 238-130-35 and -36	CUSTOMER:	QA2 Environmental, Inc.
ADDRESS:	Centre City Parkway/Brotherton	CONTACT:	Carole Missirlian
CITY/STATE/ZIP:	Escondido CA 92025	INQUIRY #:	01416822.1r
LAT/LONG:	33.0927 / 117.0730	DATE:	May 06, 2005 8:01 pm

Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	470639900
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

6
North
1/2 - 1 Mile
Higher

FED USGS **USGS3129048**

Agency cd:	USGS	Site no:	330621117042101
Site name:	012S002W27B004S		
Latitude:	330621		
Longitude:	1170421	Dec lat:	33.10587397
Dec lon:	-117.07336515	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	ESCONDIDO	Map scale:	24000
Altitude:	662	Altitude method:	M
Altitude accuracy:	20	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	19870618	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	470639900
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1987-06-17
Water quality data end date:	1987-06-17	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Water System Information:

Prime Station Code:	13S/02W-02D03 S	User ID:	WAT
FRDS Number:	3710006013	County:	San Diego
District Number:	14	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Abandoned
Source Lat/Long:	330500.0 1170400.0	Precision:	Undefined
Source Name:	GREEN MUTUAL WELL 15 - ABANDONED		
System Number:	3710006		
System Name:	Escondido, City of		
Organization That Operates System:			
	201 No. Broadway		
	Escondido, CA 92025		
Pop Served:	110000	Connections:	22589
Area Served:	ESCONDIDO		

A4
SSE
1/2 - 1 Mile
Lower

CA WELLS **11369**

Water System Information:

Prime Station Code:	13S/02W-02D01 S	User ID:	WAT
FRDS Number:	3710006012	County:	San Diego
District Number:	14	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Standby Raw
Source Lat/Long:	330500.0 1170400.0	Precision:	Undefined
Source Name:	GREEN MUTUAL WELL 14 - STANDBY		
System Number:	3710006		
System Name:	Escondido, City of		
Organization That Operates System:			
	201 No. Broadway		
	Escondido, CA 92025		
Pop Served:	110000	Connections:	22589
Area Served:	ESCONDIDO		

5
NNW
1/2 - 1 Mile
Higher

FED USGS **USGS3129043**

Agency cd:	USGS	Site no:	330608117043901
Site name:	012S004W27F001S		
Latitude:	330608		
Longitude:	1170439	Dec lat:	33.10226298
Dec lon:	-117.07836529	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	073
Country:	US	Land net:	Not Reported
Location map:	ESCONDIDO	Map scale:	24000
Altitude:	670	Altitude method:	M
Altitude accuracy:	20	Altitude datum:	NGVD29
Hydrologic:	San Luis ReyEscondido. California. Area = 766 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

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.

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
92025	24	0	0.00

Federal EPA Radon Zone for SAN DIEGO 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 Zip Code: 92025

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.000 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.

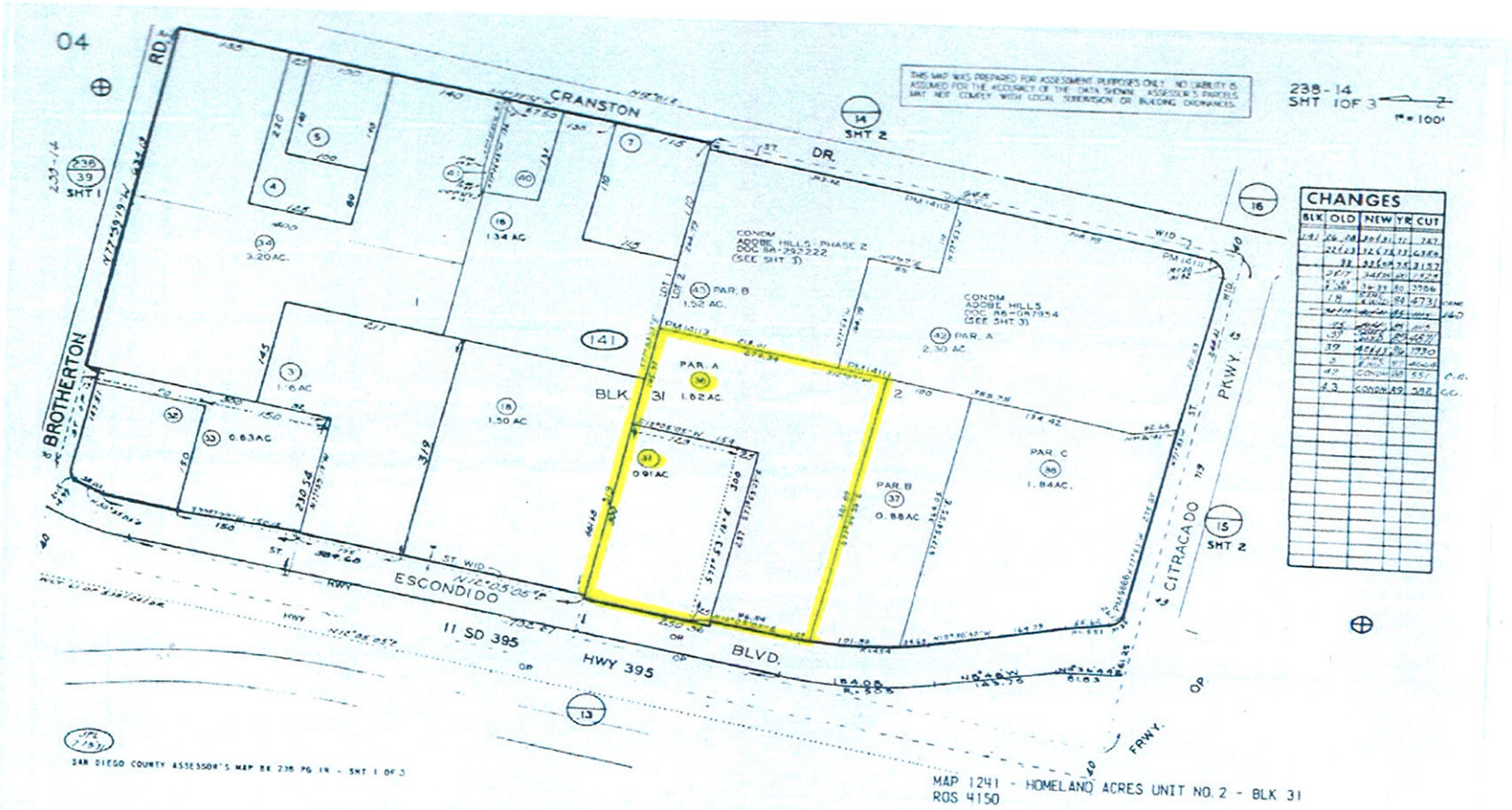
EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

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.



GW Realty Co.
Specializing in Residential Land

Phone: 858-622-7171 □ Fax: 858-622-1879 □ 5075 Shoreham Place, Suite 240 □ San Diego, CA 92122

Appendix E

STORM WATER QUALITY MANAGEMENT PLAN AND PRELIMINARY DRAINAGE STUDY

CITY OF ESCONDIDO, CA

Priority Development Project (PDP)
Storm Water Quality Management Plan (SWQMP)
For
Del Prado
Permit Application Number: SUB15-0022/23

Preparation Date: January 29, 2016

2329 Center City Parkway, Escondido, CA 92025

Assessor's Parcel Number: 238-130-11, 26, 27

Prepared for:
Touchtone Communities
Kerry Garza
12700 Stowe Drive, Suite 130
Poway, CA 920264
Tel: 858-586-0414

Priority Development Project (PDP)

Date of SWQMP:
January 29, 2016

Prepared by:
Bruce A. Tait
MASSON & ASSOCIATES, INC.
200 E. WASHINGTON AVE. SUITE 200
ESCONDIDO, CA 92025
(760) 741-3570

The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan have been prepared under the direction of the following Registered Civil Engineer and meet the requirements of Regional Water Quality Control Board Order R9-2013-0001 as amended by Order R9-2015-0001 and R9-2015-0100 and subsequent amendments.

1-29-2016

Bruce A. Tait, RCE # 32247 Date

Table of Content

Project Information
Priority Development Project (PDP) SWQMP Owner's Certification Page
Project Vicinity Map
Form I-1 Applicability of Permanent, Post-Construction Storm Water BMP Requirements
Form I-2 Project Type Determination (Standard Project or PDP) Checklist
Form I-3B Site Information Checklist for PDPs
Form I-4 Source Control BMP Checklist for All Development Projects
Form I-5 Site Design BMP Checklist for All Development Projects
Form I-6 Summary of PDP Structural BMPs
Form I-7 Harvest and Use Feasibility Checklist
Form I-8 Categorization of Infiltration Feasibility Condition
Form I-9 Factor of Safety and Design Infiltration Rate Worksheet
Design Capture Volume (DCV)
BMP Sizing – Worksheet B.5-1
Attachment A: Copy of Plan Sheets Showing Permanent Storm Water BMPs
Attachment B:

-NRCS Hydrologic Soil Group Data
-85Th Percentile Isopluvial Map
-Potential Critical Coarse Sediment Map

PRIORITY DESIGN PROJECT (PDP) SWQMP PROJECT OWNER'S CERTIFICATION PAGE

Project Name: Del Prado
Permit Application Number: SUB15-0022/23

PROJECT OWNER'S CERTIFICATION

This PDP Project SWQMP has been prepared for **Touchstone Communities** by Masson & Associates Inc.. The PDP Project SWQMP is intended to comply with the PDP Project requirements of the City of Escondido BMP Design Manual, which is a design manual for compliance with local City of Escondido and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001, as amended by Order No. R9-2015-0001) requirements for storm water management.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan. Once the undersigned transfers its interests in the property, its successor-in-interest shall bear the aforementioned responsibility to implement the best management practices (BMPs) described within this plan. A signed copy of this document shall be available on the subject property into perpetuity.

_____
Project Owner's Signature

_____
Print Name

_____
Company

_____
Date

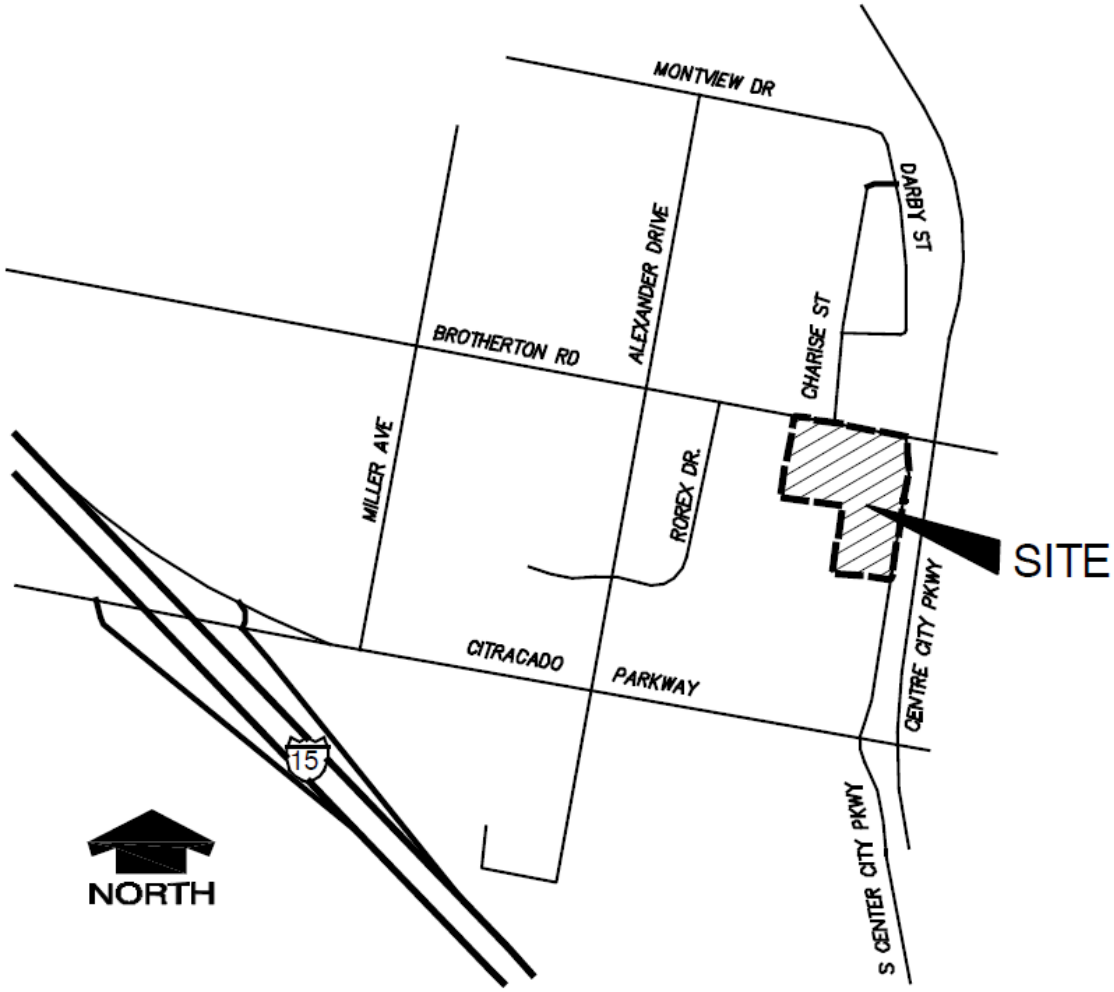
SUBMITTAL RECORD

Use this Table to keep a record of submittals of this Standard Project SWQMP. Each time the PDP Project SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

Submittal Number	Date	Project Status	Summary of Changes
1	1-29-2016	Preliminary Design / Planning/ CEQA Final Design	Initial Submittal
2		Preliminary Design / Planning/ CEQA Final Design	
3		Preliminary Design / Planning/ CEQA Final Design	
4		Preliminary Design / Planning/ CEQA Final Design	

PROJECT VICINITY MAP

Project Name: Del Prado
Permit Application Number: SUB15-0022/23



VICINITY MAP

NOT TO SCALE

Applicability of Permanent, Post-Construction Storm Water BMP Requirements (Storm Water Intake Form for all Development Permit Applications)	Form I-1

Project Identification

Project Name: Del Prado

Permit Application Number: SUB15-0022/23 | Date: 1-29-16

Determination of Requirements

The purpose of this form is to identify permanent, post-construction requirements that apply to the project. This form serves as a short summary of applicable requirements, in some cases referencing separate forms that will serve as the backup for the determination of requirements.

Answer each step below, starting with Step 1 and progressing through each step until reaching "Stop". Refer to the manual sections and/or separate forms referenced in each step below.

Step	Answer	Progression
Step 1: Is the project a "development project"? See Section 1.3 of the manual for guidance.	☒ Yes	Go to Step 2.
	No	Stop. Permanent BMP requirements do not apply. No SWQMP will be required. Provide discussion below.

Discussion / justification if the project is not a "development project" (e.g., the project includes *only* interior remodels within an existing building):

Step 2: Is the project a Standard Project, PDP, or exception to PDP definitions? To answer this item, see Section 1.4 of the manual *in its entirety* for guidance, AND complete Form I-2, Project Type Determination.	Standard Project	Stop. Standard Project requirements apply, including Standard Project
	☒ PDP	PDP requirements apply, including PDP SWQMP. Go to Step 3.
	Exception to PDP definitions	Stop. Standard Project requirements apply. Provide discussion and list any additional requirements below. Prepare Standard Project SWQMP.

Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:

Form I-1 Page 2 of 2		
Step	**Answer**	**Progression**
Step 3. Is the project subject to earlier PDP requirements due to a prior lawful approval? See Section 1.10 of the manual for guidance.	Yes	Consult the [City Engineer] to determine requirements. Provide discussion and identify requirements below. Go to Step 4.
	☒ No	BMP Design Manual PDP requirements apply. Go to Step 4.
Discussion / justification of prior lawful approval, and identify requirements (*not required if prior lawful approval does not apply*):		
Step 4. Do hydromodification control requirements apply? See Section 1.6 of the manual for guidance.	☒ Yes	PDP structural BMPs required for pollutant control (Chapter 5) and hydromodification control (Chapter 6). Go to Step 5.
	No	Stop. PDP structural BMPs required for pollutant control (Chapter 5) only. Provide brief discussion of exemption to hydromodification control below.
Discussion / justification if hydromodification control requirements do <u>not</u> apply:		
Step 5. Does protection of critical coarse sediment yield areas apply? See Section 6.2 of the manual for guidance.	Yes	Management measures required for protection of critical coarse sediment yield areas (Chapter 6.2). Stop.
	☒ No	Management measures not required for protection of critical coarse sediment yield areas. Provide brief discussion below. Stop.
Discussion / justification if protection of critical coarse sediment yield areas does <u>not</u> apply: Per Potential Coarse Sediment Yield Area Map on Google Earth		

Project Type Determination Checklist			Form I-2
Project Information			
Project Name: Del Prado			
Permit Application Number: SUB15-0022/23			
Project Type Determination: Standard Project or PDP			
The project is (select one): ☒ New Development Δ Redevelopment			
The total proposed newly created or replaced impervious area is: 167,575ft² (3.85)			
Is the project in any of the following categories, (a) through (f)?			
Yes ☒	No	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes	No	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☒	No	(c)	New and redevelopment projects that create 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption SIC code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

Form I-2 Page 2 of 2			
Yes	No ☒	(d)	New or redevelopment projects that create or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and SDRWQCB; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and SDRWQCB; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See manual Section 1.4.2 for additional guidance.
Yes	No ☒	(e)	New development projects that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets. This category includes retail gasoline outlets that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic of 100 or more vehicles per day.
Yes ☒	No	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. *Note: See manual Section 1.4.2 for additional guidance.*

Does the project meet the definition of one or more of the PDP categories (a) through (f) listed above?

No – the project is not a PDP (Standard Project).

☒ Yes – the project is a PDP.

The following is for redevelopment PDPs only: Since this is not a Redevelopment Project, we don't need to do this section.

The area of existing (pre-project) impervious area at the project site is:_____ ft² (A)

The total proposed newly created or replaced impervious area is:____ ft² (B) Percent impervious surface created or replaced (A/B)*100:____ %

The percent impervious surface created or replaced is (select one based on the above calculation):

less than or equal to fifty percent (50%) – only new impervious areas are considered PDP

OR

greater than fifty percent (50%) – the entire project site is a PDP

Site Information Checklist For PDPs	Form I-3B (PDPs)
Project Summary Information	
Project Name	Del Prado
Project Address	2329 Center City Parkway, Escondido, CA 92025
Assessor's Parcel Number(s)	238-130-11, 26, 27
Permit Application Number	SUB15-0022/23
Project Watershed (Hydrologic Unit)	Select One: Santa Margarita 902 San Luis Rey 903 Carlsbad 904 ☒ San Dieguito 905 Penasquitos 906 San Diego 907 Pueblo San Diego 908 Sweetwater 909 Otay 910 Tijuana 911
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	±4.8 Acres (207,030 Square Feet)
Area to be disturbed by the project (Project Area)	±4.8 Acres (207,030 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	167,575 Acres (3.85 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	0.91 Acres (39,455 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Form I-3B Page 2 of 9

Description of Existing Site Condition and Drainage Patterns

Current Status of the Site (select all that apply):

☒ Existing development:

☐ Previously graded but not built out

☐ Agricultural or other non-impervious use

☒ Vacant, undeveloped/natural

Description / Additional Information : Small portion of the site on the northeast is impervious area a parking lot and building and one single family house on the northwest which is going to be demolished for the new development.

Existing Land Cover Includes (select all that apply):

☒ Vegetative Cover

☒ Non-Vegetated Pervious Areas

☒ Impervious Areas

Description / Additional Information:

Underlying Soil belongs to Hydrologic Soil Group (select all that apply):

☐ NRCS Type A

☐ NRCS Type B

☒ NRCS Type C

☒ NRCS Type D

Approximate Depth to Groundwater:

☐ Groundwater Depth < 5 feet

☐ 5 feet < Groundwater Depth < 10 feet

☒ 10 feet < Groundwater Depth < 20 feet

☐ Groundwater Depth > 20 feet

Existing Natural Hydrologic Features (select all that apply):

☐ Watercourses

☐ Seeps

☐ Springs

☐ Wetlands

☒ None

Description / Additional Information: the entire site will be completely developed and all storm water runoff will drain via street gutters into series of proposed treatments basins and ultimately will drain into the existing 48-inch storm drain system located on South Center City Parkway. The project drains into Kit Carson Creek, Dieguito River and ultimately into the Lake Hodges Reservoir.

Form I-3B Page 3 of 9

Description of Existing Site Topography and Drainage [How is storm water runoff conveyed from the site? At a minimum, this description should answer (1) whether existing drainage conveyance is natural or urban; (2) describe existing constructed storm water conveyance systems, if applicable; and (3) is runoff from offsite conveyed through the site? If so, describe]:

The site is currently undeveloped and covered mainly by non-native grasses and medium size trees and small portion is impervious area (a parking lot and building).

The northern portion of the site (basin 1) drains southeasterly with an average slope of 2.5% into an existing grate inlet located on the southeasterly corner of the Basin 1 on South Centre City Parkway and ultimately drains to the existing 48" storm drain system.

The small portion of the site which is located on the northwest portion of the site drains northeasterly to Brotherton Road and ultimately into an existing inlet located on South Centre City Parkway.

The southern portion of the site (basin 2) drains southeasterly with an average slope of 3% slope into an existing inlet located at Basin 2 frontage on South Centre City Parkway and ultimately drains to the existing 48" storm drain system.

There is no stormwater drainage onto the site from the surrounding areas. There are brow ditches around the site that collect the offsite runoff and route them into an existing storm drain system located on the south side of the project site.

Description of Proposed Site Development and Drainage Patterns

Project Description / Proposed Land Use and/or Activities:

The Project is located in the City of Escondido, on the southwest corner of Brotherton Road and South Centre City Parkway (Frontage Road). The proposed project is a multi-family subdivision of property located on an approximately 4.8 acre +/- acre site. The project is divided into two portions (northern and southern). The proposed development will be composed of 113 condominium units (81 units on the north (basin 1) and 32 units on the south (basin 2)), recreation area and onsite parking throughout the site.

The project is currently located in an area designated PD/MU (Planned Development/Mixed Unit) per City of Escondido General Plan.

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):

The proposed development will consist of 113 condominium units (81 units on north and 32 units on south), onsite parking, sidewalks and driveways throughout the site.

List/describe proposed pervious features of the project (e.g., landscape areas):

The proposed pervious area will consist of recreation area, one bioretention basin on the north and 4 bioretention basins on the south portion of the project site, and landscaping between buildings.

Does the project include grading and changes to site topography?

☒ Yes
☐ No

Description / Additional Information:

The site will be cut and filled to provide for the proposed improvements and building pads in north and south project site.

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

☒ Yes
☐ No

Description / Additional Information:
The site will propose retaining walls at the northwest and southeast property line. Most of the site will be developed and will drain via street gutters into series of bioretention basins prior to discharging into the existing storm drain system. The proposed project will not have slopes steeper than 3%, except at perimeter slopes. However the sites will continue to drain to the existing 48-inch storm drain system located at the south east corner of the project site on South Center City Parkway.

Form I-3B Page 5 of 9
Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply): ☒ Onsite storm drain inlets Interior floor drains and elevator shaft sump pumps Interior parking garages Need for future indoor & structural pest control ☒ Landscape/outdoor pesticide use ☒ Pools, spas, ponds, decorative fountains, and other water features Food service ☒ Refuse areas Industrial processes Outdoor storage of equipment or materials Vehicle and equipment cleaning Vehicle/equipment repair and maintenance Fuel dispensing areas Loading docks ☒ Fire sprinkler test water ☒ Miscellaneous drain or wash water ☒ Plazas, sidewalks, and parking lots

Form I-3B Page 6 of 9

Identification of Receiving Water Pollutants of Concern

Describe path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):
The storm water from the site drains into the Kit Carson Creek, Lake Hodges and ultimately into the San Dieguito river which empties into the Pacific Ocean.

List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs
Lake Hodges	Color, Manganese, Mercury, Nitrogen, Phosphorous, Turbidity, PH	Needed
Kit Carson Creek	Pentachlorophenol (PCP), Total dissolved Solids	Needed
San Dieguito River	Enterococcus Bacteria, Fecal Coliform, Nitrogen, Phosphorus, TDS, Toxicity, Total coliform	Needed

Identification of Project Site Pollutants*

***Identification of project site pollutants is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs (note the project must also participate in an alternative compliance program unless prior lawful approval to meet earlier PDP requirements is demonstrated)**

Identify pollutants expected from the project site based on all proposed use(s) of the site (see manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Expected from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment			
Nutrients			
Heavy Metals			
Organic Compounds			
Trash & Debris			
Oxygen Demanding Substances			
Oil & Grease			
Bacteria & Viruses			
Pesticides			

Hydromodification Management Requirements

Do hydromodification management requirements apply (see Section 1.6 of the manual)?

☒ Yes, hydromodification management flow control structural BMPs required.

No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.

No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.

No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA for the watershed in which the project resides.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

Critical Coarse Sediment Yield Areas*

***This Section only required if hydromodification management requirements apply**

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

Yes

☒ No, no critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Section 6.2 of the manual been performed?

6.2.1 Verification of GLUs Onsite

6.2.2 Downstream Systems Sensitivity to Coarse Sediment

6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite

No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

No critical coarse sediment yield areas to be protected based on verification of GLUs onsite.

Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 8 of the SWQMP.

Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections 6.2.4 and 6.2.5 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

Form I-3B Page 8 of 9
Flow Control for Post-Project Runoff*   ***This Section only required if hydromodification management requirements apply**
List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.   BMP 1 – On the North   BMP 2A – On the South   BMP 2B – On the South   BMP 2C – On the South   BMP 2D – On the South
Has a geomorphic assessment been performed for the receiving channel(s)?   ☒ No, the low flow threshold is 0.1Q2 (default low flow threshold)   Yes, the result is the low flow threshold is 0.1Q2   Yes, the result is the low flow threshold is 0.3Q2   Yes, the result is the low flow threshold is 0.5Q2   If a geomorphic assessment has been performed, provide title, date, and preparer: Discussion / Additional Information: (optional)

Form I-3B Page 9 of 9
Other Site Requirements and Constraints
When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements. Constraint: Two (2) SDG&E easements and two (2) drainage easements, and electrical lines which can't be disturbed. The high percentage of improved area also makes it difficult to incorporate LID features, however we are utilizing landscaping to maximum practical extent.
Optional Additional Information or Continuation of Previous Sections As Needed
This space provided for additional information or continuation of information from previous sections as needed.

Source Control BMP Checklist for All Development Projects (Standard Projects and PDPs)	Form I-4

Project Identification

Project Name: Del Prado

Permit Application Number: SUB15-0022/23

Source Control BMPs

All development projects must implement source control BMPs SC-1 through SC-6 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement source control BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the source control BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided.

Source Control Requirement	Applied?		
SC-1 Prevention of Illicit Discharges into the MS4	☒ Yes	No	N/A
Discussion / justification if SC-1 not implemented:			
SC-2 Storm Drain Stenciling or Signage	☒ Yes	No	N/A
Discussion / justification if SC-2 not implemented:			
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	Yes	No	☒ N/A
Discussion / justification if SC-3 not implemented:			
SC-4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	Yes	No	☒ N/A
Discussion / justification if SC-4 not implemented:			

Form I-4 Page 2 of 2			
Source Control Requirement	**Applied?**		
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☒ Yes	No	N/A
Discussion / justification if SC-5 not implemented:			
SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below)			
Onsite storm drain inlets	☒ Yes	No	N/A
Interior floor drains and elevator shaft sump pumps	Yes	No	☒ N/A
Interior parking garages	Yes	No	☒ N/A
Need for future indoor & structural pest control	Yes	No	☒ N/A
Landscape/outdoor pesticide use	☒ Yes	No	N/A
Pools, spas, ponds, decorative fountains, and other water features	☒ Yes	No	☒ N/A
Food service	Yes	No	☒ N/A
Refuse areas	☒ Yes	No	N/A
Industrial processes	Yes	No	☒ N/A
Outdoor storage of equipment or materials	Yes	No	☒ N/A
Vehicle and equipment cleaning	Yes	No	☒ N/A
Vehicle/equipment repair and maintenance	Yes	No	☒ N/A
Fuel dispensing areas	Yes	No	☒ N/A
Loading docks	Yes	No	☒N/A
Fire sprinkler test water	☒ Yes	No	N/A
Miscellaneous drain or wash water	☒ Yes	No	N/A
Plazas, sidewalks, and parking lots	☒ Yes	No	N/A
Discussion / justification if SC-6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for all "No" answers shown above.			

Site Design BMP Checklist for All Development Projects (Standard Projects and PDPs)	Form I-5

Project Identification

Project Name: Del Prado

Permit Application Number: SUB15-0022/23

Site Design BMPs

All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement site design BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification may be provided.

Site Design Requirement	Applied?		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	Yes	☒ No	N/A
Discussion / justification if SD-1 not implemented: All the project site will be graded, but water runoff will be collected at the existing inlet and storm drain system located at southeast corner of the project site on South Center City Parkway.			
SD-2 Conserve Natural Areas, Soils, and Vegetation	Yes	☒ No	N/A
Discussion / justification if SD-2 not implemented: The total project area will be graded and approximately 81% of the proposed site will be impervious.			
SD-3 Minimize Impervious Area	☒Yes	No	N/A
Discussion / justification if SD-3 not implemented: This project is multi-family subdivision of 113 condominium units with 81% of the area being impervious, but large landscaping areas will be incorporated into the site.			
SD-4 Minimize Soil Compaction	☒Yes	No	N/A
Discussion / justification if SD-4 not implemented: The 81% of the site will be impervious. Majority of the pervious area will be used for storm water treatment purpose which the compaction of the soil will be minimized for higher infiltration.			

Form I-5 Page 2 of 2			
Site Design Requirement	**Applied?**		
SD-5 Impervious Area Dispersion	Yes	No	☒ N/A
Discussion / justification if SD-5 not implemented:			
SD-6 Runoff Collection	☒ Yes	No	N/A
Discussion / justification if SD-6 not implemented:			
SD-7 Landscaping with Native or Drought Tolerant Species	☒ Yes	No	N/A
Discussion / justification if SD-7 not implemented:			
SD-8 Harvesting and Using Precipitation	Yes	☒ No	N/A
Discussion / justification if SD-8 not implemented: See Form I-7			

Summary of PDP Structural BMPs	Form I-6 (PDPs)

Project Identification

Project Name: Del Prado

Permit Application Number: SUB15-0022/23

PDP Structural BMPs

All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).

PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative to certify construction of the structural BMPs (see Section 1.12 of the manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the manual).

Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

The pollutant control and flow control BMP will be integrated by proposed bioretention basins. Multiple bioretention basins will be constructed on the site to address to treat onsite storm water runoff and detain the existing storm water runoff. The location of the bioretention basins is shown on the BMP exhibits.

The bioretention basins have a medium or high rating for removal of all likely pollutants from stormwater.

Form I-6 Page 3 of X (Copy as many as needed)	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No.	
Construction Plan Sheet No.	
Type of structural BMP: Retention by harvest and use (HU-1) Retention by infiltration basin (INF-1) ☒ Retention by bioretention (INF-2) Retention by permeable pavement (INF-3) Partial retention by biofiltration with partial retention (PR-1) Biofiltration (BF-1) Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vault for hydromodification management Other (describe in discussion section below)	
Purpose: Pollutant control only Hydromodification control only ☒ Combined pollutant control and hydromodification control Pre-treatment/forebay for another structural BMP Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the manual)	Developer
Who will be the final owner of this BMP?	HOA
Who will maintain this BMP into perpetuity?	HOA
What is the funding mechanism for maintenance?	HOA
Discussion (as needed):	

Harvest and Use Feasibility Checklist	Form I-7

1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?

☐ Toilet and urinal flushing

☐ Landscape irrigation

☒ Other: Not feasible (see the calculations)

The 36 hours demands for toilet and urinal flushing and landscape irrigation are very low during wet season.

2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.

3. Calculate the DCV using worksheet B-2.1.

DCV = Refer to Attachment A (cubic feet)

3a. Is the 36 hour demand greater than or equal to the DCV?	3b. Is the 36 hour demand greater than 0.25DCV but less than the full DCV?	3c. Is the 36 hour demand less than 0.25DCV?
Yes / No ⇨ ⇩	Yes / No ⇨ ⇩	☒ Yes ⇩
Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.	Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.	Harvest and use is considered to be infeasible.

Is harvest and use feasible based on further evaluation?

☐ Yes, refer to Appendix E to select and size harvest and use BMPs.

☒ No, select alternate BMPs.

Categorization of Infiltration Feasibility Condition	Form I-8

Part 1 - Full Infiltration Feasibility Screening Criteria

Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
1	**Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		☒

Provide basis:

The project site is located in hydrologic soil group C and D that are low in infiltration. (refer to attachment B)

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.

2	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		

Provide basis:

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.

Form I-8 Page 2 of 4			
Criteria	Screening Question	**Yes**	**No**
3	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		
Provide basis: Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
4	**Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		
Provide basis: Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
Part 1 Result *	If all answers to rows 1 - 4 are "**Yes**" a full infiltration design is potentially feasible. The feasibility screening category is **Full Infiltration** If any answer from row 1-4 is "**No**", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design. Proceed to Part 2		

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings

Form I-8 Page 3 of 4

Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria

Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
5	**Do soil and geologic conditions allow for infiltration in any appreciable rate or volume?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		☒

Provide basis:

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

6	**Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		☒

Provide basis:

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

Form I-8 Page 4 of 4			
Criteria	Screening Question	**Yes**	**No**
7	**Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		☒
Provide basis: Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
8	**Can infiltration be allowed without violating downstream water rights**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		☒
Provide basis: Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
Part 2 Result*	If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is **Partial Infiltration.** If any answer from row 5-8 is no, then infiltration of any volume is considered to be **infeasible** within the drainage area. The feasibility screening category is **No Infiltration.**		No Infiltration

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings

Table D.5-1: Suitability Assessment Related Considerations for Infiltration Facility Safety Factors

Consideration	High Concern – 3 points	Medium Concern – 2 points	Low Concern – 1 point
Assessment methods (see explanation below)	Use of soil survey maps or simple texture analysis to estimate short-term infiltration rates Use of well permeameter or borehole methods without accompanying continuous boring log Relatively sparse testing with direct infiltration methods	Use of well permeameter or borehole methods with accompanying continuous boring log Direct measurement of infiltration area with localized infiltration measurement methods (e.g., infiltrometer) Moderate spatial resolution	Direct measurement with localized (i.e., small-scale) infiltration testing methods at relatively high resolution[1] or Use of extensive test pit infiltration measurement methods[2]
Texture Class	Silty and clayey soils with significant fines	Loamy soils	Granular to slightly loamy soils
Site soil variability	Highly variable soils indicated from site assessment, or Unknown variability	Soil borings/test pits indicate moderately homogeneous soils	Soil borings/test pits indicate relatively homogeneous soils
Depth to groundwater/ impervious layer	<5 ft below facility bottom	5-15 ft below facility bottom	>15 below facility bottom

Table D.5-2: Design Related Considerations for Infiltration Facility Safety Factors

Consideration	High Concern – 3 points	Medium Concern – 2 points	Low Concern – 1 point
Level of pretreatment/ expected influent sediment loads	Limited pretreatment using gross solids removal devices only, such as hydrodynamic separators, racks and screens AND tributary area includes landscaped areas, steep slopes, high traffic areas, road sanding, or any other areas expected to produce high sediment, trash, or debris loads.	Good pretreatment with BMPs that mitigate coarse sediments such as vegetated swales AND influent sediment loads from the tributary area are expected to be moderate (e.g., low traffic, mild slopes, stabilized pervious areas, etc.). Performance of pretreatment consistent with "pretreatment BMP performance criteria" (50% TSS removal) in Appendix B.6	Excellent pretreatment with BMPs that mitigate fine sediments such as bioretention or media filtration OR sedimentation or facility only treats runoff from relatively clean surfaces, such as rooftops/non-sanded road surfaces. Performance of pretreatment consistent with "flow-thru treatment control BMP performance criteria" (i.e., 80% TSS removal) in Appendix B.6
Redundancy/ resiliency	No "backup" system is provided; the system design does not allow infiltration rates to be restored relatively easily with maintenance	The system has a backup pathway for treated water to discharge if clogging occurs or infiltration rates can be restored via maintenance.	The system has a backup pathway for treated water to discharge if clogging occurs and infiltration rates can be relatively easily restored via maintenance.
Compaction during construction	Construction of facility on a compacted site or increased probability of unintended/ indirect compaction.	Medium probability of unintended/ indirect compaction.	Equipment traffic is effectively restricted from infiltration areas during construction and there is low probability of unintended/ indirect compaction.

Factor of Safety and Design Infiltration Rate Worksheet				Form I-9	
Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25		
		Predominant soil texture	0.25		
		Site soil variability	0.25		
		Depth to groundwater / impervious layer	0.25		
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			
B	Design	Level of pretreatment/ expected sediment loads	0.5		
		Redundancy/resiliency	0.25		
		Compaction during construction	0.25		
		Design Safety Factor, $S_B = \Sigma p$			
Combined Safety Factor, $S_{total} = S_A \times S_B$					
Observed Infiltration Rate, inch/hr, $K_{observed}$ (corrected for test-specific bias)					
Design Infiltration Rate, in/hr, $K_{design} = K_{observed} / S_{total}$					
Supporting Data					
Briefly describe infiltration test and provide reference to test forms: Not Applicable					

Design Capture Volume (DCV)

North Site

	Design Capture Volume (DCV)		DMA - 1	
1	85th percentile 24-hr storm depth	d=	0.58	inches
2	Area tributary to BMP (s)	A=	3.3	acres
3	Area Weighted runoff factor	C=	0.9	unitless
4	Rain Barrels volume reduction	TCV=	0	cubic-feet
5	Street trees volume reduction	RCV=	0	cubic-feet
6	Calculator DCV = (3630 x C x d x A) - TCV - RCV	DCV=	6253.0	cubic-feet

South Site

Design Capture Volume (DCV)		DMA - 2A		
1	85th percentile 24-hr storm depth	d=	0.58	inches
2	Area tributary to BMP (s)	A=	0.42	acres
3	Area Weighted runoff factor	C=	0.9	unitless
4	Rain Barrels volume reduction	TCV=	0	cubic-feet
5	Street trees volume reduction	RCV=	0	cubic-feet
6	Calculator DCV = (3630 x C x d x A) - TCV - RCV	DCV=	795.8	cubic-feet

Design Capture Volume (DCV)		DMA - 2B		
1	85th percentile 24-hr storm depth	d=	0.58	inches
2	Area tributary to BMP (s)	A=	0.37	acres
3	Area Weighted runoff factor	C=	0.9	unitless
4	Rain Barrels volume reduction	TCV=	0	cubic-feet
5	Street trees volume reduction	RCV=	0	cubic-feet
6	Calculator DCV = (3630 x C x d x A) - TCV - RCV	DCV=	695.4	cubic-feet

Design Capture Volume (DCV)		DMA - 2C		
1	85th percentile 24-hr storm depth	d=	0.58	inches
2	Area tributary to BMP (s)	A=	0.58	acres
3	Area Weighted runoff factor	C=	0.9	unitless
4	Rain Barrels volume reduction	TCV=	0	cubic-feet
5	Street trees volume reduction	RCV=	0	cubic-feet
6	Calculator DCV = (3630 x C x d x A) - TCV - RCV	DCV=	1099.0	cubic-feet

Design Capture Volume (DCV)		DMA - 2D		
1	85th percentile 24-hr storm depth	d=	0.58	inches
2	Area tributary to BMP (s)	A=	0.13	acres
3	Area Weighted runoff factor	C=	0.9	unitless
4	Rain Barrels volume reduction	TCV=	0	cubic-feet
5	Street trees volume reduction	RCV=	0	cubic-feet
6	Calculator DCV = (3630 x C x d x A) - TCV - RCV	DCV=	250.1	cubic-feet

BMP SIZING

Basin #1

Simple Sizing Method for Biofiltration BMPs		Worksheet B.5-1	
1	Remaining DCV after implementing retention BMPs	6253	cubic-feet
Partial Retention			
2	Infiltration rate from Worksheet D.5-1 if partial infiltration is feasible		in/hr.
3	Allowable drawdown time for aggregate storage below the underdrain	36	hours
4	Depth of runoff that can be infiltrated [Line 2 x Line 3]		inches
5	Aggregate pore space	0.4	in/in
6	Required depth of gravel below the underdrain [Line 4/ Line 5]		inches
7	Assumed surface area of the biofiltration BMP		sq-ft
8	Media retained pore space	0.1	in/in
9	Volume retained by BMP [[Line 4 + (Line 12 x Line 8)]/12] x Line 7		cubic-feet
10	DCV that requires biofiltration [Line 1 – Line 9]	6253	cubic-feet
BMP Parameters			
11	Surface Ponding [6 inch minimum, 12 inch maximum]	60	inches
12	Media Thickness [18 inches minimum]	18	inches
13	Aggregate Storage above underdrain invert (12 inches typical) – use 0 inches for sizing if the aggregate is not over the entire bottom surface area	9	inches
14	Media available pore space	0.2	in/in
15	Media filtration rate to be used for sizing	5	in/hr.
Baseline Calculations			
16	Allowable Routing Time for sizing	6	hours
17	Depth filtered during storm [Line 15 x Line 16]	30	inches
18	Depth of Detention Storage [Line 11 + (Line 12 x Line 14) + (Line 13 x Line 5)]	67.2	inches
19	Total Depth Treated [Line 17 + Line 18]	97.2	inches
Option 1 – Biofilter 1.5 times the DCV			
20	Required biofiltered volume [1.5 x Line 10]	9380	cubic-feet
21	Required Footprint [Line 20/ Line 19] x 12	1158	sq-ft
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
22	Required Storage (surface + pores) Volume [0.75 x Line 10]	4690	cubic-feet
23	Required Footprint [Line 22/ Line 18] x 12	837	sq-ft
Footprint of the BMP			
24	Area draining to the BMP	142408	sq-ft
25	Adjusted Runoff Factor for drainage area (Refer to Appendix B.1 and B.2)	0.9	
26	Minimum BMP Footprint [Line 24 x Line 25 x 0.03]	3845	sq-ft
25	Footprint of the BMP = Maximum(Minimum(Line 21, Line 23), Line 26)	3845	sq-ft

Note: Line 7 is used to estimate the amount of volume retained by the BMP. Update assumed surface area in Line 7 until its equivalent to the required biofiltration footprint (either Line 21 or Line 23)

Basin #2A

Simple Sizing Method for Biofiltration BMPs		Worksheet B.5-1	
1	Remaining DCV after implementing retention BMPs	795.8	cubic-feet
Partial Retention			
2	Infiltration rate from Worksheet D.5-1 if partial infiltration is feasible		in/hr.
3	Allowable drawdown time for aggregate storage below the underdrain	36	hours
4	Depth of runoff that can be infiltrated [Line 2 x Line 3]		inches
5	Aggregate pore space	0.40	in/in
6	Required depth of gravel below the underdrain [Line 4/ Line 5]		inches
7	Assumed surface area of the biofiltration BMP		sq-ft
8	Media retained pore space	0.1	in/in
9	Volume retained by BMP [[Line 4 + (Line 12 x Line 8)]/12] x Line 7		cubic-feet
10	DCV that requires biofiltration [Line 1 – Line 9]	795.8	cubic-feet
BMP Parameters			
11	Surface Ponding [6 inch minimum, 12 inch maximum]	24	inches
12	Media Thickness [18 inches minimum]	18	inches
13	Aggregate Storage above underdrain invert (12 inches typical) – use 0 inches for sizing if the aggregate is not over the entire bottom surface area	9	inches
14	Media available pore space	0.2	in/in
15	Media filtration rate to be used for sizing	5	in/hr.
Baseline Calculations			
16	Allowable Routing Time for sizing	6	hours
17	Depth filtered during storm [Line 15 x Line 16]	30	inches
18	Depth of Detention Storage [Line 11 + (Line 12 x Line 14) + (Line 13 x Line 5)]	31.2	inches
19	Total Depth Treated [Line 17 + Line 18]	61.2	inches
Option 1 – Biofilter 1.5 times the DCV			
20	Required biofiltered volume [1.5 x Line 10]	1194	cubic-feet
21	Required Footprint [Line 20/ Line 19] x 12	234	sq-ft
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
22	Required Storage (surface + pores) Volume [0.75 x Line 10]	597	cubic-feet
23	Required Footprint [Line 22/ Line 18] x 12	230	sq-ft
Footprint of the BMP			
24	Area draining to the BMP	18320	sq-ft
25	Adjusted Runoff Factor for drainage area (Refer to Appendix B.1 and B.2)	0.9	
26	Minimum BMP Footprint [Line 24 x Line 25 x 0.03]	495	sq-ft
25	Footprint of the BMP = Maximum(Minimum(Line 21, Line 23), Line 26)	495	sq-ft

Note: Line 7 is used to estimate the amount of volume retained by the BMP. Update assumed surface area in Line 7 until its equivalent to the required biofiltration footprint (either Line 21 or Line 23)

Basin #2B

Simple Sizing Method for Biofiltration BMPs		Worksheet B.5-1	
1	Remaining DCV after implementing retention BMPs	695.4	cubic-feet
Partial Retention			
2	Infiltration rate from Worksheet D.5-1 if partial infiltration is feasible		in/hr.
3	Allowable drawdown time for aggregate storage below the underdrain	36	hours
4	Depth of runoff that can be infiltrated [Line 2 x Line 3]		inches
5	Aggregate pore space	0.40	in/in
6	Required depth of gravel below the underdrain [Line 4/ Line 5]		inches
7	Assumed surface area of the biofiltration BMP		sq-ft
8	Media retained pore space	0.1	in/in
9	Volume retained by BMP [[Line 4 + (Line 12 x Line 8)]/12] x Line 7		cubic-feet
10	DCV that requires biofiltration [Line 1 – Line 9]	695.4	cubic-feet
BMP Parameters			
11	Surface Ponding [6 inch minimum, 12 inch maximum]	24	inches
12	Media Thickness [18 inches minimum]	18	inches
13	Aggregate Storage above underdrain invert (12 inches typical) – use 0 inches for sizing if the aggregate is not over the entire bottom surface area	9	inches
14	Media available pore space	0.2	in/in
15	Media filtration rate to be used for sizing	5	in/hr.
Baseline Calculations			
16	Allowable Routing Time for sizing	6	hours
17	Depth filtered during storm [Line 15 x Line 16]	30	inches
18	Depth of Detention Storage [Line 11 + (Line 12 x Line 14) + (Line 13 x Line 5)]	31.2	inches
19	Total Depth Treated [Line 17 + Line 18]	61.2	inches
Option 1 – Biofilter 1.5 times the DCV			
20	Required biofiltered volume [1.5 x Line 10]	1043	cubic-feet
21	Required Footprint [Line 20/ Line 19] x 12	205	sq-ft
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
22	Required Storage (surface + pores) Volume [0.75 x Line 10]	522	cubic-feet
23	Required Footprint [Line 22/ Line 18] x 12	201	sq-ft
Footprint of the BMP			
24	Area draining to the BMP	16005	sq-ft
25	Adjusted Runoff Factor for drainage area (Refer to Appendix B.1 and B.2)	0.9	
26	Minimum BMP Footprint [Line 24 x Line 25 x 0.03]	432	sq-ft
25	Footprint of the BMP = Maximum(Minimum(Line 21, Line 23), Line 26)	432	sq-ft

Note: Line 7 is used to estimate the amount of volume retained by the BMP. Update assumed surface area in Line 7 until its equivalent to the required biofiltration footprint (either Line 21 or Line 23)

Basin #2C

Simple Sizing Method for Biofiltration BMPs		Worksheet B.5-1	
1	Remaining DCV after implementing retention BMPs	1099.0	cubic-feet
Partial Retention			
2	Infiltration rate from Worksheet D.5-1 if partial infiltration is feasible		in/hr.
3	Allowable drawdown time for aggregate storage below the underdrain	36	hours
4	Depth of runoff that can be infiltrated [Line 2 x Line 3]		inches
5	Aggregate pore space	0.40	in/in
6	Required depth of gravel below the underdrain [Line 4/ Line 5]		inches
7	Assumed surface area of the biofiltration BMP		sq-ft
8	Media retained pore space	0.1	in/in
9	Volume retained by BMP [[Line 4 + (Line 12 x Line 8)]/12] x Line 7		cubic-feet
10	DCV that requires biofiltration [Line 1 – Line 9]	1099.0	cubic-feet
BMP Parameters			
11	Surface Ponding [6 inch minimum, 12 inch maximum]	18	inches
12	Media Thickness [18 inches minimum]	18	inches
13	Aggregate Storage above underdrain invert (12 inches typical) – use 0 inches for sizing if the aggregate is not over the entire bottom surface area	9	inches
14	Media available pore space	0.2	in/in
15	Media filtration rate to be used for sizing	5	in/hr.
Baseline Calculations			
16	Allowable Routing Time for sizing	6	hours
17	Depth filtered during storm [Line 15 x Line 16]	30	inches
18	Depth of Detention Storage [Line 11 + (Line 12 x Line 14) + (Line 13 x Line 5)]	25.2	inches
19	Total Depth Treated [Line 17 + Line 18]	55.2	inches
Option 1 – Biofilter 1.5 times the DCV			
20	Required biofiltered volume [1.5 x Line 10]	1649	cubic-feet
21	Required Footprint [Line 20/ Line 19] x 12	358	sq-ft
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
22	Required Storage (surface + pores) Volume [0.75 x Line 10]	824	cubic-feet
23	Required Footprint [Line 22/ Line 18] x 12	393	sq-ft
Footprint of the BMP			
24	Area draining to the BMP	25174	sq-ft
25	Adjusted Runoff Factor for drainage area (Refer to Appendix B.1 and B.2)	0.9	
26	Minimum BMP Footprint [Line 24 x Line 25 x 0.03]	680	sq-ft
25	Footprint of the BMP = Maximum(Minimum(Line 21, Line 23), Line 26)	680	sq-ft

Note: Line 7 is used to estimate the amount of volume retained by the BMP. Update assumed surface area in Line 7 until its equivalent to the required biofiltration footprint (either Line 21 or Line 23)

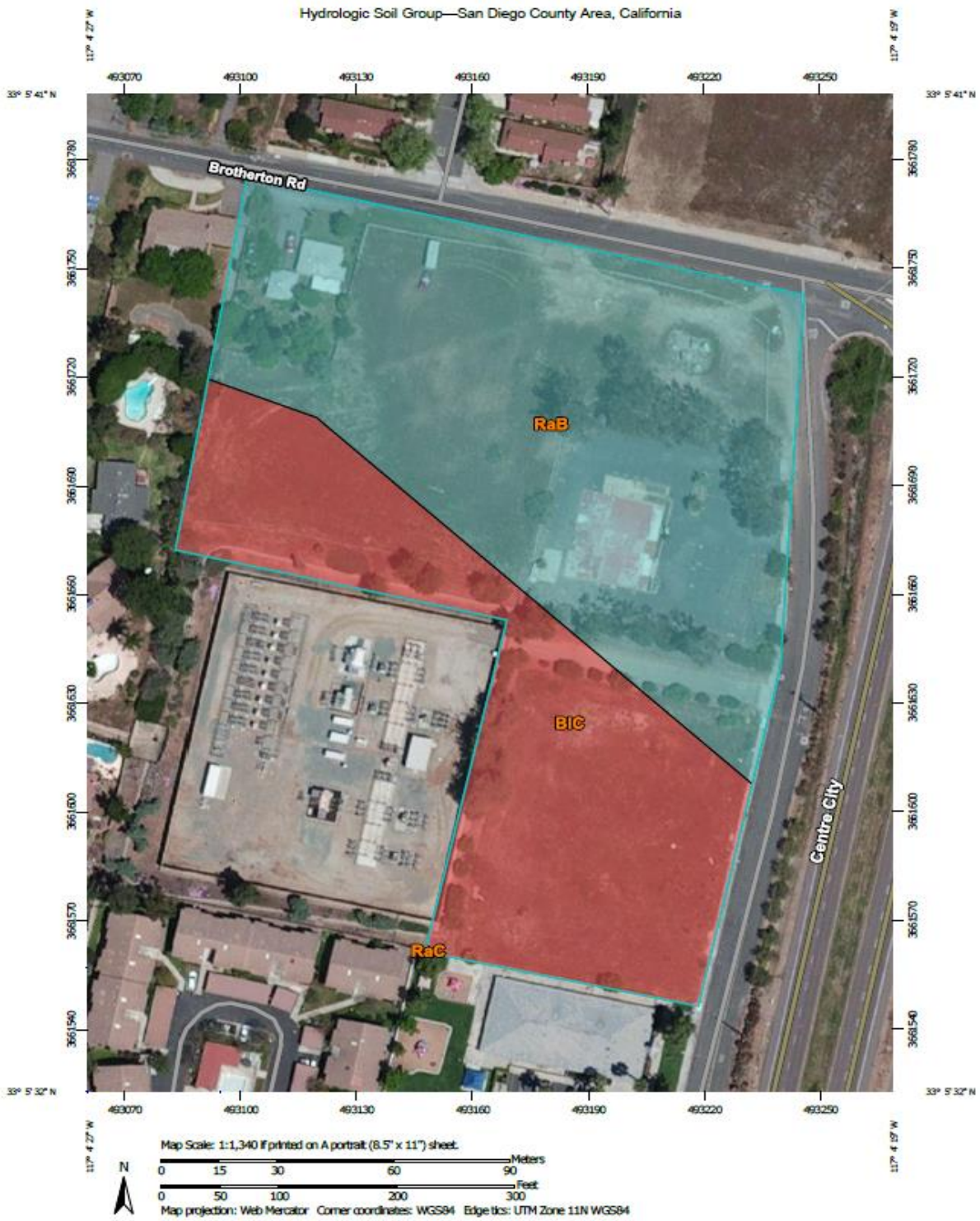
Basin #2D

Simple Sizing Method for Biofiltration BMPs		Worksheet B.5-1	
1	Remaining DCV after implementing retention BMPs	250.1	cubic-feet
Partial Retention			
2	Infiltration rate from Worksheet D.5-1 if partial infiltration is feasible		in/hr.
3	Allowable drawdown time for aggregate storage below the underdrain	36	hours
4	Depth of runoff that can be infiltrated [Line 2 x Line 3]		inches
5	Aggregate pore space	0.40	in/in
6	Required depth of gravel below the underdrain [Line 4/ Line 5]		inches
7	Assumed surface area of the biofiltration BMP		sq-ft
8	Media retained pore space	0.1	in/in
9	Volume retained by BMP [[Line 4 + (Line 12 x Line 8)]/12] x Line 7		cubic-feet
10	DCV that requires biofiltration [Line 1 – Line 9]	250.1	cubic-feet
BMP Parameters			
11	Surface Ponding [6 inch minimum, 12 inch maximum]	24	inches
12	Media Thickness [18 inches minimum]	18	inches
13	Aggregate Storage above underdrain invert (12 inches typical) – use 0 inches for sizing if the aggregate is not over the entire bottom surface area	9	inches
14	Media available pore space	0.2	in/in
15	Media filtration rate to be used for sizing	5	in/hr.
Baseline Calculations			
16	Allowable Routing Time for sizing	6	hours
17	Depth filtered during storm [Line 15 x Line 16]	30	inches
18	Depth of Detention Storage [Line 11 + (Line 12 x Line 14) + (Line 13 x Line 5)]	31.2	inches
19	Total Depth Treated [Line 17 + Line 18]	61.2	inches
Option 1 – Biofilter 1.5 times the DCV			
20	Required biofiltered volume [1.5 x Line 10]	375	cubic-feet
21	Required Footprint [Line 20/ Line 19] x 12	73.6	sq-ft
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
22	Required Storage (surface + pores) Volume [0.75 x Line 10]	187.6	cubic-feet
23	Required Footprint [Line 22/ Line 18] x 12	72.1	sq-ft
Footprint of the BMP			
24	Area draining to the BMP	5737	sq-ft
25	Adjusted Runoff Factor for drainage area (Refer to Appendix B.1 and B.2)	0.9	
26	Minimum BMP Footprint [Line 24 x Line 25 x 0.03]	155	sq-ft
25	Footprint of the BMP = Maximum(Minimum(Line 21, Line 23), Line 26)	155	sq-ft

Note: Line 7 is used to estimate the amount of volume retained by the BMP. Update assumed surface area in Line 7 until its equivalent to the required biofiltration footprint (either Line 21 or Line 23)

ATTACHMENT A

ATTACHMENT B
NRCS HYDROLOGIC SOILS GROUP DATA



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
Survey Area Data: Version 8, Sep 17, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 3, 2010—Jun 19, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — San Diego County Area, California (CA638)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BIC	Bonsall sandy loam, 2 to 9 percent slopes	D	2.2	39.1%
RaB	Ramona sandy loam, 2 to 5 percent slopes	C	3.4	60.8%
RaC	Ramona sandy loam, 5 to 9 percent slopes	C	0.0	0.0%
Totals for Area of Interest			**5.7**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

85th PERCENTILE 24-HOURS ISOPLUVIAL MAP

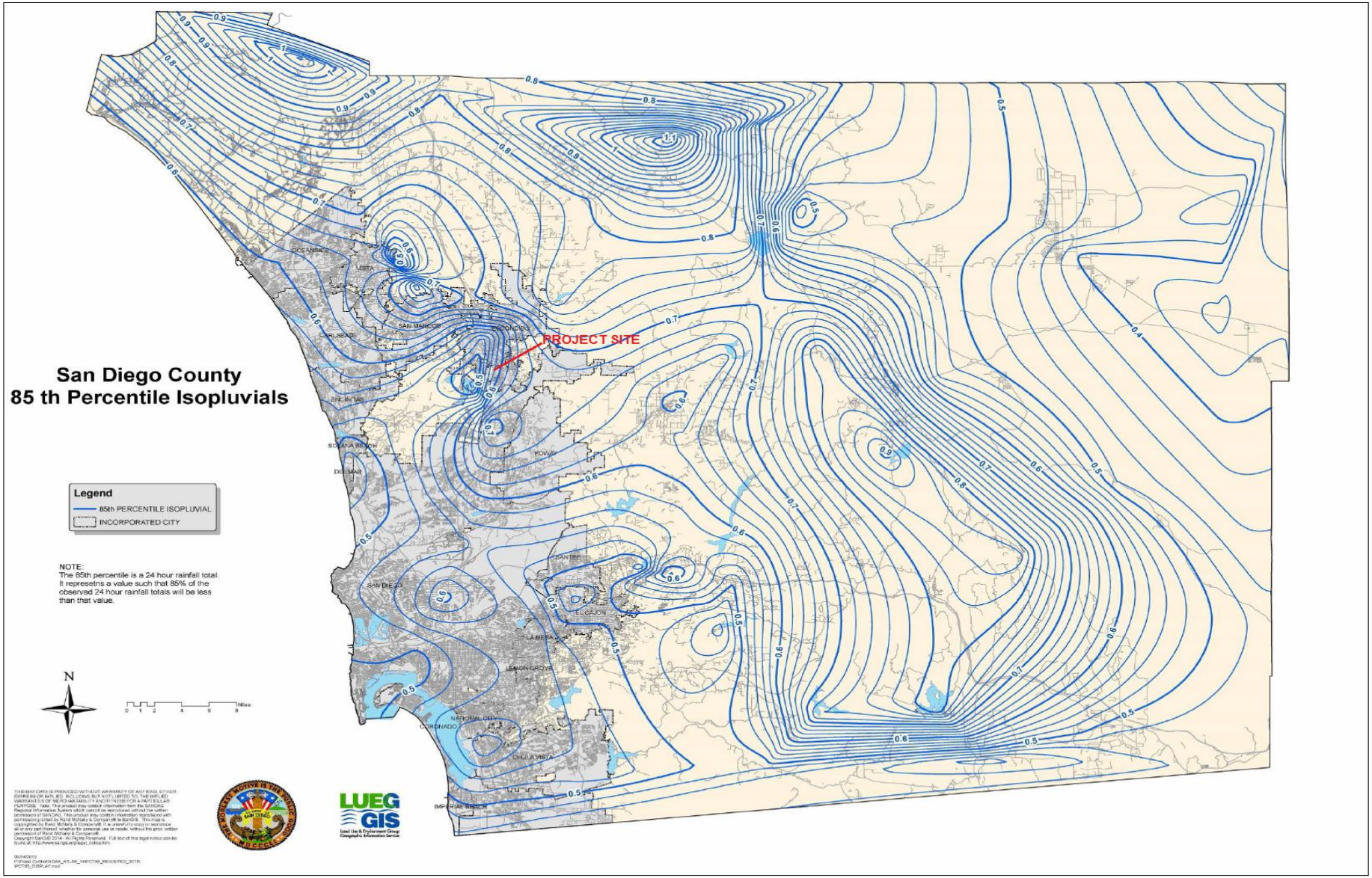
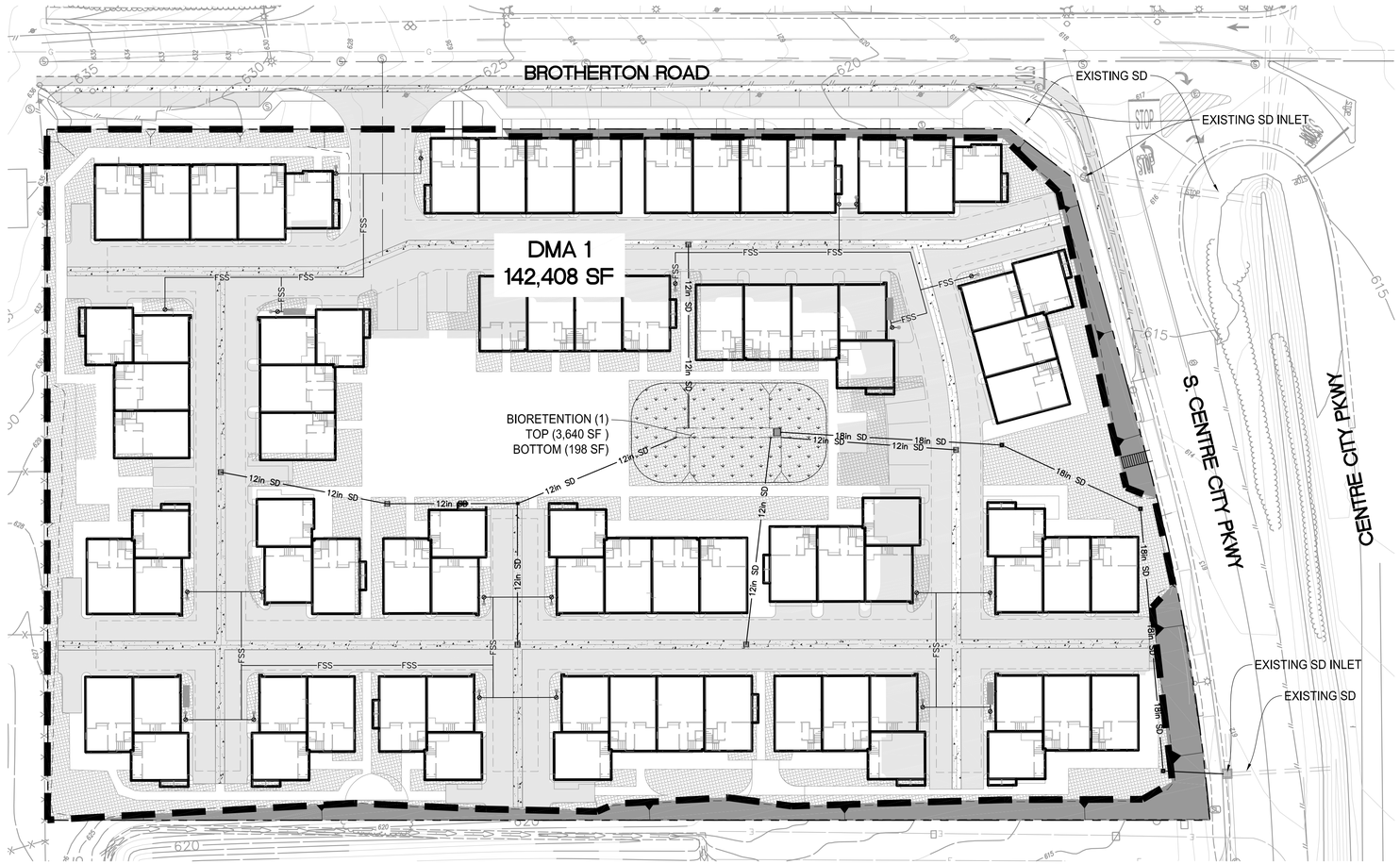


Figure B.1-1: 85th Percentile 24-hour Isopluvial Map

POTENTIAL CRITICAL COARSE SEDIMENT MAP

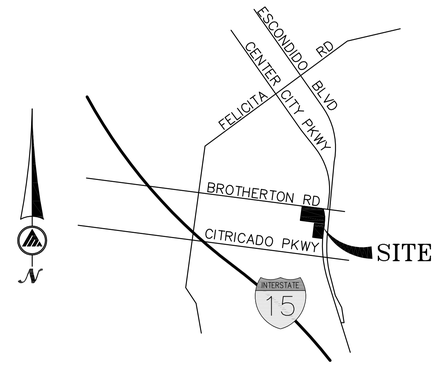


LEGEND

SYMBOL	DESCRIPTION
	DMA BOUNDARY
	PROPERTY LINE
SD SD SD SD SD	PROPOSED STORM DRAIN
	SELF-TREATED AREA DRAINS INTO EXISTING STORM DRAIN
	BIORETENTION BASIN

DEL PRADO

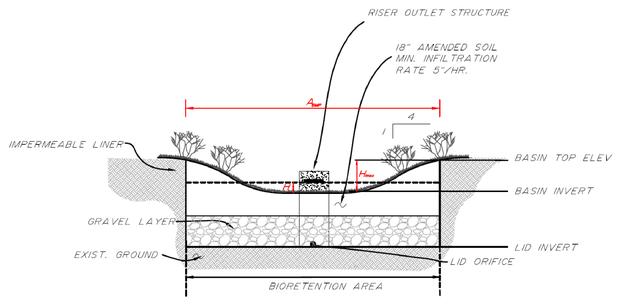
CITY OF ESCONDIDO, CALIFORNIA



VICINITY MAP

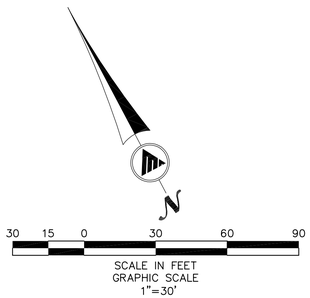
NTS

	Design Capture Volume (DCV)		DMA - 1	
1	85th percentile 24-hr storm depth	d=	0.58	inches
2	Area tributary to BMP (s)	A=	3.3	acres
3	Area Weighted runoff factor	C=	0.9	unitless
4	Rain Barrels volume reduction	TCV=	0	cubic-feet
5	Street trees volume reduction	RCV=	0	cubic-feet
6	Calculator DCV = (3630 x C x d x A) - TCV - RCV	DCV=	6253.0	cubic-feet



BIORETENTION AREA CROSS SECTION (TYP)

NOT TO SCALE



DMA NORTH EXHIBIT

STORM WATER QUALITY MANAGEMENT PALN
DEL PRADO, CITY OF ESCONDIDO CA

DATE: Jan 28, 16 5:31pm by:mfatini
FILE:I:\11\11015\PROD\Reports\SWQMP\11015-SWQMP-North.dwg

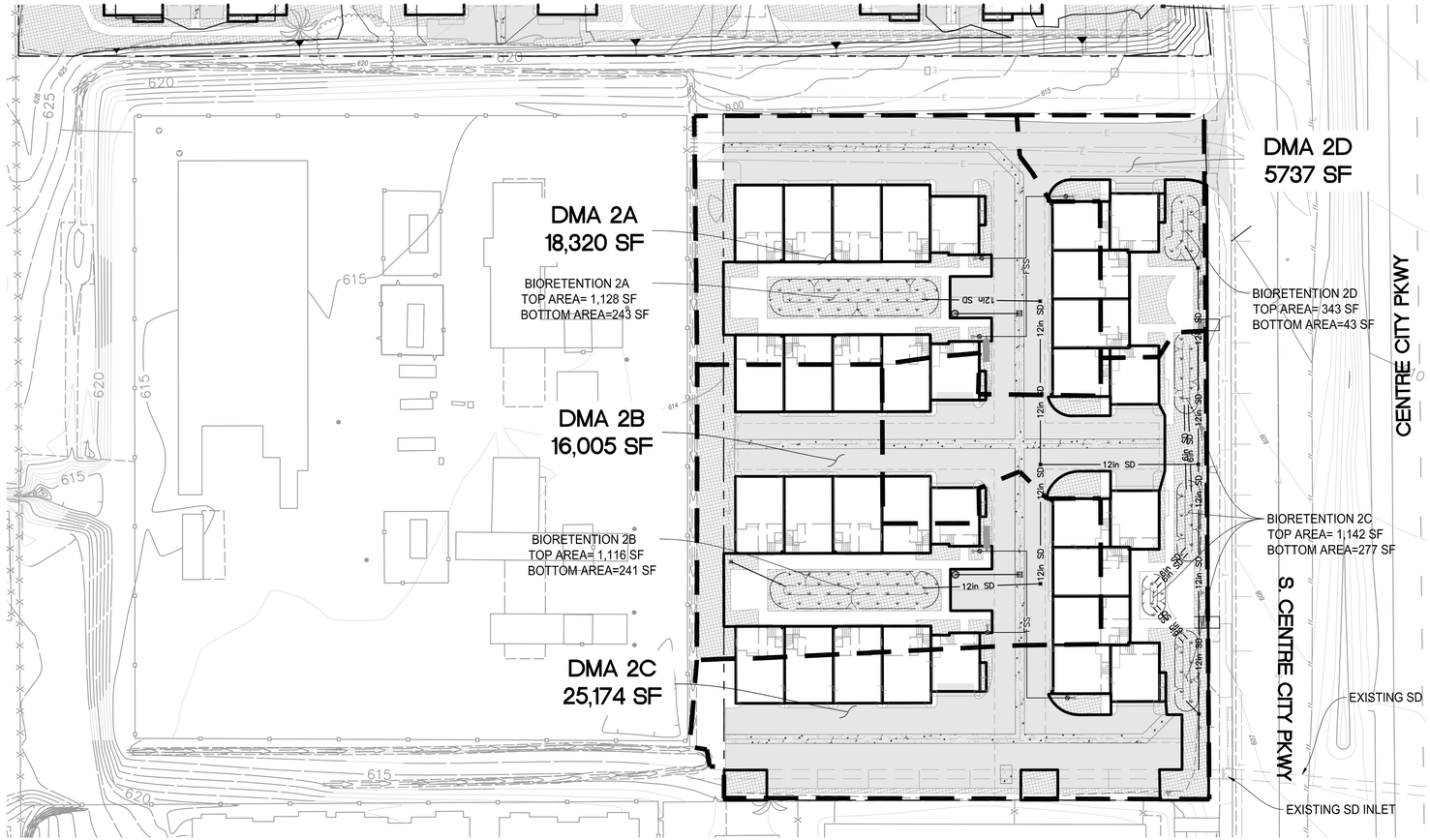
Planning ▲ Engineering ▲ Surveying ▲ Telecom

MASSON & ASSOCIATES, INC.

200 East Washington Ave., Suite 200
Escondido, CA 92025
P. 760.741.3570
F. 760.741.1786

25185 Madison Avenue
Suite A
Murrieta, CA 92562

www.masson-assoc.com

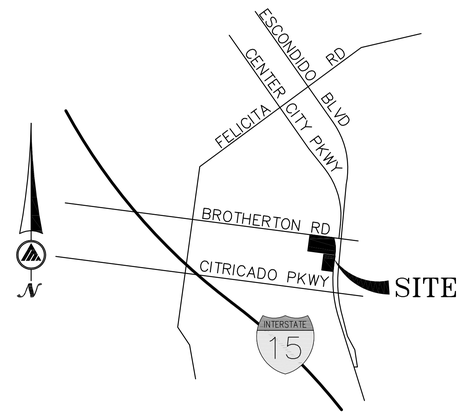


LEGEND

SYMBOL	DESCRIPTION
	DMA BOUNDARY
	PROPERTY LINE
SD SD SD SD SD	PROPOSED STORM DRAIN
	BIORETENTION BASIN

DEL PRADO

CITY OF ESCONDIDO, CALIFORNIA



VICINITY MAP

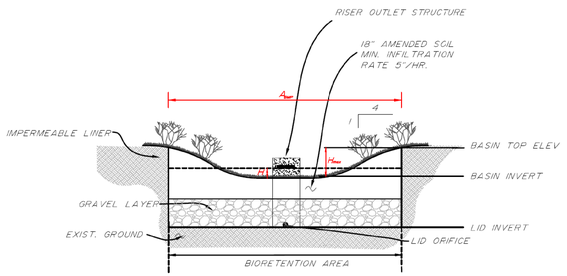
NTS

	Design Capture Volume (DCV)		DMA - 2A	
1	85th percentile 24-hr storm depth	d=	0.58	inches
2	Area tributary to BMP (s)	A=	0.42	acres
3	Area Weighted runoff factor	C=	0.9	unitless
4	Rain Barrels volume reduction	TCV=	0	cubic-feet
5	Street trees volume reduction	RCV=	0	cubic-feet
6	Calculator DCV = (3630 x C x d x A) - TCV - RCV	DCV=	795.8	cubic-feet

	Design Capture Volume (DCV)		DMA - 2C	
1	85th percentile 24-hr storm depth	d=	0.58	inches
2	Area tributary to BMP (s)	A=	0.58	acres
3	Area Weighted runoff factor	C=	0.9	unitless
4	Rain Barrels volume reduction	TCV=	0	cubic-feet
5	Street trees volume reduction	RCV=	0	cubic-feet
6	Calculator DCV = (3630 x C x d x A) - TCV - RCV	DCV=	1099.0	cubic-feet

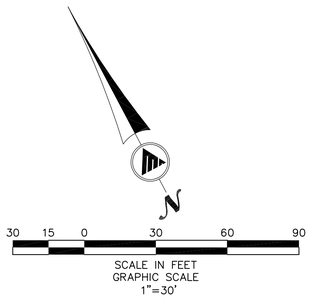
	Design Capture Volume (DCV)		DMA - 2B	
1	85th percentile 24-hr storm depth	d=	0.58	inches
2	Area tributary to BMP (s)	A=	0.37	acres
3	Area Weighted runoff factor	C=	0.9	unitless
4	Rain Barrels volume reduction	TCV=	0	cubic-feet
5	Street trees volume reduction	RCV=	0	cubic-feet
6	Calculator DCV = (3630 x C x d x A) - TCV - RCV	DCV=	695.4	cubic-feet

	Design Capture Volume (DCV)		DMA - 2D	
1	85th percentile 24-hr storm depth	d=	0.58	inches
2	Area tributary to BMP (s)	A=	0.13	acres
3	Area Weighted runoff factor	C=	0.9	unitless
4	Rain Barrels volume reduction	TCV=	0	cubic-feet
5	Street trees volume reduction	RCV=	0	cubic-feet
6	Calculator DCV = (3630 x C x d x A) - TCV - RCV	DCV=	250.1	cubic-feet



BIORETENTION AREA CROSS SECTION (TYP)

NOT TO SCALE



DMA SOUTH EXHIBIT

STORM WATER QUALITY MANAGEMENT PLAN
DEL PRADO, CITY OF ESCONDIDO CA

DATE: Jan 28, 16 5:39pm by:mfatini
FILE:I:\11\11015\PROD\Reports\SWQMP\11015-SWQMP-South.dwg

Planning ▲ Engineering ▲ Surveying ▲ Telecom

MASSON & ASSOCIATES, INC.

200 East Washington Ave., Suite 200
Escondido, CA 92025
P. 760.741.3570
F. 760.741.1786

25185 Madison Avenue
Suite A
Murrieta, CA 92562

www.masson-assoc.com

PRELIMINARY
DRAINAGE STUDY

FOR

Del Prado
2329 CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA

OWNER:
Touchstone Communities
12700 Stowe Drive, Suite 130
Poway, CA 92064
858-586-0414

ENGINEER:
MASSON & ASSOCIATES, INC.
200 E. Washington Ave. Suite 200
Escondido, CA 92025
(760) 741-3570

BY:

_____

Bruce A. Tait, RCE 32247

PN: 11015
Date: July 24, 2015

TABLE OF CONTENTS

VICINITY MAP

METHODOLOGY

EXISTING CONDITIONS

PROPOSED CONDITIONS

CONCLUSION

APPENDICES

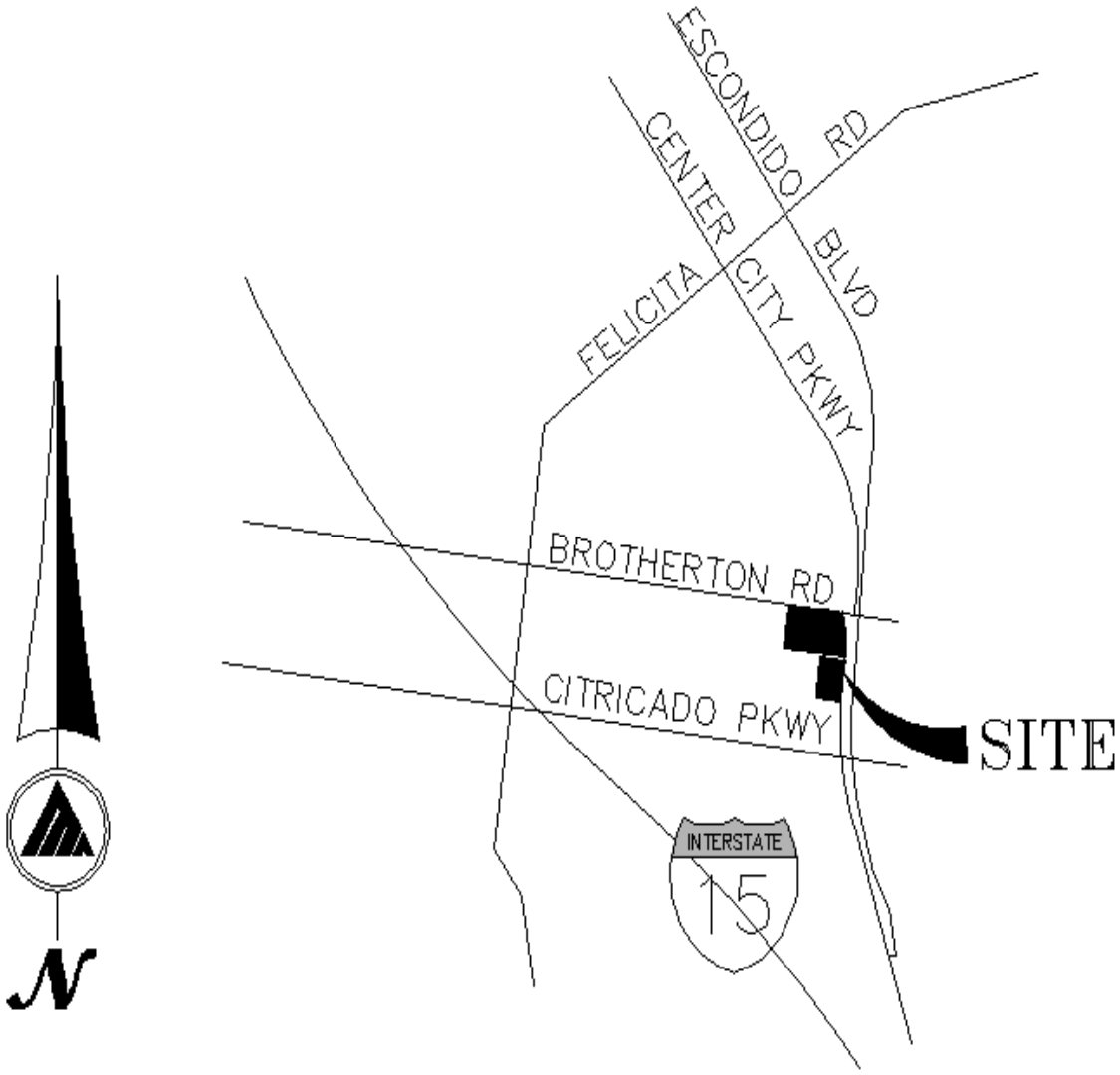
Appendix A – Previous Development Calculations
Appendix B – Post-Development Calculations
Appendix C – Reference Charts
Figure No .1 Runoff Intensity Duration Curve
Figure No. 2 Runoff Time Chart
Table 3-1 Runoff Coefficients for Urban Areas
50 Year Rainfall Event – 6 Hours
50 Year Rainfall Event – 24 Hours
Appendix D – NRCS Hydrologic Soil Group Data

EXHIBITS:

Exhibit A – Pre-Development Hydrology Map (Offsite)
Exhibit A-1 – Pre-Development Hydrology Map
Exhibit B – Post-Development Hydrology Map

DEL PRADO

CITY OF ESCONDIDO, CALIFORNIA



VICINITY MAP

NTS

CURRENT CONDITION

PROJECT SITE
Brotherton Rd
Centre City Parkway
S Escondido Blvd
Nicolo Ct
Map
Traffic

INTRODUCTION:

The Project is located in the City of Escondido, on the southwestern corner of Brotherton Road and South Centre City Parkway (Frontage Road). The proposed project is a 2-lots (one in north and one south) multi-family subdivision of property located on an approximately 4.8 acre +/- acre site. The proposed development will be composed of 113 condominium units (81 units on north and 32 units on south), recreation area and onsite parking throughout the site.

According to the NRCS Website Survey, the site situated in hydrologic soil group C and D. A drainage study was performed to evaluate the needs and effects of the runoff from the property. This summarizes the findings of the study.

METHODOLOGY:

The method used herein to determine discharge quantities is the Rational Method as described in the City of Escondido Drainage Design Standards. Per the city drainage standards, for areas less than 0.5 square miles, a 50-year storm frequency event was used to determine runoff quantities.

Pre and post development hydrology maps are located in the back of this report as Exhibit 'A-1' and Exhibit 'B' respectively. The included maps outline the sub-basins, flow paths and concentration points for runoff discharging from the site area. All applicable tables and charts referenced from the manual are included herein.

CURRENT CONDITIONS:

The site is bordered to the east by S Centre City Parkway, to the west by single family homes and SDG&E sub station, to the south by commercial developments and to the north by Brotherton Road.

The site is currently undeveloped and covered mainly by grasses and medium size trees and small portion is impervious area that used to be parking lot and building.

Basin "1" sheet flows east-southerly onto S. Centre City Parkway with an average slope of 2.5% and ultimately drains into an existing grate inlet located on southeasterly corner of the Basin "1" on S. Centre City Parkway.

Basin "2" sheet flows east-southerly onto S. Centre City Parkway with an average slope of 3% into an existing curb inlet located at Basin "2" frontage on S. Center City Parkway.

There is no stormwater drainage onto the site from the surrounding areas. There are brow ditches around the site that collect the offsite runoff and route them into an existing storm drain system located south side of the project site.

10 minute minimum time of concentration was used for calculations per City of Escondido standards.

See Appendix A and A-1 for exhibits showing the drainage areas

Table A– Offsite Runoff

Basin	Area (Ac)	Q_{50} (CFS)
3	40.3	60.5

Table B– Pre Condition

Basin	Area (Ac)	Q_{50} (CFS)
1	3.4	5.2
2	1.5	1.8

PROPOSED CONDITIONS:

The proposed on-site development drainage will consist of 2 major drainage basins located on the north and south portions of the project site. Basin 1 is the largest of the drainage basins located on the north portion of the site which will drain via street gutters and proposed storm drain system towards a proposed treatment basin that is located in the middle part of the project site. After treatment and retention of excess flow the onsite drainage flow will be conveyed via the proposed storm drain system to the existing offsite storm drain system and ultimately into Escondido Creek.

Basin 2 will consist of multiple sub-basins that will drain via street gutter and proposed storm drain system towards a series of treatment basins. After treatment and retention of excess flow the onsite drainage flow will be conveyed via the proposed storm drain system to the existing offsite storm drain system and then into Escondido Creek.

A small portion of the site will drain directly onto S. Center City Parkway from the proposed onsite perimeter landscaping which will then drain into the grate inlet and the curb inlet located on southeast corner of the basin 1 and southeast corner of the basin 2, respectively then into an existing storm drain system and ultimately onto Escondido Creek.

10 minute minimum time of concentration was used for calculations per City of Escondido standards.

The following C factors were used:

High Density Residential: 0.70 for what soil type(s)?

Landscaped Area: ???

Table C – BASIN 1– POST CONDITION

Basin	Area (Ac)	Q_{50} (CFS)
1A	3.3	8.4
1B	0.16	0.2
CP#1	**3.4**	**8.6**

Table D – BASIN 2– POST CONDITION

Basin	Area (Ac)	Q_{50} (CFS)
2A	0.42	1.0
2B	0.37	0.9
2C	0.58	1.3
2D	0.13	0.3
CP#2	**1.5**	**3.5**

See Appendix B for calculations and exhibit.

CONCLUSIONS:

A comparison of the on-site runoff from the existing condition to the proposed conditions shows an increase in runoff because the proposed development adds impervious surfaces.

As previously mentioned, the runoff from the proposed development has been minimized by the use of water quality treatment facilities located before the off-site discharge points which consist of biofiltration basins. The water quality treatment basins also act as retention basins. The retention of water during biofiltration treatment of stormwater will have the beneficial side effect of helping to reduce the amount of flow exiting the site.

On-site condition

Summary Table D

Basin	Area (Ac) Pre	Q_{50} (CFS) Pre	Area (Ac) Post	Q50 (CFS) Post
CP#1	3.4	5.2	3.4	8.6
CP #2	1.5	1.8	1.5	3.5

APPENDIX A
EXISTING CONDITIONS CALCULATIONS

San Diego County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c)1991-2005 Version 7.5

Rational method hydrology program based on
San Diego County Flood Control Division 2003 hydrology manual
Rational Hydrology Study Date: 07/14/15

Pre-Developement Drainage Study
PN 11015
Basin 1
50 Year Event

********* Hydrology Study Control Information **********

Program License Serial Number 4065

Rational hydrology study storm event year is 50.0
English (in-lb) input data Units used

Map data precipitation entered:
6 hour, precipitation(inches) = 2.800
24 hour precipitation(inches) = 5.500
P6/P24 = 50.9%
San Diego hydrology manual 'C' values used

++

Process from Point/Station 1.010 to Point/Station 1.020
**** INITIAL AREA EVALUATION ****

Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.540
Decimal fraction soil group D = 0.460
[LOW DENSITY RESIDENTIAL]
(1.0 DU/A or Less)
Impervious value, Ai = 0.100
Sub-Area C Value = 0.383
Initial subarea total flow distance = 100.000(Ft.)
Highest elevation = 629.000(Ft.)
Lowest elevation = 627.600(Ft.)

```
      Elevation difference =    1.400(Ft.) Slope =  1.400 %
      USER ENTRY OF INITIAL AREA TIME OF CONCENTRATION
      Time of Concentration =  10.00 minutes
      Rainfall intensity (I) =      4.718(In/Hr) for a    50.0 year storm
      Effective runoff coefficient used for area (Q=KCIA) is C = 0.383
      Subarea runoff =      0.121(CFS)
      Total initial stream area =        0.067(Ac.)


      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++
      Process from Point/Station        1.020 to Point/Station
1.030
      **** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
      ____________________________________________________________________
___
      Estimated mean flow rate at midpoint of channel =      2.711(CFS)
      Depth of flow =   0.222(Ft.), Average velocity =   2.499(Ft/s)
            ******* Irregular Channel Data ***********
      ------------------------------------------------------------------
      Information entered for subchannel number 1 :
      Point number      'X' coordinate     'Y' coordinate
            1              0.00              1.00
            2              4.00              0.00
            3              8.00              0.00
            4             12.00              1.00
      Manning's 'N' friction factor =   0.035
      ------------------------------------------------------------------
      Sub-Channel flow  =      2.711(CFS)
        '     '   flow top width =      5.776(Ft.)
        '     '    velocity=    2.499(Ft/s)
        '     '   area =      1.085(Sq.Ft)
        '     '   Froude number =     1.016

      Upstream point elevation =   627.600(Ft.)
      Downstream point elevation =   612.700(Ft.)
      Flow length =   457.000(Ft.)
      Travel time  =    3.05 min.
      Time of concentration =   13.05 min.
      Depth of flow =   0.222(Ft.)
      Average velocity =   2.499(Ft/s)
      Total irregular channel flow =     2.711(CFS)
      Irregular channel normal depth above invert elev. =   0.222(Ft.)
      Average velocity of channel(s) =   2.499(Ft/s)
       Adding area flow to channel
      Decimal fraction soil group A = 0.000
      Decimal fraction soil group B = 0.000
      Decimal fraction soil group C = 0.540
      Decimal fraction soil group D = 0.460
      [LOW DENSITY RESIDENTIAL                    ]
      (1.0 DU/A or Less       )
      Impervious value, Ai = 0.100
      Sub-Area C Value = 0.383
      Rainfall intensity =      3.974(In/Hr) for a    50.0 year storm
```

```
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.383  CA =      1.316
Subarea runoff =      5.110(CFS) for      3.370(Ac.)
Total runoff =      5.231(CFS)    Total area =       3.437(Ac.)
Depth of flow =   0.321(Ft.), Average velocity =   3.084(Ft/s)
End of computations, total study area =           3.437 (Ac.)
```

San Diego County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c)1991-2005 Version 7.5

Rational method hydrology program based on
San Diego County Flood Control Division 2003 hydrology manual
Rational Hydrology Study Date: 07/14/15

Pre-Developement Drainage Study
PN 11015
Basin 2
50 Year

********* Hydrology Study Control Information **********

Program License Serial Number 4065

Rational hydrology study storm event year is 50.0
English (in-lb) input data Units used

Map data precipitation entered:
6 hour, precipitation(inches) = 2.800
24 hour precipitation(inches) = 5.500
P6/P24 = 50.9%
San Diego hydrology manual 'C' values used

++

Process from Point/Station 2.010 to Point/Station 2.020
**** INITIAL AREA EVALUATION ****

Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.540
Decimal fraction soil group D = 0.460
[UNDISTURBED NATURAL TERRAIN]
(Permanent Open Space)
Impervious value, Ai = 0.000
Sub-Area C Value = 0.323
Initial subarea total flow distance = 100.000(Ft.)
Highest elevation = 615.000(Ft.)
Lowest elevation = 613.300(Ft.)

```
      Elevation difference =    1.700(Ft.) Slope =  1.700 %
      INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
      The maximum overland flow distance is 85.00 (Ft)
      for the top area slope value of   1.70 %, in a development type of
       Permanent Open Space
      In Accordance With Table 3-2
      Initial Area Time of Concentration =  10.90 minutes
       (for slope value of   2.00 %)
      The initial area total distance of  100.00 (Ft.) entered leaves a
      remaining distance of   15.00 (Ft.)
      Using Figure 3-4, the travel time for this distance is   0.30
minutes
      for a distance of  15.00 (Ft.) and a slope of  1.70 %
      with an elevation difference of   0.26(Ft.) from the end of the top
area
      Tt = [11.9*length(Mi)^3)/(elevation change(Ft.))]^.385 *60(min/hr)
       =    0.302 Minutes
      Tt=[(11.9*0.0028^3)/(  0.26)]^.385=  0.30
      Total initial area Ti =  10.90 minutes from Table 3-2 plus
        0.30 minutes from the Figure 3-4 formula =  11.20 minutes
      Rainfall intensity (I) =      4.385(In/Hr) for a    50.0 year storm
      Effective runoff coefficient used for area (Q=KCIA) is C = 0.323
      Subarea runoff =      0.156(CFS)
      Total initial stream area =        0.110(Ac.)


      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++
      Process from Point/Station        2.020 to Point/Station
2.030
      **** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
      ____________________________________________________________________
___
      Estimated mean flow rate at midpoint of channel =      1.014(CFS)
      Depth of flow =   0.156(Ft.), Average velocity =   1.442(Ft/s)
            ******* Irregular Channel Data ***********
      ------------------------------------------------------------------
      Information entered for subchannel number 1 :
      Point number      'X' coordinate     'Y' coordinate
            1              0.00              1.00
            2              4.00              0.00
            3              8.00              0.00
            4             13.00              2.00
      Manning's 'N' friction factor =   0.035
      ------------------------------------------------------------------
      Sub-Channel flow  =      1.014(CFS)
        '     '   flow top width =      5.015(Ft.)
        '     '    velocity=    1.442(Ft/s)
        '     '   area =      0.704(Sq.Ft)
        '     '   Froude number =     0.678

      Upstream point elevation =   613.300(Ft.)
      Downstream point elevation =   608.300(Ft.)
      Flow length =   312.000(Ft.)
```

```
Travel time  =    3.61 min.
Time of concentration =   14.81 min.
Depth of flow =   0.156(Ft.)
Average velocity =   1.442(Ft/s)
Total irregular channel flow =     1.014(CFS)
Irregular channel normal depth above invert elev. =   0.156(Ft.)
Average velocity of channel(s) =   1.442(Ft/s)
 Adding area flow to channel
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.540
Decimal fraction soil group D = 0.460
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.323
Rainfall intensity =      3.662(In/Hr) for a    50.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.323  CA =      0.486
Subarea runoff =      1.625(CFS) for      1.395(Ac.)
Total runoff =      1.780(CFS)    Total area =       1.505(Ac.)
Depth of flow =   0.216(Ft.), Average velocity =   1.750(Ft/s)
End of computations, total study area =           1.505 (Ac.)
```

San Diego County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c)1991-2005 Version 7.5

Rational method hydrology program based on
San Diego County Flood Control Division 2003 hydrology manual
Rational Hydrology Study Date: 07/07/15

Offsite Analysis
PN 11015
Basin 3
50 Year Event

********* Hydrology Study Control Information **********

Program License Serial Number 4065

Rational hydrology study storm event year is 50.0
English (in-lb) input data Units used

Map data precipitation entered:
6 hour, precipitation(inches) = 2.800
24 hour precipitation(inches) = 5.500
P6/P24 = 50.9%
San Diego hydrology manual 'C' values used

++

Process from Point/Station 3.010 to Point/Station 3.020
**** INITIAL AREA EVALUATION ****

Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
[MEDIUM DENSITY RESIDENTIAL]
(14.5 DU/A or Less)
Impervious value, Ai = 0.500
Sub-Area C Value = 0.630
Initial subarea total flow distance = 169.000(Ft.)
Highest elevation = 670.000(Ft.)
Lowest elevation = 668.300(Ft.)

```
      Elevation difference =    1.700(Ft.) Slope =  1.006 %
      Top of Initial Area Slope adjusted by User to  0.010 %
      Bottom of Initial Area Slope adjusted by User to  0.010 %
      INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
      The maximum overland flow distance is 50.00 (Ft)
      for the top area slope value of   0.01 %, in a development type of
       14.5 DU/A or Less
      In Accordance With Table 3-2
      Initial Area Time of Concentration =   8.20 minutes
       (for slope value of   0.50 %)
      The initial area total distance of  169.00 (Ft.) entered leaves a
      remaining distance of  119.00 (Ft.)
      Using Figure 3-4, the travel time for this distance is  10.73
minutes
      for a distance of 119.00 (Ft.) and a slope of  0.01 %
      with an elevation difference of   0.01(Ft.) from the end of the top
area
      Tt = [11.9*length(Mi)^3)/(elevation change(Ft.))]^.385 *60(min/hr)
       =   10.734 Minutes
      Tt=[(11.9*0.0225^3)/(  0.01)]^.385= 10.73
      Total initial area Ti =   8.20 minutes from Table 3-2 plus
       10.73 minutes from the Figure 3-4 formula =  18.93 minutes
      Rainfall intensity (I) =      3.125(In/Hr) for a    50.0 year storm
      Effective runoff coefficient used for area (Q=KCIA) is C = 0.630
      Subarea runoff =      0.866(CFS)
      Total initial stream area =        0.440(Ac.)


      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++
      Process from Point/Station        3.020 to Point/Station
3.030
      **** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
      ____________________________________________________________________
___
      Top of street segment elevation =   668.300(Ft.)
      End of street segment elevation =   624.000(Ft.)
      Length of street segment  =  2300.000(Ft.)
      Height of curb above gutter flowline  =    6.0(In.)
      Width of half street (curb to crown)  =  22.000(Ft.)
      Distance from crown to crossfall grade break  =  20.500(Ft.)
      Slope from gutter to grade break (v/hz) =   0.020
      Slope from grade break to crown (v/hz)  =   0.020
      Street flow is on [2] side(s) of the street
      Distance from curb to property line  =  10.000(Ft.)
      Slope from curb to property line (v/hz) =   0.020
      Gutter width =   1.500(Ft.)
      Gutter hike from flowline =  1.500(In.)
       Manning's N in gutter =  0.0180
       Manning's N from gutter to grade break =  0.0180
       Manning's N from grade break to crown =  0.0180
      Estimated mean flow rate at midpoint of street =     30.569(CFS)
      Depth of flow =   0.489(Ft.), Average velocity =   3.863(Ft/s)
      Streetflow hydraulics at midpoint of street travel:
```

```
      Halfstreet flow width =  19.711(Ft.)
      Flow velocity =   3.86(Ft/s)
      Travel time =    9.92 min.     TC =   28.86  min.
       Adding area flow to street
      Decimal fraction soil group A = 0.000
      Decimal fraction soil group B = 0.000
      Decimal fraction soil group C = 0.000
      Decimal fraction soil group D = 1.000
      [MEDIUM DENSITY RESIDENTIAL                 ]
      (14.5 DU/A or Less      )
      Impervious value, Ai = 0.500
      Sub-Area C Value = 0.630
      Rainfall intensity =      2.382(In/Hr) for a    50.0 year storm
      Effective runoff coefficient used for total area
      (Q=KCIA) is C = 0.630  CA =     25.389
      Subarea runoff =     59.600(CFS) for     39.860(Ac.)
      Total runoff =     60.466(CFS)    Total area =      40.300(Ac.)
      Street flow at end of street =     60.466(CFS)
      Half street flow at end of street =     30.233(CFS)
      Warning: depth of flow exceeds top of curb
      Note:  depth of flow exceeds top of street crown.
      Distance that curb overflow reaches into property =   10.00(Ft.)
      Flow width (from curb towards crown)=  22.000(Ft.)


      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++
      Process from Point/Station        3.030 to Point/Station
3.040
      **** IMPROVED CHANNEL TRAVEL TIME ****
      ____________________________________________________________________
___
      Covered channel
      Upstream point elevation =   624.000(Ft.)
      Downstream point elevation =   612.000(Ft.)
      Channel length thru subarea  =   310.000(Ft.)
      Channel base width     =    3.000(Ft.)
      Slope or 'Z' of left channel bank =   2.000
      Slope or 'Z' of right channel bank =   2.000
      Manning's 'N'    = 0.018
      Maximum depth of channel  =    2.000(Ft.)
      Flow(q) thru subarea =     60.466(CFS)
      Depth of flow =   0.986(Ft.), Average velocity =  12.333(Ft/s)
      Channel flow top width =    6.944(Ft.)
      Flow Velocity =   12.33(Ft/s)
      Travel time  =    0.42 min.
      Time of concentration =   29.28 min.
      Critical depth =      1.641(Ft.)


      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++
      Process from Point/Station        1.040 to Point/Station
1.050
```

**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 609.000(Ft.)
Downstream point/station elevation = 608.000(Ft.)
Pipe length = 220.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 60.466(CFS)
Nearest computed pipe diameter = 42.00(In.)
Calculated individual pipe flow = 60.466(CFS)
Normal flow depth in pipe = 30.89(In.)
Flow top width inside pipe = 37.05(In.)
Critical Depth = 29.24(In.)
Pipe flow velocity = 7.97(Ft/s)
Travel time through pipe = 0.46 min.
Time of concentration (TC) = 29.74 min.
End of computations, total study area = 40.300 (Ac.)

APPENDIX B
POST CONDITIONS CALCULATIONS

San Diego County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c)1991-2005 Version 7.5

Rational method hydrology program based on
San Diego County Flood Control Division 2003 hydrology manual
Rational Hydrology Study Date: 07/14/15

POST DEVELOPMENT ANALYSIS FOR DEL PRADO
PN 11015
Basin 1a
50 YEAR STORM

********* Hydrology Study Control Information **********

Program License Serial Number 4065

Rational hydrology study storm event year is 50.0
English (in-lb) input data Units used

Map data precipitation entered:
6 hour, precipitation(inches) = 2.800
24 hour precipitation(inches) = 5.500
P6/P24 = 50.9%
San Diego hydrology manual 'C' values used

++

Process from Point/Station 1.010 to Point/Station 1.020
**** INITIAL AREA EVALUATION ****

Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
[HIGH DENSITY RESIDENTIAL]
(24.0 DU/A or Less)
Impervious value, Ai = 0.650
Sub-Area C Value = 0.710
Initial subarea total flow distance = 103.000(Ft.)
Highest elevation = 626.000(Ft.)
Lowest elevation = 624.900(Ft.)

```
      Elevation difference =    1.100(Ft.) Slope =  1.068 %
      INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
      The maximum overland flow distance is 65.00 (Ft)
      for the top area slope value of   1.07 %, in a development type of
       24.0 DU/A or Less
      In Accordance With Table 3-2
      Initial Area Time of Concentration =   9.50 minutes
       (for slope value of   1.00 %)
      The initial area total distance of  103.00 (Ft.) entered leaves a
      remaining distance of   38.00 (Ft.)
      Using Figure 3-4, the travel time for this distance is   0.74
minutes
      for a distance of  38.00 (Ft.) and a slope of  1.07 %
      with an elevation difference of   0.41(Ft.) from the end of the top
area
      Tt = [11.9*length(Mi)^3)/(elevation change(Ft.))]^.385 *60(min/hr)
       =    0.738 Minutes
      Tt=[(11.9*0.0072^3)/(  0.41)]^.385=  0.74
      Total initial area Ti =   9.50 minutes from Table 3-2 plus
        0.74 minutes from the Figure 3-4 formula =  10.24 minutes
      Rainfall intensity (I) =      4.647(In/Hr) for a    50.0 year storm
      Effective runoff coefficient used for area (Q=KCIA) is C = 0.710
      Subarea runoff =      0.495(CFS)
      Total initial stream area =        0.150(Ac.)


      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++
      Process from Point/Station        1.020 to Point/Station
1.030
      **** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
      ------------------------------------------------------------------
---
      Top of street segment elevation =   624.900(Ft.)
      End of street segment elevation =   622.000(Ft.)
      Length of street segment  =   432.000(Ft.)
      Height of curb above gutter flowline  =    6.0(In.)
      Width of half street (curb to crown)  =  18.000(Ft.)
      Distance from crown to crossfall grade break  =  16.500(Ft.)
      Slope from gutter to grade break (v/hz) =   0.020
      Slope from grade break to crown (v/hz)  =   0.020
      Street flow is on [2] side(s) of the street
      Distance from curb to property line  =  10.000(Ft.)
      Slope from curb to property line (v/hz) =   0.020
      Gutter width =   1.500(Ft.)
      Gutter hike from flowline =  1.500(In.)
       Manning's N in gutter =  0.0150
       Manning's N from gutter to grade break =  0.0180
       Manning's N from grade break to crown =  0.0180
      Estimated mean flow rate at midpoint of street =      4.563(CFS)
      Depth of flow =   0.323(Ft.), Average velocity =   1.658(Ft/s)
      Streetflow hydraulics at midpoint of street travel:
      Halfstreet flow width =  11.421(Ft.)
      Flow velocity =   1.66(Ft/s)
```

```
Travel time =    4.34 min.     TC =   14.58  min.
 Adding area flow to street
User specified 'C' value of 0.700 given for subarea
Rainfall intensity =      3.699(In/Hr) for a    50.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.700  CA =      2.289
Subarea runoff =      7.973(CFS) for      3.120(Ac.)
Total runoff =      8.468(CFS)    Total area =       3.270(Ac.)
Street flow at end of street =      8.468(CFS)
Half street flow at end of street =      4.234(CFS)
Depth of flow =   0.387(Ft.), Average velocity =   1.921(Ft/s)
Flow width (from curb towards crown)=  14.604(Ft.)
End of computations, total study area =           3.270 (Ac.)
```

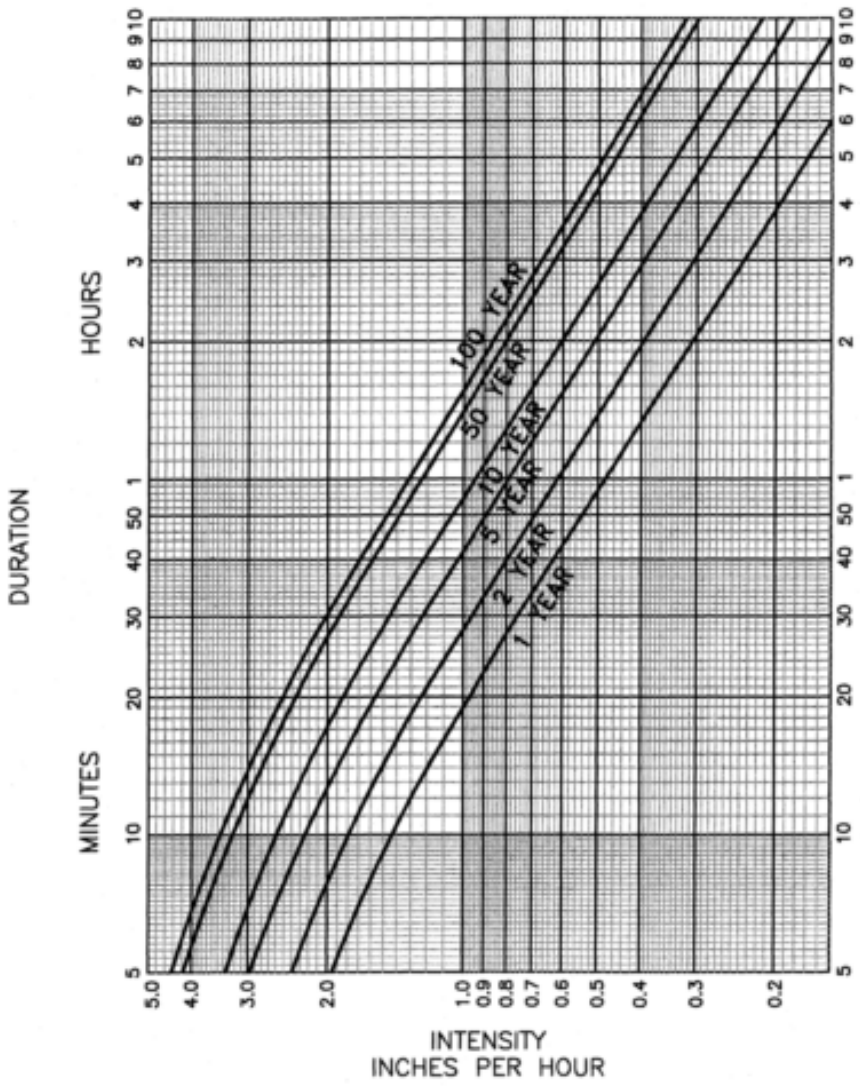
BASIN-1B

Proposed Conditions Hydrology									
BASIN ID	**AREA**	**C**	**CA**	**Change in elevation**	**Longest Runoff length**	**T_c**	**I_{50}**	**Q_{50}**	**Cummulative Q_{50},**
	(ac.)			ft	ft	(10 min.)	(in/hr)	(cfs)	(cfs)
Basin 1B	0.16	0.35	0.06	5	200	**10.0**	**3.30**	**0.18**	0.18

BASIN-2 (A-D)

Proposed Conditions Hydrology									
BASIN ID	**AREA**	**C**	**CA**	**Change in elevation**	**Longest Runoff length**	**T_c**	**I_{50}**	**Q_{50}**	**Cummulative Q_{50},**
	(ac.)			ft	ft	(10 min.)	(in/hr)	(cfs)	(cfs)
Basin 2A	0.42	0.70	0.29	3	175	**10.0**	**3.30**	**0.97**	0.97
Basin 2B	0.37	0.70	0.26	3	225	**10.0**	**3.30**	**0.85**	1.82
Basin 2C	0.58	0.70	0.41	3	220	**10.0**	**3.30**	**1.34**	3.16
Basin 2D	0.13	0.70	0.09	1	130	**10.0**	**3.30**	**0.30**	3.46
Total Flow from Site	1.50							**3.5**	3.5

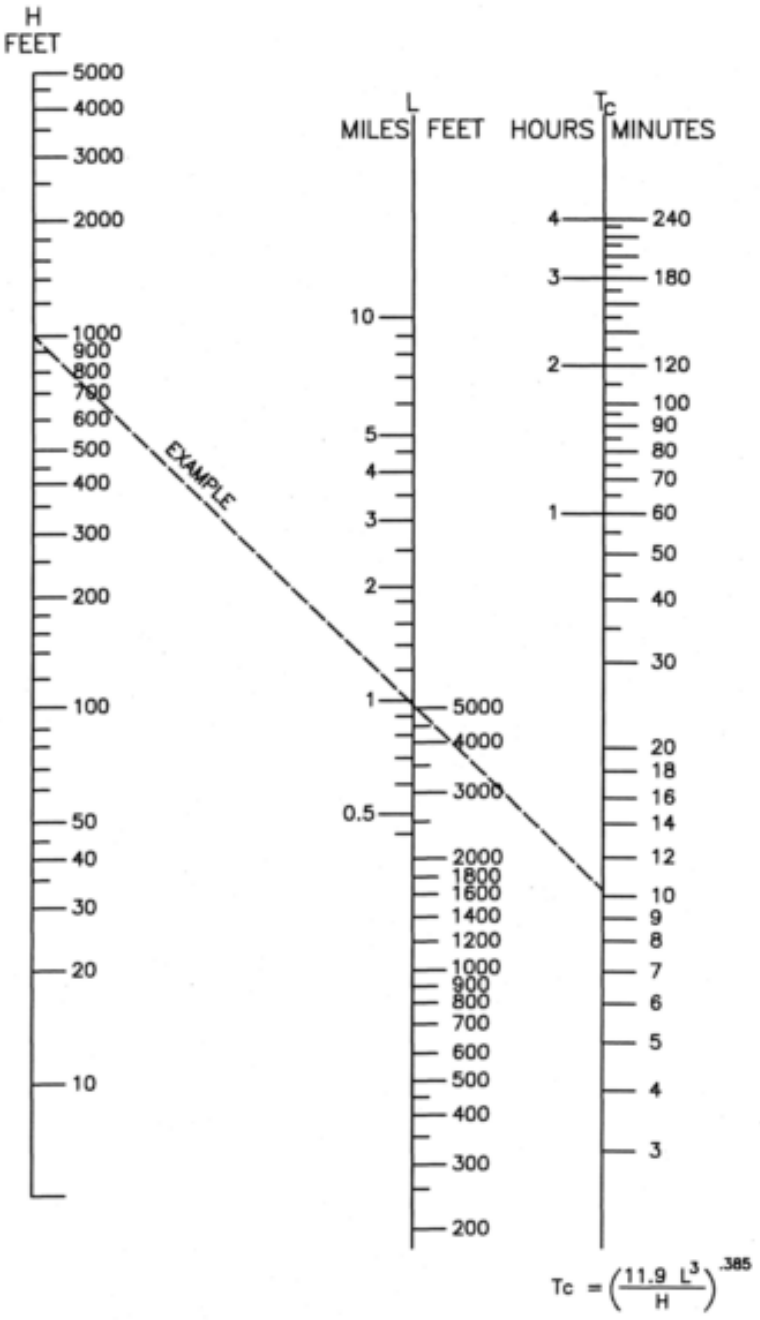
APPENDIX C
TABLES AND FIGURES FROM CITY OF ESCONDIDO DRAINAGE AND COUNTY OF SAN DIEGO STANDARDS



ESCONDIDO RUNOFF COEFFICIENTS

PARKS, GOLF COURSES, CEMETERIES	0.25
UNDEVELOPED LAND, OPEN SPACE	0.35
RURAL – OVER 1/2 ACRE LOTS	0.45
SINGLE FAMILY	0.55
MOBILE HOME	0.65
MULTIPLE UNITS	0.70
COMMERCIAL	0.85
INDUSTRIAL	0.95

APPROVED: Edward J. Domingue DIRECTOR OF ENGINEERING SERVICES	DATE: 5/6/09	CITY OF ESCONDIDO DEPARTMENT OF ENGINEERING SERVICES	SCALE: NOT TO SCALE
REVISED	APPROVED	RUNNOFF INTENSITY DURATION CURVE	FIGURE NO. 1



NOTE:

THIS CHART SHALL BE USED FOR ALL BASINS WITHIN THE CITY OF ESCONDIDO LESS 0.5 SQUARE MILE. THE MINIMUM Tc TO BE USED IS 10 MINUTES

Tc = TIME OF CONCENTRATION (HOURS)
L = LENGTH OF DRAINAGE COURSE (MILES)
H = DIFFERENCE IN ELEVATION FROM FURTHER MOST POINT OF DESIGN (FEET)

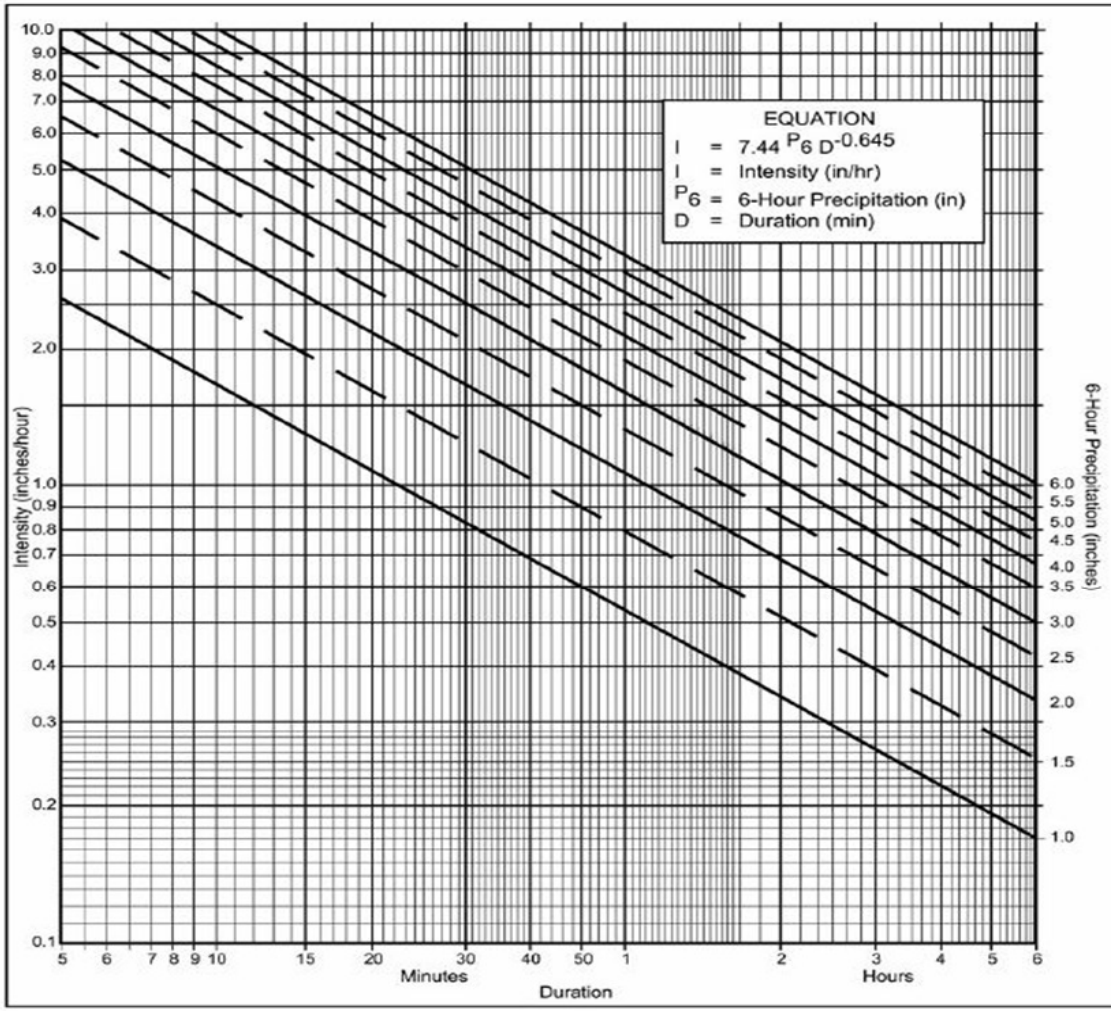
APPROVED: DIRECTOR OF ENGINEERING SERVICES — DATE: 5/6/09	CITY OF ESCONDIDO DEPARTMENT OF ENGINEERING SERVICES	SCALE: NOT TO SCALE
REVISED / APPROVED	RUNOFF TIME CHART	FIGURE NO. 2

Table 3-1
RUNOFF COEFFICIENTS FOR URBAN AREAS

Land Use			Runoff Coefficient "C"			
			Soil Type			
NRCS Elements	County Elements	% IMPER.	A	B	C	D
isturbed Natural Terrain (Natural)	Permanent Open Space	0*	0.20	0.25	0.30	0.35
Density Residential (LDR)	Residential, 1.0 DU/A or less	10	0.27	0.32	0.36	0.41
Density Residential (LDR)	Residential, 2.0 DU/A or less	20	0.34	0.38	0.42	0.46
Density Residential (LDR)	Residential, 2.9 DU/A or less	25	0.38	0.41	0.45	0.49
ium Density Residential (MDR)	Residential, 4.3 DU/A or less	30	0.41	0.45	0.48	0.52
ium Density Residential (MDR)	Residential, 7.3 DU/A or less	40	0.48	0.51	0.54	0.57
ium Density Residential (MDR)	Residential, 10.9 DU/A or less	45	0.52	0.54	0.57	0.60
ium Density Residential (MDR)	Residential, 14.5 DU/A or less	50	0.55	0.58	0.60	0.63
ı Density Residential (HDR)	Residential, 24.0 DU/A or less	65	0.66	0.67	0.69	0.71
ı Density Residential (HDR)	Residential, 43.0 DU/A or less	80	0.76	0.77	0.78	0.79
mercial/Industrial (N. Com)	Neighborhood Commercial	80	0.76	0.77	0.78	0.79
mercial/Industrial (G. Com)	General Commercial	85	0.80	0.80	0.81	0.82
mercial/Industrial (O.P. Com)	Office Professional/Commercial	90	0.83	0.84	0.84	0.85
mercial/Industrial (Limited I.)	Limited Industrial	90	0.83	0.84	0.84	0.85
mercial/Industrial (General I.)	General Industrial	95	0.87	0.87	0.87	0.87

e values associated with 0% impervious may be used for direct calculation of the runoff coefficient as described in Section 3.1.2 (representing the pervious runoff ficient, Cp, for the soil type), or for areas that will remain undisturbed in perpetuity. Justification must be given that the area will remain natural forever (e.g., the area cated in Cleveland National Forest).
A = dwelling units per acre
S = National Resources Conservation Service

I:\\I\\



Directions for Application:

(1) From precipitation maps determine 6 hr and 24 hr amounts for the selected frequency. These maps are included in the County Hydrology Manual (10, 50, and 100 yr maps included in the Design and Procedure Manual).

(2) Adjust 6 hr precipitation (if necessary) so that it is within the range of 45% to 65% of the 24 hr precipitation (not applicaple to Desert).

(3) Plot 6 hr precipitation on the right side of the chart.

(4) Draw a line through the point parallel to the plotted lines.

(5) This line is the intensity-duration curve for the location being analyzed.

Application Form:

(a) Selected frequency _____ year

(b) P_6 = _____ in., P_{24} = _____, $\frac{P_6}{P_{24}}$ = _____ %(2)

(c) Adjusted P_6(2) = _____ in.

(d) t_x = _____ min.

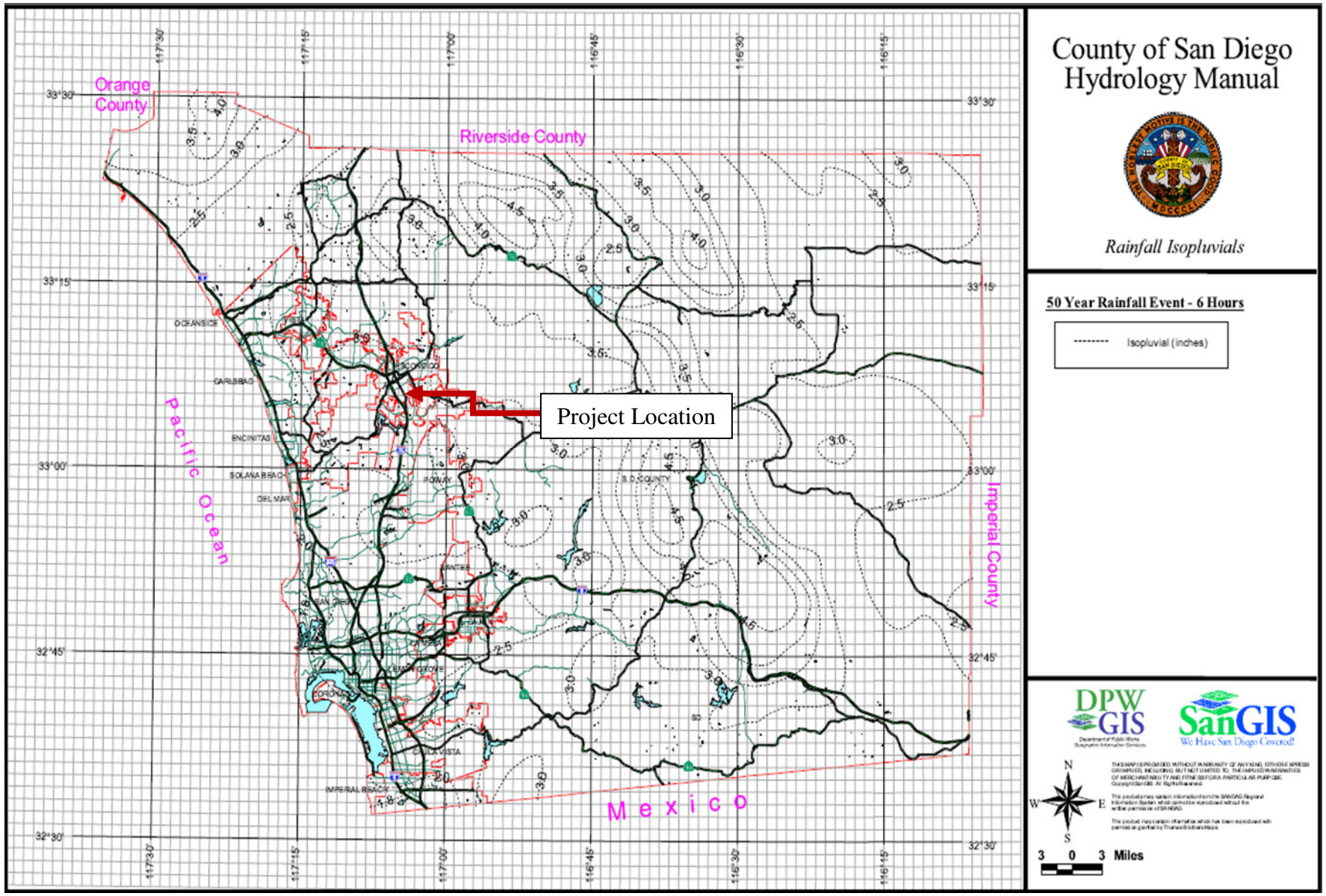
(e) I = _____ in./hr.

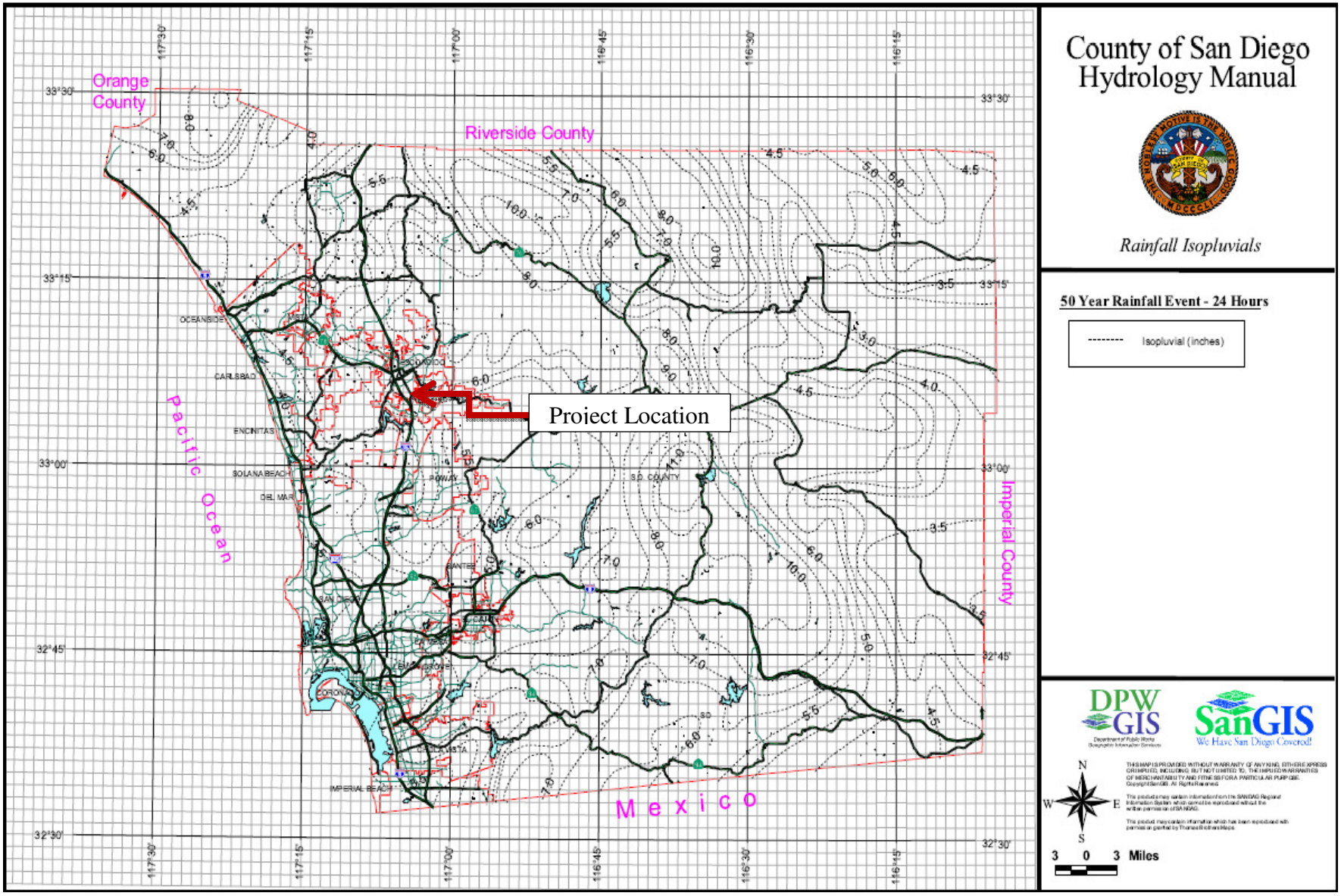
Note: This chart replaces the Intensity-Duration-Frequency curves used since 1965.

P6	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
Duration	I	I	I	I	I	I	I	I	I	I	I
5	2.63	3.95	5.27	6.59	7.90	9.22	10.54	11.86	13.17	14.49	15.81
7	2.12	3.18	4.24	5.30	6.36	7.42	8.48	9.54	10.60	11.66	12.72
10	1.68	2.53	3.37	4.21	5.05	5.90	6.74	7.58	8.42	9.27	10.11
15	1.30	1.95	2.59	3.24	3.89	4.54	5.19	5.84	6.49	7.13	7.78
20	1.08	1.62	2.15	2.69	3.23	3.77	4.31	4.85	5.39	5.93	6.46
25	0.93	1.40	1.87	2.33	2.80	3.27	3.73	4.20	4.67	5.13	5.60
30	0.83	1.24	1.66	2.07	2.49	2.90	3.32	3.73	4.15	4.56	4.98
40	0.69	1.03	1.38	1.72	2.07	2.41	2.76	3.10	3.45	3.79	4.13
50	0.60	0.90	1.19	1.49	1.79	2.09	2.39	2.69	2.98	3.28	3.58
60	0.53	0.80	1.06	1.33	1.59	1.86	2.12	2.39	2.65	2.92	3.18
90	0.41	0.61	0.82	1.02	1.23	1.43	1.63	1.84	2.04	2.25	2.45
120	0.34	0.51	0.68	0.85	1.02	1.19	1.36	1.53	1.70	1.87	2.04
150	0.29	0.44	0.59	0.73	0.88	1.03	1.18	1.32	1.47	1.62	1.76
180	0.26	0.39	0.52	0.65	0.78	0.91	1.04	1.18	1.31	1.44	1.57
240	0.22	0.33	0.43	0.54	0.65	0.76	0.87	0.98	1.08	1.19	1.30
300	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.85	0.94	1.03	1.13
360	0.17	0.25	0.33	0.42	0.50	0.58	0.67	0.75	0.84	0.92	1.00

Intensity-Duration Design Chart - Template

FIGURE 3-1


Orange County
Riverside County
Project Location
Pacific Ocean
Imperial County
Mexico
OCEANSIDE
CARLSBAD
ENCINITAS
SOLANA BEACH
DEL MAR
SAN DIEGO
CORONADO
IMPERIAL BEACH
CHULA VISTA
33°30'
33°15'
33°00'
32°45'
32°30'
117°30'
117°15'
117°00'
116°45'
116°30'
116°15'
County of San Diego
Hydrology Manual
Rainfall Isopluvials
50 Year Rainfall Event - 6 Hours
Isopluvial (inches)
DPW GIS
SanGIS
We Have San Diego Covered!
N
W
E
S
3 0 3 Miles



County of San Diego Hydrology Manual

Rainfall Isopluvials

50 Year Rainfall Event - 24 Hours

Isopluvial (inches)

DPW GIS — Department of Public Works

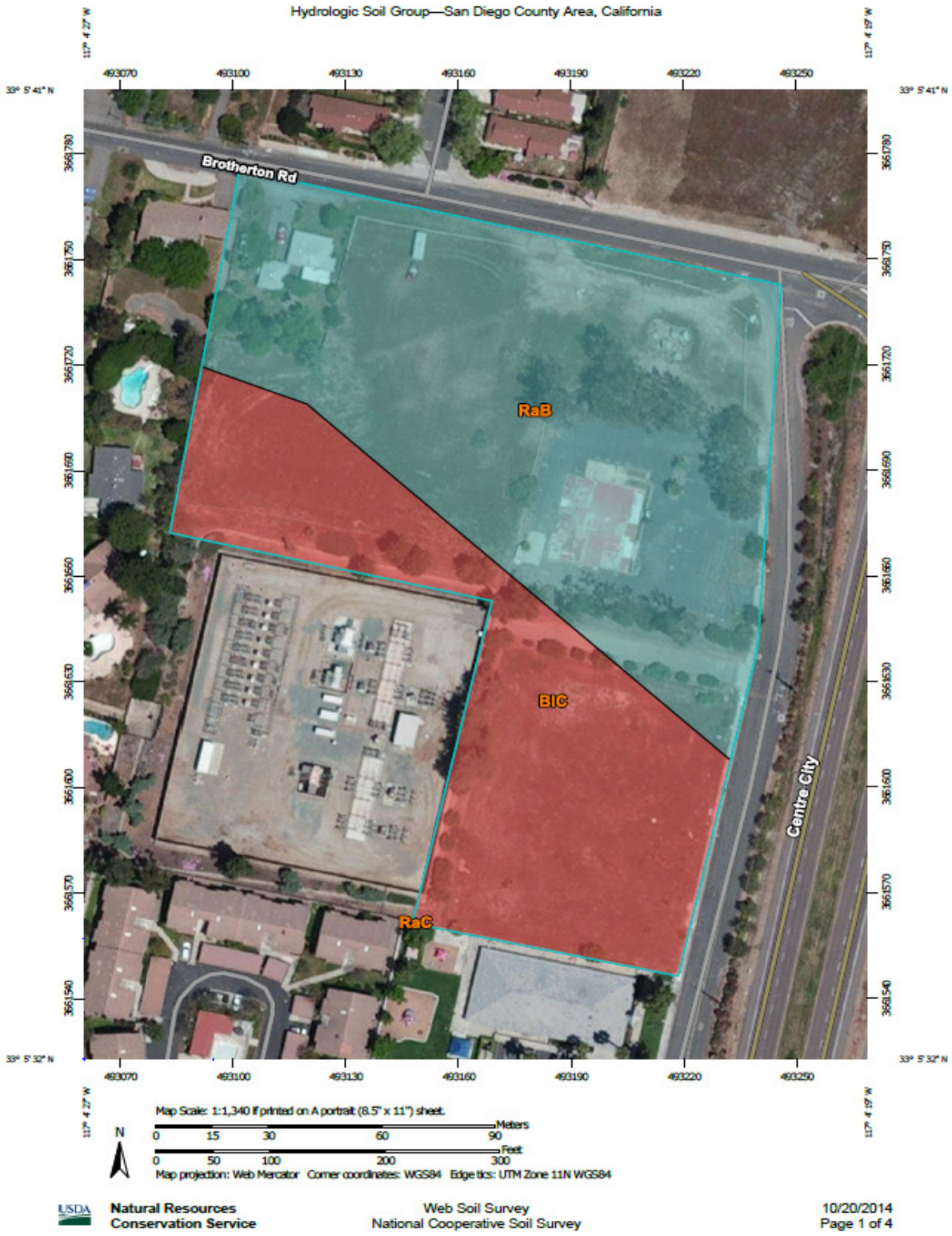
SanGIS — We Have San Diego Covered!

THIS MAP IS PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
Copyright SanGIS. All Rights Reserved.
This product may contain information from the SANDAG Regional Information System which cannot be reproduced without the written permission of SANDAG.
This product may contain information which has been reproduced with permission granted by Thomas Bros. Maps.

N W E S

3 0 3 Miles

APPENDIX D
NRCS HYDROLOGIC SOILS GROUP DATA



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
Survey Area Data: Version 8, Sep 17, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 3, 2010—Jun 19, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — San Diego County Area, California (CA638)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BIC	Bonsall sandy loam, 2 to 9 percent slopes	D	2.2	39.1%
RaB	Ramona sandy loam, 2 to 5 percent slopes	C	3.4	60.8%
RaC	Ramona sandy loam, 5 to 9 percent slopes	C	0.0	0.0%
Totals for Area of Interest			**5.7**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

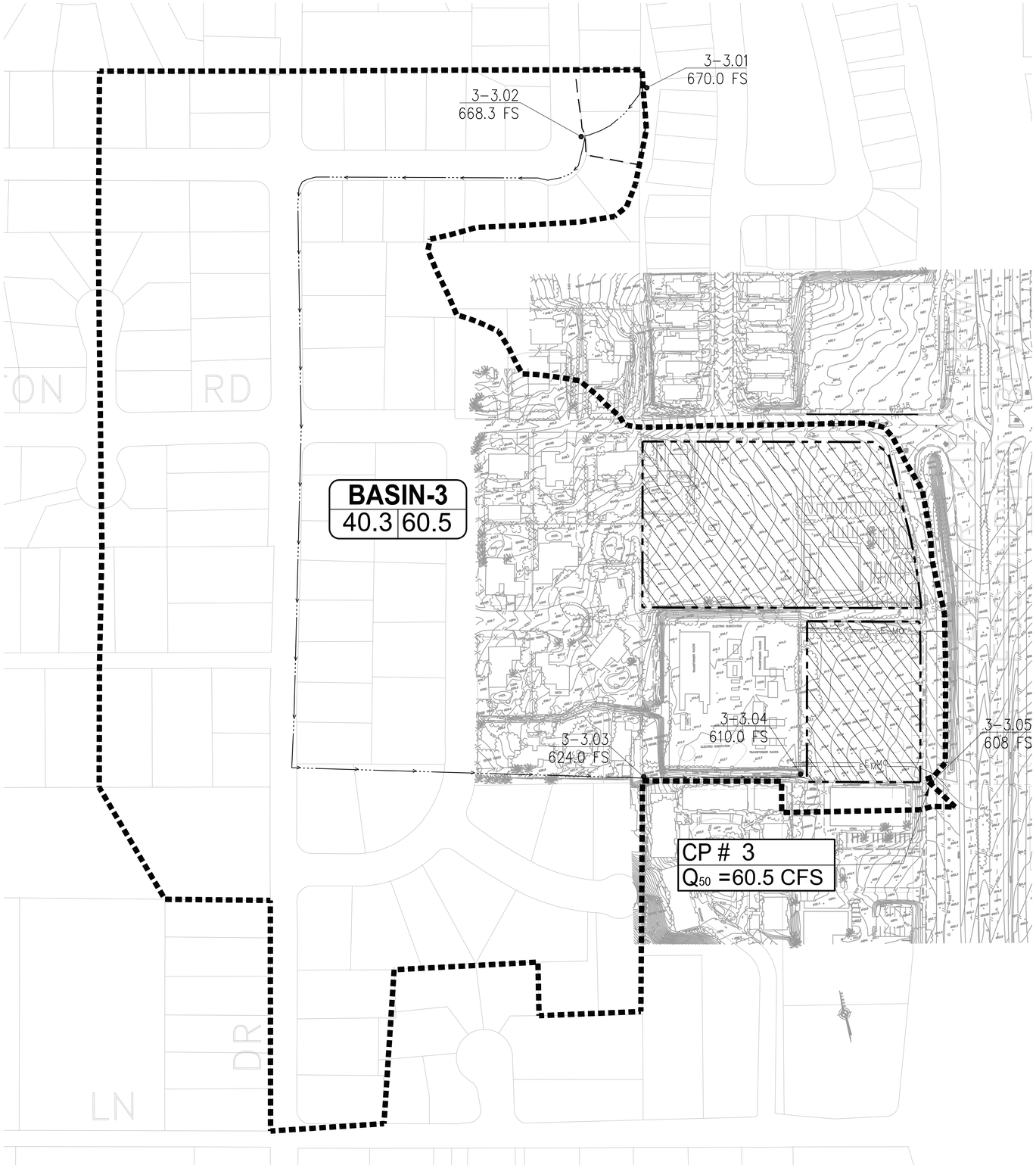
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

EXHIBIT A



LEGEND

SYMBOL	DESCRIPTION
BASIN-3 / AC | Q	BASIN DESIGNATION BASIN AREA (AC), DISCHARGE (CFS)
CP # 3 / Q_{50} =96.8 CFS	50-YEAR DISCHARGE
	EXCLUDED ONSITE-PROJECT AREA
	OFFSITE-BASIN
	FLOW PATH
3-3.01 / 670.0 FS	NODE DESIGNATED NUMBER FINISH SURFACE ELEVATION

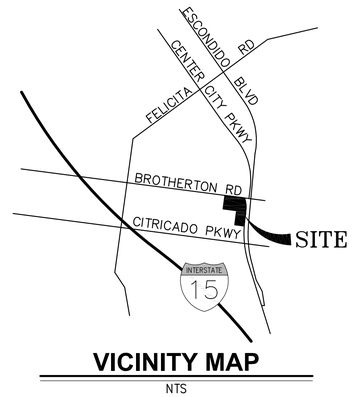
DEL PRADO SITE

CITY OF ESCONDIDO, CALIFORNIA

N

0 50 100 200

SCALE IN FEET
GRAPHIC SCALE
1"=100'



VICINITY MAP

NTS

EXHIBIT 'A'

PRE-DEVELOPMENT HYDROLOGY MAP FOR OFFSITE WOODY'S SITE, CITY OF ESCONDIDO CA

Planning ▲ Engineering ▲ Surveying ▲ Telecom

MASSON & ASSOCIATES, INC.

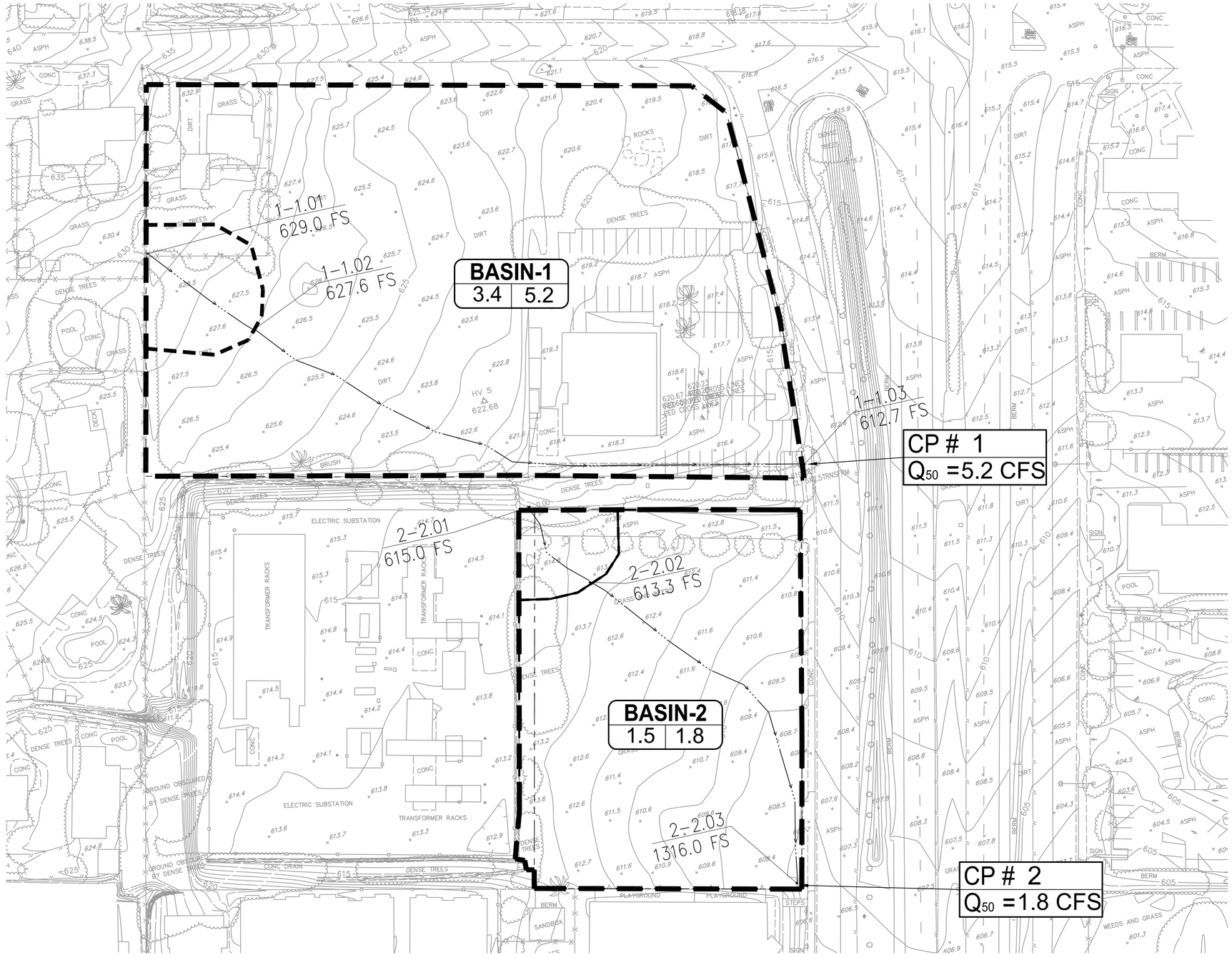
200 East Washington Ave., Suite 200
Escondido, CA 92025
P. 760.741.3570
F. 760.741.1786

25185 Madison Avenue
Suite A
Murrieta, CA 92562

www.masson-assoc.com

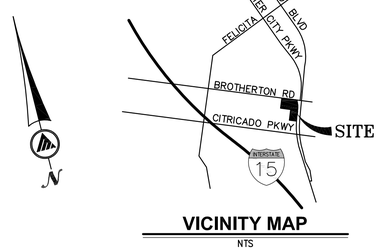
DATE: Jul 21, 15 3:45pm by:mfatin FILE:I:\11\11015\PROD\Reports\Hydrology\11015-Pre-Development-Offsite.dwg

EXHIBIT A-1



LEGEND

SYMBOL	DESCRIPTION
BASIN-1 / AC | CFS	BASIN DESIGNATION
	BASIN AREA (AC), DISCHARGE (CFS)
CP # 1 / Q_{50} = 5.2 cfs	CONCENTRATION POINT NUMBER
	50-YEAR DISCHARGE
	BASIN BOUNDARY
	SUB-BASIN BOUNDARY
	FLOW PATH
	PROPERTY LINE



VICINITY MAP
NTS

DEL PRADO'S SITE

CITY OF ESCONDIDO, CALIFORNIA

EXHIBIT 'A-1'

PRE-DEVELOPMENT HYDROLOGY MAP
DEL PRADO, CITY OF ESCONDIDO CA

N

0 20 40 80

SCALE IN FEET
GRAPHIC SCALE
1"=40'

Planning ▲ Engineering ▲ Surveying ▲ Telecom

MASSON & ASSOCIATES, INC.

200 East Washington Ave., Suite 200
Escondido, CA 92025
P. 760.741.3570
F. 760.741.1786

25185 Madison Avenue
Suite A
Murrieta, CA 92562

www.masson-assoc.com

DATE: Jul 13, 15 1:33pm by:mfatini FILE:I:\11\11015\PR00\Reports\Hydrology\11015-Pre-Development-Hydrology.dwg

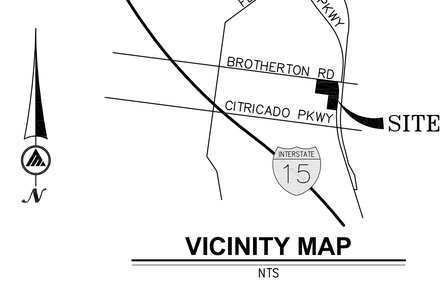
EXHIBIT B

LEGEND

SYMBOL	DESCRIPTION
BASIN 1 / AC | Q	BASIN DESIGNATION
	BASIN AREA (AC) & RUNOFF (CFS)
CP # / Q_{50} =	CONCENTRATION POINT NUMBER
	50-YEAR DISCHARGE
	BASIN BOUNDARY
	SUB-BASIN BOUNDARY
	FLOW PATH
	PROPERTY LINE
	SELF-TREATED AREA DRAINS INTO EXISTING STORM DRAIN

DEL PRADO SITE

CITY OF ESCONDIDO, CALIFORNIA



VICINITY MAP

NTS

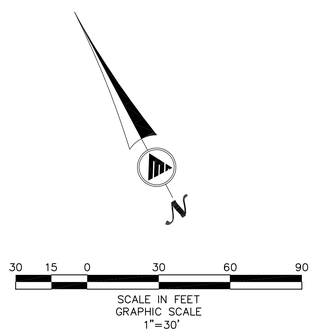


EXHIBIT 'B' - NORTH

POST-DEVELOPMENT HYDROLOGY MAP
DEL PRADO, CITY OF ESCONDIDO CA

DATE: Jul 24, 15 10:11am by:mfatini
FILE:I:\11\11015\PROD\Reports\Hydrology\11015-POST-Development-Hydrology-MF-North.dwg

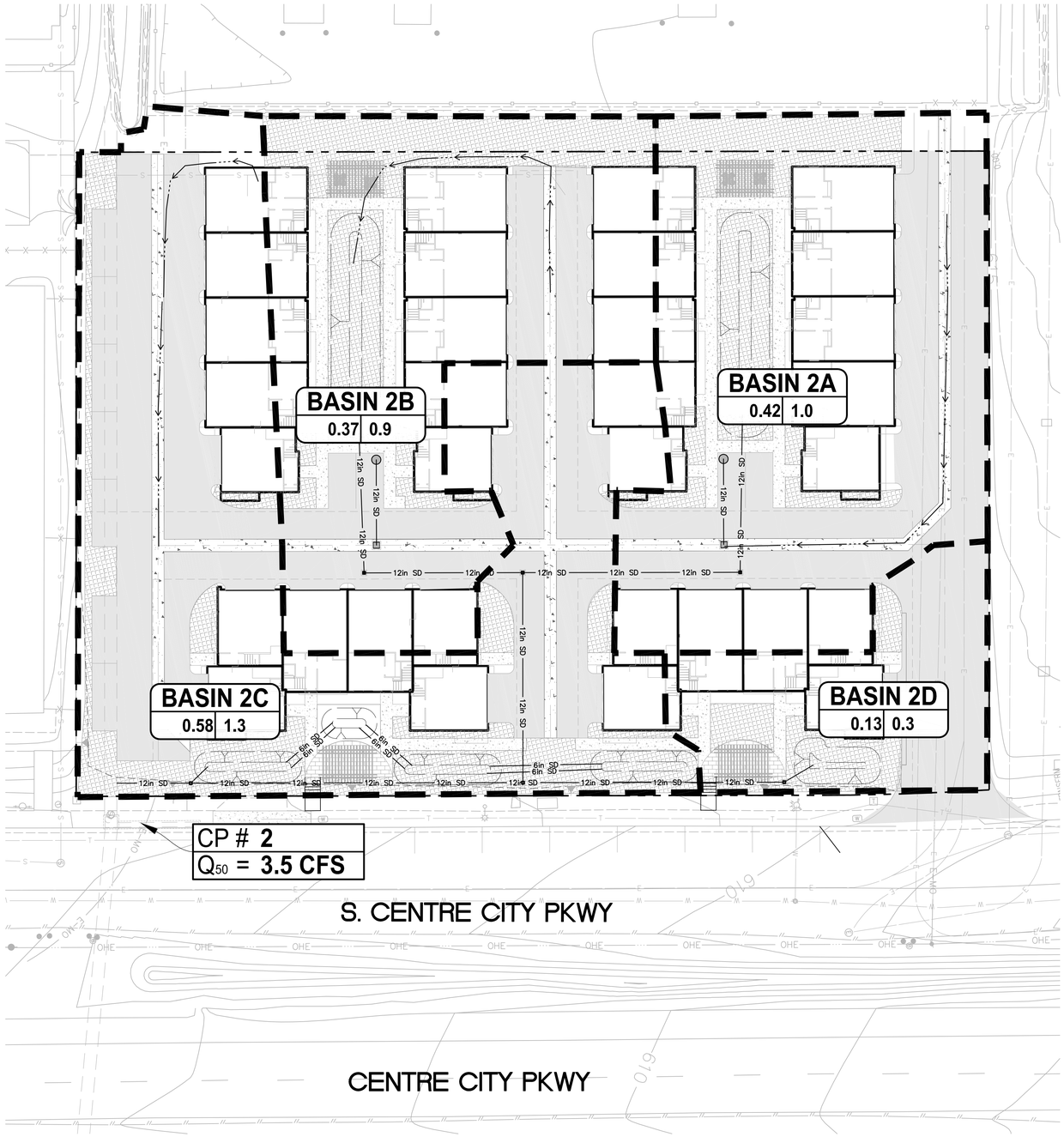
Planning ▲ Engineering ▲ Surveying ▲ Telecom

MASSON & ASSOCIATES, INC.

200 East Washington Ave., Suite 200
Escondido, CA 92025
P. 760.741.3570
F. 760.741.1786

25185 Madison Avenue
Suite A
Murrieta, CA 92562

www.masson-assoc.com

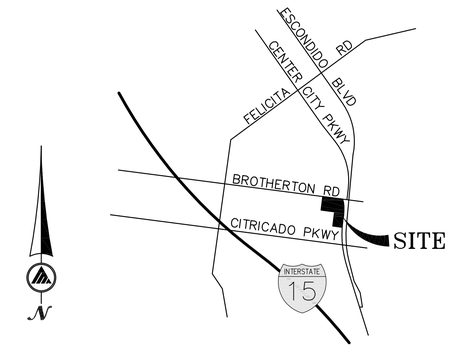


LEGEND

SYMBOL	DESCRIPTION
BASIN / CA | CFS	BASIN DESIGNATION
	BASIN AREA (AC) & RUNOFF (CFS)
CP # 2 / Q_{50} = 3.4 CFS	CONCENTRATION POINT NUMBER
	50-YEAR DISCHARGE
	BASIN BOUNDARY
	FLOW PATH
	PROPERTY LINE

DEL PRADO SITE

CITY OF ESCONDIDO, CALIFORNIA



VICINITY MAP

NTS

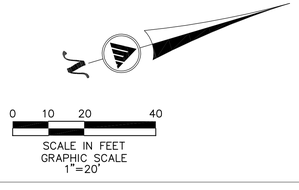


EXHIBIT 'B' - SOUTH

POST-DEVELOPMENT HYDROLOGY MAP
DEL PRADO, CITY OF ESCONDIDO CA

DATE: Jul 24, 15 10:07am by:mfatini
FILE:I:\11\11015\PROD\Reports\Hydrology\11015-POST-Development-Hydrology-MF-South.dwg

Planning ▲ Engineering ▲ Surveying ▲ Telecom

MASSON & ASSOCIATES, INC.

200 East Washington Ave., Suite 200
Escondido, CA 92025
P. 760.741.3570
F. 760.741.1786

25185 Madison Avenue
Suite A
Murrieta, CA 92562

www.masson-assoc.com

Appendix F

ACOUSTICAL ANALYSIS REPORT

HELIX Environmental Planning

Del Prado Project

Acoustical Analysis Report

February 2016

Charles Terry
Senior Acoustic Specialist

Prepared for:
Touchstone Communities
9909 Mira Mesa Boulevard, Suite #150
San Diego, CA 92131

Prepared by:
HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

DEL PRADO PROJECT

ACOUSTICAL ANALYSIS REPORT

Prepared for:
Touchstone Communities
9909 Mira Mesa Boulevard, Suite #150
San Diego, CA 92131

Prepared by:
HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

February 2016

TABLE OF CONTENTS

Section	Title	Page
ES	EXECUTIVE SUMMARY	1
1.0	INTRODUCTION	1
	1.1 Project Location	1
	1.2 Project Description	1
2.0	ENVIRONMENTAL SETTING	1
	2.1 Noise and Sound Level Descriptors and Terminology	1
	2.2 Noise and Vibration Sensitive Land Uses	2
	2.3 Regulatory Framework	3
	2.4 Existing Conditions	9
	2.4.1 Surrounding Land Uses	9
	2.4.2 Existing Noise Conditions	9
3.0	METHODOLOGY AND SIGNIFICANCE CRITERIA	10
	3.1 Methodology and Equipment	10
	3.2 Assumptions	11
	3.2.1 Construction	11
	3.2.2 Operation	11
4.0	IMPACTS	13
	4.1 Guidelines for the Determination of Significance	13
	4.2 Issue 1: Noise Level standard compliance for new uses	14
	4.2.1 Transportation Noise	14
	4.2.2 Mitigation Measures	15
	4.2.3 Significance of Impacts After Mitigation	16
	4.3 Issue 2: Excessive Ground-Borne Vibration	16
	4.3.1 Impact Analysis	16
	4.3.2 Mitigation Measures	17
	4.3.3 Significance of Impacts After Mitigation	17
	4.4 Issue 3: Permanent Increase in Ambient Noise Levels	17
	4.4.1 Heating, Ventilation, and Air Conditioning Systems	17
	4.4.2 Landscape Equipment and Nuisance Noise	17
	4.4.3 Off-site Transportation Noise	18
	4.4.4 Mitigation Measures	19
	4.4.5 Significance of Impacts After Mitigation	19
	4.5 Issue 4: Temporary Increase in Ambient Noise Levels	19
	4.5.1 Construction Noise	19
	4.5.2 Mitigation Measures	21
	4.5.3 Significance of Impacts After Mitigation	21

TABLE OF CONTENTS (cont.)

Section	Title	Page
4.0	IMPACTS (cont.)	
	4.6 Issue 5: Airport Noise Levels	21
	4.6.1 Public and Private Airports	21
	4.6.2 Mitigation Measures	21
	4.6.3 Significance of Impacts After Mitigation	21
5.0	LIST OF PREPARERS	22
6.0	REFERENCES	23

LIST OF APPENDICES

A Carrier 38HDR060 Split System Condenser
B Existing and Near Term Future Traffic Noise Levels
C Construction Noise Modeling Outputs

TABLE OF CONTENTS (cont.)

LIST OF FIGURES

No.	Title	Follows Page
1	Regional Location	2
2	Project Vicinity	2
3a	Site Plan – North	2
3b	Site Plan – South	2
4	Receiver Locations	10

LIST OF TABLES

No.	Title	Page
1	City of Escondido Exterior Land Use/Noise Compatibility Guidelines	4
2	City of Escondido Incremental Noise Impact Standards	5
3	City of Escondido Ground-borne Vibration Impact Criteria	5
4	City of Escondido Noise Ordinance – Exterior Noise Limits	6
5	Noise Measurements Results.	9
6	Traffic Counts Along Centre City Parkway	10
7	Carrier 38HDR060 Condenser Noise	11
8	Existing and Near Term Future Traffic Volumes	12
9	Future Exterior Use Area Noise Levels	14
10	Future Building Façade Noise Levels	15
11	Off-site Traffic Noise Levels (Existing + Project)	18
12	Off-site Traffic Noise Levels (Near Term Future + Project)	19
13	Construction Equipment Noise Levels	20

LIST OF ACRONYMS

ADT	average daily trip
ANSI	American National Standards Institute
CAD	Computer Aided (engineering and architectural) Design
CadnaA	Computer Aided Noise Abatement
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
City	City of Escondido
CG	General Commercial (CG)
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	A-weighted decibels
Daytime	The period from 7:00 a.m. to 10:00 p.m.
EIR	Environmental Impact Report
Evening	The period from 7:00 p.m. to 10:00 p.m.
FTA	Federal Transit Administration
Hz	Hertz
HVAC	heating, ventilation and air conditioning
in./sec	inch per second
I-15	Interstate 15
kHz	kilohertz
L_{DN}	Day-Night Sound Level
L_{EQ}	one-hour average sound level
MCAS Miramar	Marine Corps Air Station Miramar
mPa	micro-Pascals

LIST OF ACRONYMS (cont.)

mph	miles per hour
NSLUs	noise-sensitive land uses
PD-MU	Planned Development-Mixed Use
ppv	peak particle velocity
Project	Del Prado Project
RCNM	Roadway Construction Noise Model
SDG&E	San Diego Gas & Electric
SPL	sound pressure level
STC	sound transmission control
SWL	sound power level
TIS	Traffic Impact Study
TNM	Traffic Noise Model
USDOT	U.S. Department of Transportation
VdB	Vibration decibels

THIS PAGE INTENTIONALLY LEFT BLANK

EXECUTIVE SUMMARY

This report presents an assessment of potential construction and operational noise impacts associated with the proposed Del Prado Project (project).

The project consists of 4.87 acres and is located in the City of Escondido (City) in San Diego County. The proposed project consists of the construction of 113 residential units in a 3-story row townhome design across two complexes: Del Prado North and Del Prado South.

Exterior noise levels from traffic noise would be less than significant. However, the building façade of the proposed residential units that face Brotherton Road or S. Centre City Parkway may be exposed to noise in excess of 60 CNEL, and as traditional materials would be expected to attenuate noise by 15 CNEL, interior noise levels may exceed 45 CNEL. In accordance with Title 24 standards, additional exterior-to-interior noise analysis would need to be conducted where exterior noise levels are expected to exceed 60 CNEL.

Vibration impacts from use of a vibratory roller would be potentially significant to nearby vibration-sensitive land uses (single- and multi-family residences and a preschool). As mitigation, operation of a vibratory roller or equivalent shall be avoided within 75 feet of any off-site residence or 60 feet of the preschool.

Residential and commercial heating, ventilation, and air conditioning (HVAC) noise from the condensers would not exceed allowable City limits for operational sources.

Compliance with the City's noise ordinance would limit exposure to landscaping equipment and nuisance noise to below a level of significance.

Traffic noise generated by the project would not cause significant impacts to off-site noise-sensitive land uses.

Construction of the project, including demolition and mass grading, would not cause significant noise impacts to surrounding noise-sensitive land uses.

The project would not be located within the 60 CNEL noise contours for any airport, and impacts from airport noise would be less than significant.

THIS PAGE INTENTIONALLY LEFT BLANK

1.0 INTRODUCTION

1.1 PROJECT LOCATION

The Del Prado Project (project) is located in the City of Escondido (City) in San Diego County (see Figure 1, *Regional Location*, and Figure 2, *Project Vicinity*). The project is located on a 4.87-acre site to the west of S. Centre City Parkway and to the south of Brotherton Road. The project is located approximately 0.4 mile east of Interstate 15 (I-15). Access to the project site would be provided from one private driveway off Brotherton Road and one private driveway off S. Centre City Parkway.

1.2 PROJECT DESCRIPTION

The proposed project consists of the construction of 113 residential units in a 3-story row townhome design (see Figures 3a, *Site Plan – North*, and 3b, *Site Plan – South*). The proposed project is divided into two portions, Del Prado North and Del Prado South. The lots are physically separated by a San Diego Gas & Electric (SDG&E) driveway used to access the Felicita substation. Del Prado North has an area of 3.44 acres and would consist of 81 multi-family units at a density of 24 units per acre. Del Prado South is 1.43 acres and includes 32 multi-family units at a density of 23 units per acre.

The project also includes private streets for vehicular access, parking, recreational areas, landscaped areas, storm drains, bioretention areas, and monument sculpture/signage. The project's exterior use areas include a pool and barbeque area in the central area within Del Prado North.

2.0 ENVIRONMENTAL SETTING

2.1 NOISE AND SOUND LEVEL DESCRIPTORS AND TERMINOLOGY

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, with a specified duration. The Community Noise Equivalent Level (CNEL) is a 24-hour average, where noise levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dB weighting, and sound levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dB weighting. This is similar to the Day-Night sound level (L_{DN}), which is a 24-hour average with an added 10 dB weighting on the same nighttime hours but no added weighting on the evening hours. Sound levels expressed in CNEL are always based on dBA. These metrics are used to express noise levels for both measurement and municipal regulations, as well as for land use guidelines and enforcement of noise ordinances.

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver contribute to the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. A logarithmic scale is used to describe sound pressure level (SPL) in terms of dB units. The threshold of hearing for the human ear is about 0 dB, which corresponds to 20 micro-Pascals (mPa).

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions.

2.2 NOISE AND VIBRATION SENSITIVE LAND USES

Noise-sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise, such as residential dwellings, transient lodging, hospitals, educational facilities, libraries, and sensitive habitat. Industrial and commercial land uses are generally not considered sensitive to noise. NSLUs in the project area include single- and multi-residences and a preschool (Escondido KinderCare).

Land uses in which ground-borne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations (Federal Transit Administration [FTA] 2006) are considered “vibration-sensitive.” The degree of sensitivity depends on the specific equipment that would be affected by the ground-borne vibration. In addition, excessive levels of ground-borne vibration of either a regular or an intermittent nature can result in annoyance to residential uses. Vibration-sensitive land uses in the project area include single and multi-family residences.

I:\PROJECTS\TI\TCH\TCH04_Woodys\Map\Noise\Fig1_Regional.mxd TCH-04 08/13/15 -EV

Regional Location

DEL PRADO PROJECT

HELIX Environmental Planning

N 0 8 Miles

Figure 1

I:\PROJECTS\TI\TCH\TCH-04_Woodys\Map\Noise\Fig2_Vicinity.mxd TCH-04 08/17/15 -EV

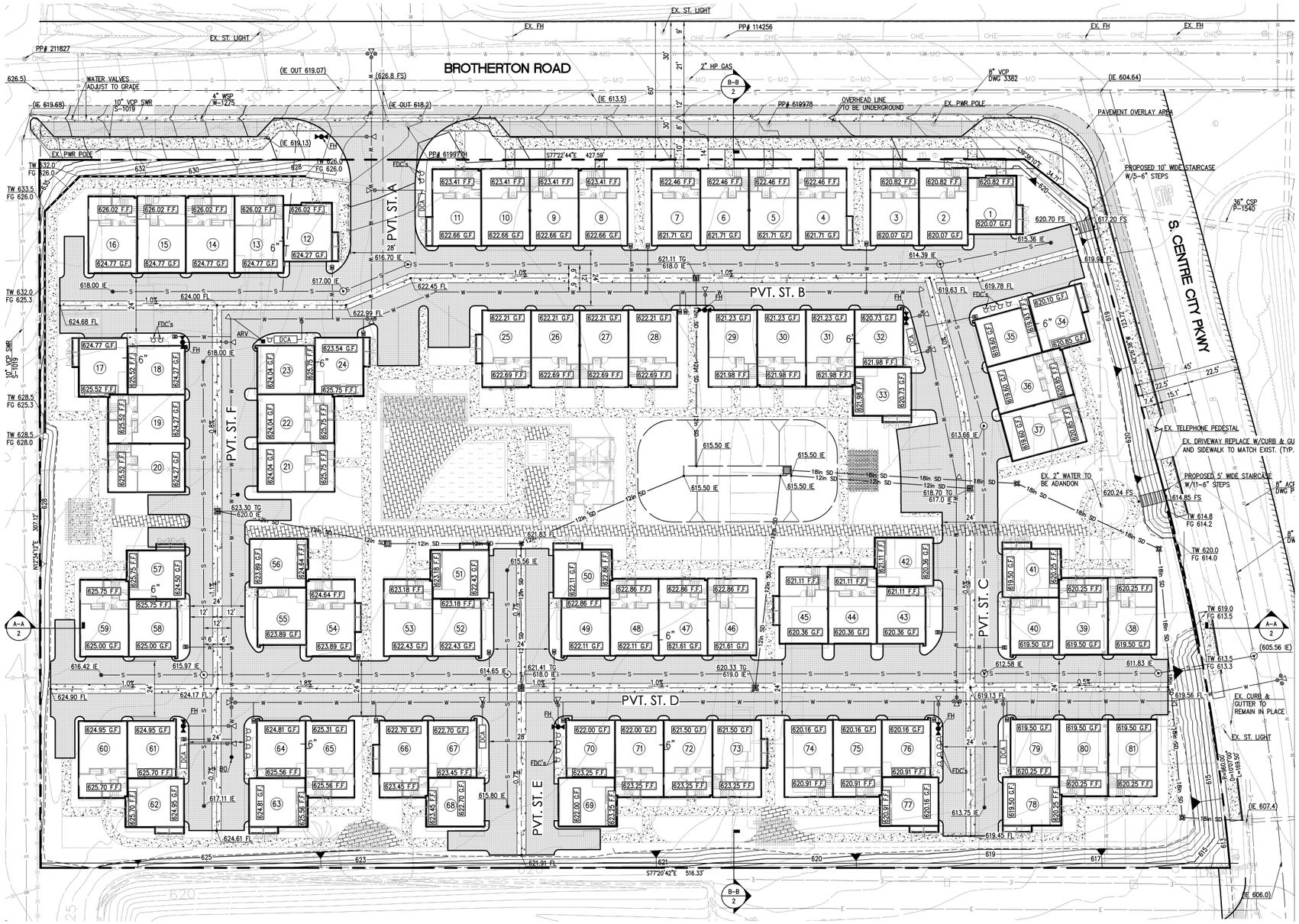
Project Vicinity

DEL PRADO PROJECT

HELIX Environmental Planning

N 0 300 Feet

Figure 2



Source: Masson & Associates, Inc., 2015

L:\PROJECTS\TTCH\TTCH-04_WoodysMapNoise\Fig3a_SitePlanNorth.indd PLC-98 08/13/15 JEV

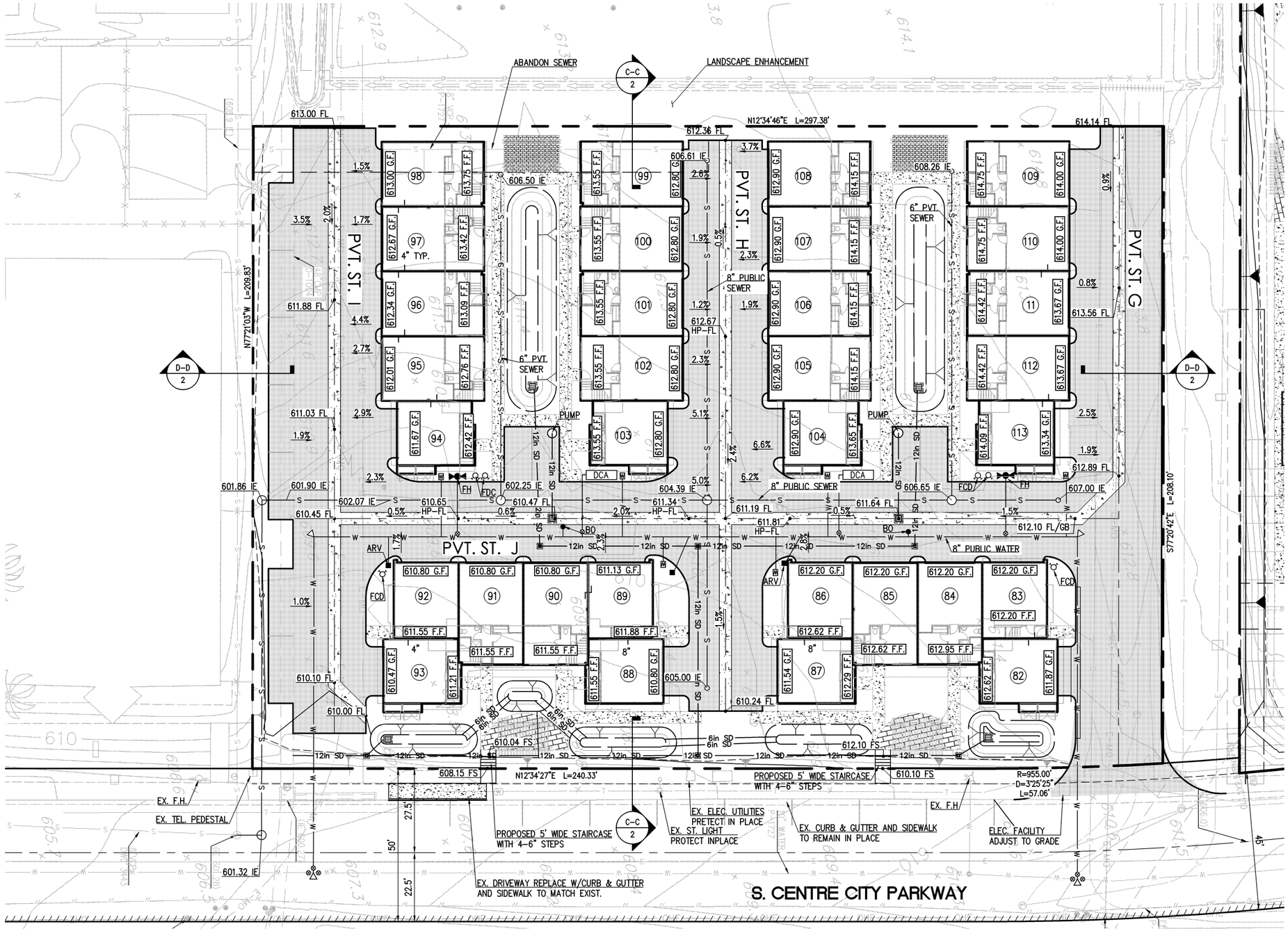
HELIX Environmental Planning

0 60 Feet

Site Plan - North

DEL PRADO PROJECT

Figure 3a



Source: Masson & Associates, Inc., 2015

I:\PROJECTS\TTCH\TCH-04 Woodys\Map\Noise\Fig3b SitePlanSouth.indd PLC-08 08/13/15 -EV

HELIX Environmental Planning

0 50 Feet

Site Plan - South

DEL PRADO PROJECT

Figure 3b

2.3 REGULATORY FRAMEWORK

California Noise Insulation Standards (California Code of Regulations, Title 24)

Title 24 establishes an Interior Noise Standard of 45 dBA CNEL for multiple-unit and hotel/motel structures. Acoustical studies must be prepared for proposed multiple-unit residential and hotel/motel structures within the CNEL noise contours of 60 dBA or greater. The studies must demonstrate that the design of the building will reduce interior noise in habitable rooms to 45 dBA CNEL or lower.

City of Escondido Community Protection Element

The goal of the Community Protection Element of the City General Plan (City 2012a) is to minimize the impact of noise on the community by identifying existing and potential noise sources and providing the policies and standards needed to keep noise from reducing the quality of life in the City. The Community Protection Element establishes guidelines to evaluate the compatibility of land uses and noise exposure levels. Table 1, *City of Escondido Exterior Land Use/Noise Compatibility Guidelines,* summarizes the City's exterior land use/noise compatibility guidelines. A land use located in an area identified as "normally acceptable" indicates that standard construction methods would attenuate exterior noise to an acceptable indoor noise level and that people can conduct outdoor activities with minimal noise interference. For land uses where the exterior noise level falls within the "conditionally unacceptable" range, new construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made with noise insulation features included in the design. For land uses where the exterior noise levels fall within the "clearly unacceptable" range, new construction generally should not be undertaken.

Table 1
CITY OF ESCONDIDO EXTERIOR LAND USE/
NOISE COMPATIBILITY GUIDELINES

Land Use Category	Annual CNEL (dBA)						
	55	60	65	70	75	80	
Residential Single-family, Duplex, Mobile Home							
Residential Multi-family, Residential Mixed Use							
Transient Lodging, Motels, and Hotels							
Schools, Libraries, Churches, Hospitals, and Nursing Homes							
Auditoriums, Concert Halls, Amphitheatres							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Offices Buildings, Business, Commercial, and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

Normally Acceptable – Specified land use is satisfactory, based upon the assumption that 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 systems or air conditioning will usually suffice.

Normally Unacceptable – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with noise insulation features included in the design.

Clearly Unacceptable - New construction or development clearly should not be undertaken.

Source: City 2012a

The Community Protection Element also includes exterior incremental environmental noise impact standards for NSLUs, shown in Table 2, *City of Escondido Incremental Noise Impact Standards*. The allowable increase in noise levels decreases as ambient noise levels increases. In addition, the standards include separate allowable noise increases for uses that are more noise-sensitive during the day (peak hour) versus at night where people normally sleep (24-hour).

Table 2
CITY OF ESCONDIDO INCREMENTAL NOISE IMPACT STANDARDS

Residences and Building Where People Normally Sleep		Institutional Land Uses with Primarily Daytime and Evening Uses	
Existing L_{DN}	Allowable Noise Increment	Existing Peak Hour L_{EQ}*	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

Source: City 2012a
* L_{EQ} stands for one-hour average sound level.

Noise Policy 5.5 of the Community Protection Element requires that construction projects and new development ensure acceptable vibration levels at nearby NSLUs based on FTA criteria. These criteria is outlined in the Escondido General Plan Update, Downtown Specific Plan Update and Climate Action Plan Environmental Impact Report (General Plan EIR; City 2012b) and shown in Table 3, *City of Escondido Ground-borne Vibration Impact Criteria*, below. The General Plan EIR states that the category of infrequent events is applicable to construction activities.

Table 3
CITY OF ESCONDIDO GROUND-BORNE VIBRATION IMPACT CRITERIA

Land Use Category	Impact Levels (VdB)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations	65[4]	65[4]	65[4]
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Source: City 2012b
VdB = vibration decibels
1 "Frequent Events" is defined as more than 70 vibration events of the same source per day.
2 "Occasional Events" is defined as between 30 to 70 vibration events of the same source per day.
3 "Infrequent Events" is defined as fewer than 70 vibration events of the same source per day.
4 This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels.

City of Escondido Municipal Code (Noise Ordinance)

City of Escondido Municipal Code Chapter 17, Article 12, Noise Abatement and Control, establishes prohibitions for the purpose of securing and promoting the public health, comfort, safety, peace, and quiet for its citizens (City 2015). Table 4, *City of Escondido Noise Ordinance – Exterior Noise Limits*, shows the allowable noise levels at any point on or beyond the boundaries of the property on which the sound is produced, and corresponding times of day for each zoning designation. The noise standards apply to each property or portion of property substantially used for a particular type of land use. Where two or more dissimilar land uses occur on a single property, the more restrictive noise limits apply. Noise is measured by the one-hour average sound level known as L_{EQ}. Noise restrictions are listed in Sections 17-230 through 17-241 of the Noise Ordinance, such as specific regulations pertaining to motor vehicles. Additional sections of the Noise Ordinance applicable to this analysis are listed below.

Table 4
CITY OF ESCONDIDO NOISE ORDINANCE – EXTERIOR NOISE LIMITS

Zone	Time	Noise Level (dBA)
Residential zones	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
Multi-residential zones	7:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial zones	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	55
Light industrial	Anytime	70
General industrial zones	Anytime	75

Source: City of Escondido Municipal Code Section 17-229, Sound Level Limits

Section 17-229(c)(5) (Corrections to Exterior Noise Level Limits)

Section 17-229 (c)(5) of the Noise Ordinance, Corrections to Exterior Noise Level Limits, includes the following regulations:

a) If the noise is continuous, the L_{EQ} for any hour will be represented by any lesser time period within that hour. Noise measurements of a few minutes only will thus suffice to define the noise level.

b) If the noise is intermittent, the L_{EQ} for any hour may be represented by a time period typical of the operating cycle. Measurement should be made of a representative number of noisy/quiet periods. A measurement period of not less than 15 minutes is, however, strongly recommended when dealing with intermittent noise.

c) In the event the alleged offensive noise, as judged by the enforcement officer, contains a steady, audible sound such as a whine, screech or hum, or contains a repetitive impulsive noise such as hammering or riveting, the standard limits set forth in Table 4, shall be reduced by 10 dB or to the ambient noise level when such noises are not occurring.

d) If the measured ambient level exceeds that permissible in Table 4, the allowable noise exposure standard shall be the ambient noise level. The ambient level shall be measured when the alleged noise violations source is not operating.

e) The sound level limit at a location on a boundary between two land use classifications is the limit applicable to the receiving land use; provided, however, that the one-hour average sound level limit applicable to extractive industries including, but not limited to, borrow pits and mines, shall be 75 dB at the property line regardless of the zone where the extractive industry is actually located.

   Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of this section, measured at or beyond six feet from the boundary of the easement upon which the equipment is located.

Section 17-234 (Construction Equipment)

Except for emergency work, the following applies to all construction equipment operating in the City:

a) It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site, except on Monday through Friday during a week between the hours of 7:00 a.m. and 6:00 p.m. and on Saturdays between the hours of 9:00 a.m. and 5:00 p.m., and provided that the operation of such construction equipment complies with the requirements of subsection (c) of this section.

b) It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site on Sundays and on days designated by the President, Governor or City Council as public holidays.

c) No construction equipment or combination of equipment, regardless of age or date of acquisition, shall be operated so as to cause noise in excess of a one-hour average sound level limit of 75 dB at any time, unless a variance has been obtained in advance from the City Manager.

Section 17-237 (Landscape Equipment)

It shall be unlawful for any person, including the City of Escondido, to use any motorized landscape equipment, including but not limited to power blowers and vacuums, which causes a disturbing, excessive or offensive noise as defined under Section 17-227(k) of the Noise Ordinance. Disturbing, excessive or offensive noise refers to any sound or noise exceeding the noise standards established in the Noise Ordinance (Table 4.12-5, City of Escondido Exterior Sound Limit Levels).

Section 17-238 (Grading)

a) It shall be unlawful for any person, including the City of Escondido, to do any authorized grading at any construction site, except on Mondays through Fridays during a week between the hours of 7:00 a.m. and 6:00 p.m. and, provided a variance has been obtained in advance from the City Manager, on Saturdays from 10:00 a.m. to 5:00 p.m.

b) For the purpose of this section, "grading" shall include, but not be limited to, compacting, drilling, rock crushing or splitting, bulldozing, clearing, dredging, digging, filling and blasting.

c) In addition, any equipment used for grading shall not be operated so as to cause noise in excess of a one-hour sound level limit of 75 dB at any time when measured at or within the property lines of any property which is developed and used in whole or in part for residential purposes, unless a variance has been obtained in advance from the City Manager.

Section 17-240

Section 17-240 includes additional general noise regulations. This section states that it is unlawful for any person to make, continue or cause to be made or continued, any disturbing, excessive or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity. Noises declared to be disturbing, excessive and offensive include stereo equipment, animal noise, and loading and unloading of vehicles that disturbs neighboring receptors.

City of Escondido Municipal Code Chapter 33, Article 47, Environmental Quality Regulations

The Environmental Quality Regulations (EQRs) implement the California Environmental Quality Act (CEQA) and the CEQA Guidelines (guidelines) by applying the provisions and procedures contained in CEQA to development projects proposed within the City of Escondido. Section 33-924(a)(8)(A) and (B) pertain to noise impacts, specifically noise impacts related to the widening of Circulation Element street widening. In situations where a negative declaration is otherwise appropriate, the following incremental noise increases are generally not considered significant:

a. Short or long-term increases, regardless of the extent, that do not result in noise increases in excess of General Plan standards.

b. Short or long-term increases that result in a 3 dBA or less incremental increase in noise beyond the General Plan's noise standards.

2.4 EXISTING CONDITIONS

2.4.1 Surrounding Land Uses

The area surrounding the project site consists primarily of residential land uses, including both single- and multi-family residences. A multi-family residential complex is located to the southwest of the project site; in between the site and this residential complex is an SDG&E transformer station. To the west and north (across Brotherton Road) are single-family homes. The Escondido KinderCare Learning Center (a preschool) is located to the south of the project site. Commercial land uses are east of the project site across Centre City Parkway.

2.4.2 Existing Noise Conditions

2.4.2.1 *General Site Survey*

One 15-minute traffic noise measurement was conducted during a site visit on October 29, 2014. The measurement was performed adjacent to S. Centre City Parkway along the eastern extent of the proposed project site (see Figure 4, *Receiver Locations*, for measurement locations). During the noise measurement, start and end times were recorded and vehicle counts were made for cars, medium trucks (double-tires/two axles), and heavy trucks (three or more axles) for the corresponding road segments. The measurement time was sufficiently long for a representative traffic volume to occur and the noise level (LEQ) to stabilize. The vehicle counts were then converted to one-hour equivalent volumes by applying an appropriate factor.

The measured noise level and related weather conditions are shown in Table 5, *Noise Measurements Results*. Traffic counts for the timed measurement and the one-hour equivalent volumes are shown in Table 6, *Traffic Counts Along Centre City Parkway*.

Table 5
NOISE MEASUREMENT RESULTS

Measurement 1	
Date	October 29, 2014
Conditions	70-72 degrees Fahrenheit, no measurable wind, moderate humidity
Time	2:45 p.m. to 3:00 p.m.
Location	144 feet due west of the centerline of Centre City Parkway, 288 feet south of Brotherton Road
Measured Noise Level	63.4 dBA L_{EQ}

Table 6 TRAFFIC COUNTS ALONG CENTRE CITY PARKWAY				
Roadway	**Traffic**	**Autos**	**MT[1]**	**HT[2]**
Centre City Parkway	15-minute count	445	8	3
	One-hour Equivalent	1,780	32	12
	Percent	**97%**	**2%**	**1%**

[1] Medium Trucks (double tires/two axles)
[2] Heavy Trucks (three or more axles)

3.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

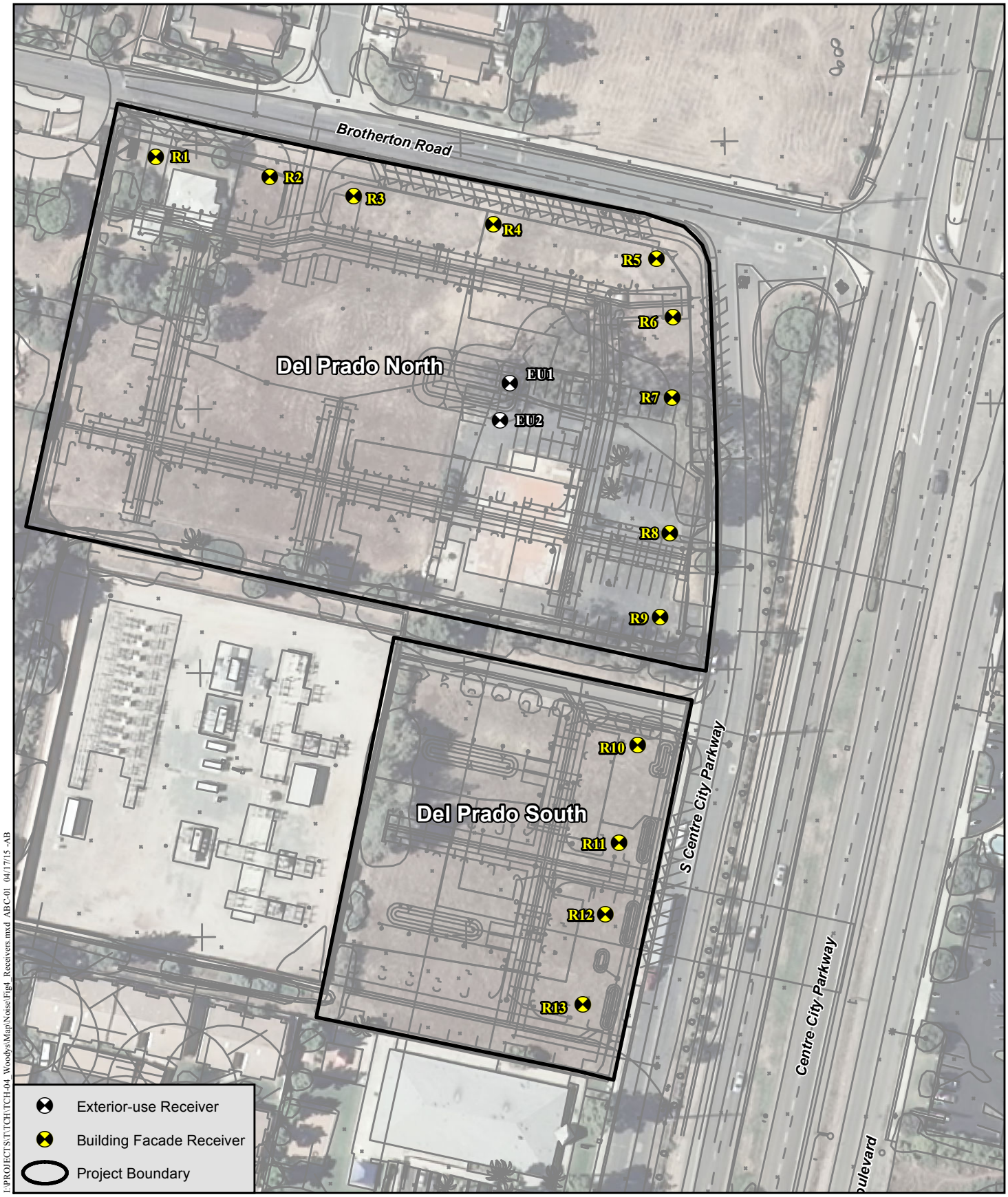
3.1 METHODOLOGY AND EQUIPMENT

The following equipment was used to measure existing noise levels at the project site:

- Larson Davis System LxT Integrating Sound Level Meters
- Larson Davis Model CA250 Calibrator
- Windscreen and tripod for the sound level meter
- Digital camera

The sound level meter was field-calibrated immediately prior to the noise measurements to ensure accuracy. All measurements were made with a meter that conforms to the American National Standards Institute (ANSI) specifications for sound level meters (ANSI SI.4-1983 R2001). All instruments were maintained with National Bureau of Standards traceable calibration per the manufacturers' standards.

Modeling of the exterior noise environment for this report was accomplished using two computer noise models: Computer Aided Noise Abatement (CadnaA) version 4.5 and Traffic Noise Model (TNM) version 2.5. CadnaA is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions. CadnaA assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project-related information, such as noise source data, barriers, structures, and topography to create a detailed CadnaA model, and uses the most up-to-date calculation standards to predict outdoor noise impacts. CadnaA traffic noise prediction is based on the data and methodology used in the TNM. TNM was released in February 2004 by the U.S. Department of Transportation (USDOT), and calculates the daytime average hourly LEQ from three-dimensional model inputs and traffic data (California Department of Transportation [Caltrans] 2004). TNM was developed from Computer Aided Design (CAD) plans provided by the project applicant. Input variables included road alignment, elevation, lane configuration, area topography, existing and planned noise control features, projected traffic volumes, estimated truck composition percentages, and vehicle speeds.



I:\PROJECTS\TLTCH\TCH-04 Woodys\Map\Noise\Fig4 Receivers.mxd ABC-01 04/17/15 -AB

Receiver Locations

DEL PRADO PROJECT

HELIX Environmental Planning

N 0 100 Feet

Figure 4

The one-hour L_{EQ} noise level is calculated utilizing peak-hour traffic; peak-hour traffic volumes can be estimated based on the assumption that 10 percent of the average daily traffic would occur during a peak hour. The model-calculated one-hour L_{EQ} noise output is the equivalent to the CNEL (Caltrans Technical Noise Supplement, November 2009).

Project construction noise was analyzed using the Roadway Construction Noise Model (RCNM; USDOT 2008), which utilizes estimates of sound levels from standard construction equipment.

3.2 ASSUMPTIONS

3.2.1 Construction

Construction would require heavy equipment during demolition, mass grading, utility installations, building construction and paving. Construction equipment used on site would include but not be limited to: dozers, loaders, scrappers, trenchers, compacters, forklifts, cranes, trucks, flatbeds, generators, air compressors, sprayers, nail guns, painting equipment, stucco equipment, saws, cutters, staplers, and grinders. Project construction is anticipated to occur over two years.

The most likely source of vibration during the project construction would be a vibratory roller, which may be used to achieve soil compaction as part of the foundation construction or for the project private roads.

3.2.2 Operation

The known or anticipated project site operational noise sources include residential heating, ventilation, and air conditioning (HVAC) systems and vehicular traffic.

3.2.2.1 *Residential Air Conditioners*

Specific planning data for the future HVAC systems is not available at this stage of project design; however, analysis using a typical to larger-sized residential condenser mounted on ground level pads provides a reasonable basis for analysis. The unit used in this analysis is a Carrier 38HDR060 split system condenser (see Appendix A, *Carrier 38HDR060 Split System Condenser*). The manufacturer's noise data is provided below in Table 7, *Carrier 38HDR060 Condenser Noise*. It was assumed that the project includes the installation of ground-mounted HVAC condenser units.

Table 7
CARRIER 38HDR060 CONDENSER NOISE

Noise Levels in Decibels[1] (dB) Measured at Octave Frequencies							Overall Noise Level in A-weighted Scale (dBA)[1]
125 Hz	250 Hz	500 Hz	1 KHz	2 KHz	4 KHz	8 KHz	
63.0	61.5	64.0	66.5	66.0	64.5	55.5	72.0

[1] Sound Power Levels (S_{WL})

3.2.2.2 *Vehicular Traffic*

The Traffic Impact Study (TIS) for the project (KOA Corporation 2015) provides the existing and near term future traffic volumes for the street segments surrounding the proposed project site under four scenarios. Anticipated future traffic noise levels are based on these forecasted traffic volumes. Table 8, *Existing and Near Term Future Traffic Volumes*, shows the existing and near term future (Existing + Project, Near Term, and Near Term + Project) daily traffic volumes for the street segments in the vicinity of the project site.

Table 8
EXISTING AND NEAR TERM FUTURE TRAFFIC VOLUMES

Roadway Segment	ADT			
	Existing	Existing + Project	Near Term Future	Near Term Future + Project
S. Centre City Parkway				
Brotherton Road to Citracado Parkway	209	639	639	1,069
Centre City Parkway				
North of Brotherton Road	23,463	23,735	24,253	24,525
Brotherton Road to Citracado Parkway	24,280	24,708	25,310	25,738
South of Citracado Parkway	24,378	24,784	25,223	25,629
Brotherton Road				
Charise Street to S. Centre City Parkway	764	1,382	2,224	2,842
S. Centre City Parkway to Centre City Parkway	838	1,266	1,868	2,296
Citracado Parkway/Gamble Lane				
S. Centre City Parkway to Centre City Parkway	4,758	5,008	5,448	5,698

Source: KOA Corporation 2015

Although the speed limit on Centre City Parkway is 65 miles per hour (mph), it was assumed to be 40 mph for modeling purposes, as the speed limit is unposted (to discourage higher speeds) so that traffic will adjust to travel at 40 mph (NBC San Diego 2010). For a conservative analysis, Centre City Parkway was also modeled at 50 mph for the on-site noise impacts. Speeds on the collector streets (Brotherton Road and S. Centre City Parkway) are assumed to be a typical residential speed limit of 25 mph. The posted speed limit on Citracado Parkway/Gamble Lane is 30 mph. Based upon site visit observations, the percentage breakdown of vehicles was assumed to be 97 percent autos, 2 percent medium trucks, and 1 percent heavy trucks. These percentages

were used for vehicle composition for modeling the existing and future conditions in the vicinity of the project.

TNM software was used to calculate the distances to noise contour lines for all four scenarios (refer to Section 4.4.2).

4.0 IMPACTS

4.1 GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

The following thresholds are based on the City General Plan EIR and Noise Ordinance, as applicable to the project.

A significant noise impact would occur if the project would:

1. Expose new development to noise levels in excess of the Noise Compatibility Standards established in the City's Community Protection Element, provided in Table 1. For multi-family uses, the noise compatibility standard is 65 CNEL.

2. For infrequent vibration events (defined as fewer than 30 events per day, applicable to construction operations), expose vibration-sensitive uses to vibration levels that exceed 65 VdB, residences and buildings where people normally sleep to 80 VdB, or institutional land uses with primarily daytime uses to 83 VdB. The FTA damage thresholds indicate that, for buildings not extremely sensitive to vibration, a damage threshold between 0.2 inch per second (in./sec) peak particle velocity (PPV) and 0.5 in./sec would apply (depending on the type of building).

3. Result in a permanent increase in ambient noise levels from operational sources that would exceed the sound level limits that exceed the noise limits in the City of Escondido Municipal Code Section 17-229, Sound Level Limits, at any point on or beyond the boundaries of the property on which the sound is produced.

    - For multi-family residential uses the exterior noise limit is 55 dBA L_{EQ} from 7:00 a.m. to 10:00 p.m. and 50 dBA L_{EQ} from 10:00 p.m. to 7:00 a.m.
    - For single-family residential uses the exterior noise limit is 50 dBA L_{EQ} from 7:00 a.m. to 10:00 p.m. and 50 dBA L_{EQ} from 10:00 p.m. to 7:00 a.m.

4. Result in a permanent increase in transportation noise that would exceed the incremental noise standards listed in Table 2.

5. Generate construction noise that exceeds the standards listed in the City of Escondido Municipal Code Section 17-234, Construction Equipment, and Section 17-238, Grading, both of which restrict construction noise to 75 dBA L_{EQ} (1 hour).

6. Expose people residing or working in the project area to noise levels from a nearby public airport or private airstrip that exceed the City's noise compatibility standard for that use.

4.2 ISSUE 1: NOISE LEVEL STANDARD COMPLIANCE FOR NEW USES

As noted in the assumptions, future traffic noise levels presented in this analysis are based on forecasted traffic volumes provided in the project TIS. Refer to Table 3-2, *Existing and Near Term Future Traffic Volumes,* for the forecasted average daily trip (ADT) data for all analyzed traffic conditions.

4.2.1 Transportation Noise

4.2.1.1 *Exterior Residential Noise Levels*

Because the highest traffic volumes were estimated under the Near Term Future + Project scenario, this scenario was used to conservatively estimate on-site exterior noise levels from traffic. Two receiver locations of exterior use areas (the swimming pool and barbeque area) were modeled at a height of 5 feet above ground level. The results of this modeling are shown in Table 9, *Future Exterior Use Area Noise Levels* and the location of these receivers can be seen in Figure 4, *Receiver Locations.*

Table 9
FUTURE EXTERIOR USE AREA
NOISE LEVELS

Receiver Number	Noise Levels 40 mph on CCP (CNEL)	Noise Levels 50 mph on CCP (CNEL)	Exceed Exterior Threshold?
R1	61.4	64.1	No
R2	61.4	64.2	No

Note: Noise levels are based on traffic volumes provided in the project traffic report (KOA Corporation 2015) for the Near Term Future + Project condition. CCP = Centre City Parkway.

No exterior use areas would exceed City thresholds. It should also be noted that modeling conservatively did not account for the noise attenuation that would be provided from the proposed buildings that would be located between these areas and the roadway; therefore actual noise levels at the exterior use areas would likely be 5 dBA-10 dBA lower. Therefore, impacts associated with exterior residential noise levels are less than significant.

4.2.1.2 *Interior Residential Noise Levels*

Traditional architectural materials are normally able to reduce exterior-to-interior noise by up to 15 dBA. Thirteen second-story building façade receivers for the proposed on-site residential units were modeled at a height of 15 feet above ground level (10 feet for the second story height plus a 5 foot height for the receiver). As seen in Table 10, *Future Building Façade Noise Levels*, building façade noise levels may exceed 60 CNEL at the proposed residences facing Brotherton

Road or S. Centre City Parkway. Therefore, interior noise levels are likely to exceed the Title 24 interior noise standard of 45 CNEL, resulting in a potentially significant impact.

Table 10
FUTURE BUILDING FAÇADE
NOISE LEVELS

Receiver Number	Noise Levels 40 mph on CCP (CNEL)	Noise Levels 50 mph on CCP (CNEL)	Exceed Interior Threshold?
R1	57.8	60.0	Yes
R2	58.6	60.6	Yes
R3	59.2	61.3	Yes
R4	60.5	62.8	Yes
R5	63.1	65.7	Yes
R6	63.6	66.3	Yes
R7	64.1	66.9	Yes
R8	64.7	67.6	Yes
R9	65.0	67.8	Yes
R10	65.0	67.8	Yes
R11	65.0	67.9	Yes
R12	65.0	67.9	Yes
R13	64.9	67.7	Yes

Note: Noise levels are based on traffic volumes provided in the project traffic report (KOA Corporation 2015) for the Near Term Future + Project condition. CCP = Centre City Parkway.

4.2.2 Mitigation Measures

To ensure that interior noise levels are within acceptable noise levels, the following mitigation measure is required:

MM-Noi-1 **Interior Noise Attenuation.** Interior noise levels for the proposed residences shall not exceed 45 CNEL. Once specific building plan information is available, additional exterior-to-interior noise analysis shall be conducted for the proposed residences that face Brotherton Road or S. Centre City Parkway where exterior noise levels are expected to exceed 60 CNEL to demonstrate that interior levels do not exceed 45 CNEL. The information in the analysis shall include wall heights and lengths, room volumes, window and door tables typical for a building plan, as well as information on any other openings in the building shell. The analysis shall also assume a "windows closed" condition and that vehicles on Centre City Parkway are traveling at 50 mph. With this specific building plan information, the analysis shall determine the predicted interior noise levels at the planned on-site buildings. If predicted noise levels are found to be in excess of 45 CNEL, the report shall

identify architectural materials or techniques that could be included to reduce noise levels to 45 CNEL in habitable rooms. Standard measures such as glazing with Sound Transmission Control (STC) ratings from a STC 22 to STC 60, as well as walls with appropriate STC ratings (34 to 60), should be considered.

Appropriate means of air circulation and provision of fresh air would be provided to allow windows to remain closed for extended intervals of time so that acceptable interior noise levels can be maintained. The mechanical ventilation system would meet the criteria of the International Building Code (Chapter 12, Section 1203.3 of the 2001 California Building Code).

4.2.3 Significance of Impacts After Mitigation

With the implementation of MM-Noi-1, potential interior noise impacts to on-site NSLUs would be required to reduce interior noise levels to 45 CNEL or below, thus reducing the impact to a less-than-significant level.

4.3 ISSUE 2: EXCESSIVE GROUND-BORNE VIBRATION

4.3.1 Impact Analysis

4.3.1.1 *Construction Vibration*

In accordance with the City's Noise Ordinance, construction only would occur during the daytime and would not disturb sleep. However, residences may be occupied during daytime construction and construction may result in a nuisance to daily activities. Per FTA vibration levels provided in the General Plan EIR, an impact would occur if construction would generate vibration levels greater than 80 VdB at the nearest residence or 83 VdB at the preschool. Residences are located within 25 feet of possible construction activities in the northwestern area of Del Prado North and within 50 feet in the southwestern corner of Del Prado South. The preschool is located within 25 feet of possible construction activities at Del Prado South.

A vibratory roller would be expected to create the highest vibration levels during fill compaction. Table 4.12-9 of the City General Plan EIR provides vibration source levels for common construction equipment, which lists a vibratory roller as generating approximately 94 VdB at 25 feet. Using the vibration formula1 provided in that table, a roller would generate approximately 80 VdB at 75 feet and 83 VdB at 60 feet. Therefore, if a vibratory roller would be operated within 75 feet of nearby residences or within 60 feet of the preschool, impacts would be potentially significant. It should be noted that provided that a vibratory roller is operated at a distance further than 25 feet, PPV would not exceed 0.2 in./sec, and building damage would not be expected to occur.

[1] VdB = VdB (VdB at 25 feet) – 30log(distance/25)

4.3.1.2 *Operation Vibration*

The proposed residential uses do not include equipment that would generate substantial vibration. Therefore, operational vibration impacts are less than significant.

4.3.2 Mitigation Measures

To ensure that construction vibration levels do not exceed 80 VdB at nearby residences or 83 VdB at the preschool, the following mitigation measure is required:

MM-Noi-2 Vibration-generating Construction Equipment Limit. The construction contractor shall not operate a vibratory roller, or equipment with the potential to result in an equivalent level of vibration, that results in a level that exceeds 80 VdB at off-site residences or 83 VdB at the preschool. Operation of a vibratory roller or equivalent shall be avoided within 75 feet of any off-site residence or 60 feet of the preschool.

4.3.3 Significance of Impacts After Mitigation

With the implementation of MM-Noi-2, potential vibration impacts to nearby NSLUs would be reduced to less than significant levels.

4.4 ISSUE 3: PERMANENT INCREASE IN AMBIENT NOISE LEVELS

The anticipated primary project operational noise sources include the HVAC systems, nuisance noise, and vehicular traffic. Potential impacts from these sources are discussed below.

4.4.1 Heating, Ventilation, and Air Conditioning Systems

As mentioned in Section 3.2.2, modeling assumed that the air conditioning condenser would be a Carrier 38HDR060 split system. This unit typically generates a noise level of 56 dBA at a distance of 7 feet. Based on the site plan, the closest project building to the nearest NSLU property line would be the building in the northwest corner of Del Prado North. At this lot, the building pad is set back an approximate distance of 20 feet from the adjacent single-family residential property line. Assuming that an HVAC system is centered on the ground to the north of the building pad, the minimum distance that the HVAC unit would be to the property line would be 30 feet. At this distance, the condenser would generate a noise level of 43 dBA, which does not exceed the City's nighttime allowable hourly limit of 45 dBA for single-family residential; therefore, impacts would be less than significant.

4.4.2 Landscape Equipment and Nuisance Noise

General residential noise sources such as landscape equipment and other intermittent or neighborhood noise such as amplified music or barking dogs (often characterized as nuisance noise) are regulated by the limits within Sections 17-237 and 17-240 of the noise ordinance. Nuisance noise is difficult to control due to the variety of noise sources and intermittent nature of the impact. Compliance with the noise ordinance would limit exposure to nuisance noise and impacts would be less than significant.

4.4.3 Off-site Transportation Noise

TNM software was used to calculate the noise contour distances for off-site roadway segments in the project vicinity for the following scenarios: Existing, Existing + Project, Near Term, and Near Term + Project. The off-site roadway modeling represents a conservative analysis that does not take into account topography or attenuation provided by existing structures. The results of this analysis for the CNEL at the nearest NSLU to the roadway segment are shown below in Table 11, *Off-site Traffic Noise Levels (Existing + Project)*, and Table 12, *Off-site Traffic Noise Levels (Near Term Future + Project).* Additional analysis for the 70, 65, and 60 CNEL distances are provided in Appendix B, *Existing and Near Term Future Traffic Noise Levels.*

A significant direct impact would occur if buildings where people normally sleep and institutional land uses with primarily daytime and evening uses are exposed to noise level increases in excess of allowable increments as listed in Table 2. As seen in Table 11, the project does not increase any of the noise levels above the allowable increase. Therefore, exterior off-site direct transportation noise impacts under the Existing + Project scenario would be less than significant.

Table 11
OFF-SITE TRAFFIC NOISE LEVELS (EXISTING + PROJECT)

Roadway Segment	Distance to Nearest NSLU (feet)	CNEL				
		Existing	Existing + Project	Change from Existing	Allowable Increase[1]	Impact
S. Centre City Parkway						
Brotherton Road to Citracado Parkway	50	47.2	49.3	2.1	12[2]	No
Centre City Parkway						
North of Brotherton Road	100	62.8	62.8	0	2	No
Brotherton Road to Citracado Parkway	150	59.1	59.2	0.1	6[2]	No
South of Citracado Parkway	100	62.9	63.0	0.1	2	No
Brotherton Road						
Charise Street to S Centre City Parkway	50	50.2	52.1	1.9	5	No
S. Centre City Parkway to Centre City Parkway	50	50.4	51.8	1.4	5	No
Citracado Parkway/Gamble Lane						
S. Centre City Parkway to Centre City Parkway	275	44.4	44.4	0	8	No

[1] See Table 2.
[2] Nearest NSLU is a preschool, which is an institutional land use per Table 2.

Table 12 shows the results of the off-site roadway noise analysis under the Near Term Future scenario. As shown on Table 12, no segments are identified as having a significant exterior impact according to this standard. Therefore, traffic-related off-site exterior noise impacts under the Near Term Future + Project scenario are less than significant.

Table 12
OFF-SITE TRAFFIC NOISE LEVELS (NEAR TERM FUTURE + PROJECT)

Roadway Segment	Distance to Nearest NSLU (feet)	CNEL				
		Buildout	Buildout + Project	Change from Buildout	Allowable Increase[1]	Impact
S. Centre City Parkway						
Brotherton Road to Citracado Parkway	50	49.3	51.1	1.8	12[2]	No
Centre City Parkway						
North of Brotherton Road	100	62.9	63	0.1	2	No
Brotherton Road to Citracado Parkway	150	59.3	59.4	0.1	6[2]	No
South of Citracado Parkway	100	63.1	63.2	0.1	2	No
Brotherton Road						
Charise Street to S Centre City Parkway	50	54.2	55.5	1.2	5	No
S. Centre City Parkway to Centre City Parkway	50	53.7	54.4	0.7	5	No
Citracado Parkway/Gamble Lane						
S. Centre City Parkway to Centre City Parkway	275	44.7	45.1	0.4	8	No

[1] See Table 2.
[2] Nearest NSLU is a preschool, which is an institutional land use per Table-2.

4.4.4 Mitigation Measures

Because impacts related to Issue 3 would be less than significant, no mitigation is required.

4.4.5 Significance of Impacts After Mitigation

Impacts would be less than significant without mitigation.

4.5 ISSUE 4: TEMPORARY INCREASE IN AMBIENT NOISE LEVELS

4.5.1 Construction Noise

Construction of the project would generate elevated noise levels that may disrupt nearby noise sensitive receptors, including nearby residents and a preschool. The magnitude of the impact

would depend on the type of construction activity, equipment, duration of each construction phase, distance between the noise source and receiver, and any intervening structures.

Construction noise impact analysis includes demolition and grading, which are typically significantly louder than other activities and have the greatest potential to create impacts to off-site NSLUs. Demolition would involve the use of a front-end loader to demolish the existing building and a dump truck to load the demolished material. Grading involves the ripping of materials using a dozer and excavator. Table 13, *Construction Equipment Noise Levels*, provides the 50-foot distance noise level for these pieces of equipment as modeled in RCNM.

Table 13
CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment	% Operating Time	dBA L_{EQ} (1 hour) @ 50 feet	L_{MAX} @ 50 feet
Front End Loader	40	79.9	80.7
Dump Truck	40	72.5	76.5
Dozer	40	77.7	81.7
Excavator	40	76.7	80.7

Source: RCNM

As a reasonable worst-case scenario, a front end loader and dump truck were assumed to be operating at the same time during demolition. It was assumed that the front end loader would be operating at a distance of 60 feet from the property line of the nearest off-site residence (the nearest residences to the proposed demolition are adjacent to the western portion of the Del Prado North site). The dump truck would be operating to the east of the building to be demolished, at approximately 110 feet from the property line. Based on these assumptions, the highest impact level for a front end loader and a dump truck at the adjacent single-family residences to the west would be 74.2 dBA L_{EQ} (1 hour).

During rough grading, a dozer and an excavator may be working on site at the same time, but would not be working in close proximity to one another due to the nature of their respective operations. Therefore, a dozer and an excavator were modeled for construction noise impacts in isolation. The equipment would be moving across the site during the course of a day; however, a reasonable average distance to the nearest off-site residence and pre-school was assumed to be 100 feet. Based on these assumptions, the highest impact level at the single-family residences to the west and the preschool to the south would be 71.7 dBA L_{EQ} (1 hour) for a dozer and 70.7 dBA L_{EQ} (1-hour) for an excavator. See Appendix C, *Construction Noise Model Outputs*, for model outputs.

Given that construction noise levels from demolition and rough grading would not exceed the City's noise limits of 75 dBA L_{EQ} (1 hour), impacts from construction noise would be less than significant.

4.5.2 Mitigation Measures

Because impacts related to Issue 4 would be less than significant, no mitigation is required.

4.5.3 Significance of Impacts After Mitigation

Impacts would be less than significant without mitigation.

4.6 ISSUE 5: AIRPORT NOISE LEVELS

4.6.1 Public and Private Airports

As noted in the General Plan EIR, the two nearest public airports to the City are the McClellan-Palomar Airport and Ramona Airport. Additionally, portions of the City are subject to periodic flyovers from Marine Corps Air Station (MCAS) Miramar. However, the entire City is outside of the 60 CNEL noise contours for these airports. The project site is not within 2 miles of any private airstrip. Therefore impacts associated with airports and airstrips are less than significant.

4.6.2 Mitigation Measures

Because impacts related to Issue 5 would be less than significant, no mitigation is required.

4.6.3 Significance of Impacts After Mitigation

Impacts would be less than significant without mitigation.

5.0 LIST OF PREPARERS

Bill Vosti	Acoustic Analyst
Charles Terry	Senior Acoustic Specialist
Joanne M. Dramko, AICP	Senior Technical Specialist, Quality Assurance Reviewer
Lara Grimmer	Project Manager

6.0 REFERENCES

California Building Standards Commission

2001 California Building Standards Administrative Code, California Code of Regulations, Title 24, Part 1.

California Department of Transportation (Caltrans)

2009 Technical Noise Supplement (TeNS). November.

2004 Traffic Noise Model (TNM).

Escondido, City of.

2015 Municipal Code. Accessed from: http://www.qcode.us/codes/escondido/

2012a General Plan. May.

2012b Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report. April 23.

Federal Transit Administration.

2006 Transit Noise and Vibration Impact Assessment. May.

KOA Corporation.

2015 Traffic Impact Study.

NBC San Diego

2010 Drivers Kept in Dark About Speedy Secret. January 12. Accessed from: http://www.nbcsandiego.com/traffic/transit/Drivers-Kept-in-Dark-About-Speedy-Secret--81325192.html

U.S. Department of Transportation

2008 Roadway Construction Noise Model.

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix A

CARRIER 38HDR060 SPLIT SYSTEM CONDENSER

ELECTRICAL DATA

38HDR UNIT SIZE	V–PH–Hz	VOLTAGE RANGE*		COMPRESSOR		OUTDOOR FAN MOTOR			MIN CKT AMPS	FUSE/ HACR BKR AMPS
		Min	Max	RLA	LRA	FLA	NEC Hp	kW Out		
018	208/230–1–60	187	253	9.0	48.0	0.80	0.125	0.09	12.1	20
024	208/230–1–60	187	253	12.8	58.3	0.80	0.125	0.09	16.8	25
030	208/230–1–60	187	253	14.1	73.0	1.45	0.25	0.19	19.1	30
036	208/230–1–60	187	253	14.1	77.0	1.45	0.25	0.19	19.1	30
	208/230–3–60	187	253	9.0	71.0	1.45	0.25	0.19	12.7	20
	460–3–60	414	506	5.6	38.0	0.80	0.25	0.19	7.8	15
048	208/230–1–60	187	253	21.8	117.0	1.45	0.25	0.19	28.7	50
	208/230–3–60	187	253	13.7	83.1	1.45	0.25	0.19	18.6	30
	460–3–60	414	506	6.2	41.0	0.80	0.25	0.19	8.6	15
060	208/230–1–60	187	253	26.4	134.0	1.45	0.25	0.19	34.5	60
	208/230–3–60	187	253	16.0	110.0	1.45	0.25	0.19	21.5	35
	460–3–60	414	506	7.8	52.0	0.80	0.25	0.19	10.6	15

* Permissible limits of the voltage range at which the unit will operate satisfactorily

FLA – Full Load Amps
HACR – Heating, Air Conditininng, Refrigeration
LRA – Locked Rotor Amps
NEC – National Electrical Code
RLA – Rated Load Amps (compressor)

NOTE: Control circuit is 24–V on all units and requires external power source. Copper wire must be used from service disconnect to unit.
All motors/compressors contain internal overload protection.

SOUND LEVEL

Unit Size	Standard Rating (dB)	Typical Octave Band Spectrum (dBA) (without tone adjustment)						
		125	250	500	1000	2000	4000	8000
018	68	52.0	57.5	60.5	63.5	60.5	57.5	46.5
024	69	57.5	61.5	63.0	61.0	60.0	56.0	45.0
030	72	56.5	63.0	65.0	66.0	64.0	62.5	57.0
036	72	65.0	61.5	63.5	65.0	64.5	61.0	54.5
048	72	58.5	61.0	64.0	67.5	66.0	64.0	57.0
060	72	63.0	61.5	64.0	66.5	66.0	64.5	55.5

CHARGING SUBCOOLING (TXV-TYPE EXPANSION DEVICE)

UNIT SIZE–VOLTAGE, SERIES	REQUIRED SUBCOOLING °F (°C)
018	12 (6.7)
024	12 (6.7)
030	12 (6.7)
036	12 (6.7)
048	12 (6.7)
060	12 (6.7)

Appendix B

EXISTING AND NEAR TERM FUTURE TRAFFIC NOISE LEVELS

Appendix B
Existing and Future Traffic Noise Levels

Table B-1
EXISTING AND FUTURE TRAFFIC NOISE LEVELS

Roadway/Segment	Distance to Nearest NSLU (feet)	Existing Conditions				Existing + Project				Existing + Cumulative				Existing + Project + Cumulative			
		CNEL @ nearest NSLU	70 CNEL (ft.)	65 CNEL (ft.)	60 CNEL (ft.)	CNEL @ nearest NSLU	70 CNEL (ft.)	65 CNEL (ft.)	60 CNEL (ft.)	CNEL @ nearest NSLU	70 CNEL (ft.)	65 CNEL (ft.)	60 CNEL (ft.)	CNEL @ nearest NSLU	70 CNEL (ft.)	65 CNEL (ft.)	60 CNEL (ft.)
South Centre City Parkway																	
Brotherton Road to Citracado Parkway	50	47.2	IRW	IRW	IRW	49.3	IRW	IRW	IRW	49.3	IRW	IRW	IRW	51.1	IRW	IRW	IRW
Centre City Parkway																	
North of Brotherton Road	100	62.8	45	80	135	62.8	45	80	135	62.9	46	81	137	63	47	81	137
Brotherton Road to Citracado Parkway	150	59.1	47	82	136	59.2	47	81	139	59.3	48	82	140	59.4	48	82	140
South of Citracado Parkway	100	62.9	47	82	136	63	45	80	139	63.1	48	82	140	63.2	48	82	140
Brotherton Road																	
Charise Street to S Centre City Parkway	50	50.2	IRW	IRW	IRW	52.1	IRW	IRW	IRW	54.2	IRW	IRW	14	55.5	IRW	IRW	17
South Centre City Parkway to Centre City Parkway	50	50.4	IRW	IRW	IRW	51.8	IRW	IRW	IRW	53.7	IRW	IRW	12	54.4	IRW	IRW	14
Citracado Parkway/Gamble Lane																	
From South Center City Parkway to Centre City Parkway	275	44.4	IRW	13	45	44.5	IRW	14	46	44.7	IRW	15	48	45.1	IRW	16	50

IRW = In road right-of-way

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix C

CONSTRUCTION NOISE MODELING OUTPUTS

Roadway Construction Noise Model (RCNM),Version 1.1

Report date ########
Case Descri TCH-04

		Baselines (dBA)			---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night	
SF Residen	Residential	75	75	75	

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dump Truck	No	40		76.5	110	0
Front End Loader	No	40		79.1	60	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Dump Truck	69.6	65.6
Front End Loader	77.5	73.5
Total	77.5	74.2

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date 8/12/2015
Case Descr TCH-04

		---- Receptor #2 ----		
	Baselines (dBA)			
Description	Land Use	Daytime	Evening	Night
Residential	Residential	75	75	75

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	100	0

Results

	Calculated (dBA)	
Equipment	*Lmax	Leq
Dozer	75.6	71.7
Total	75.6	71.7

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date 8/12/2015
Case Descri TCH-04

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential	Residential	75	75	75

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40	85		100	0

Results

Equipment	Calculated (dBA) *Lmax	Leq
Excavator	79	75
Total	79	75

*Calculated Lmax is the Loudest value.

Appendix G

TRAFFIC IMPACT STUDY

DEL PRADO ESCONDIDO
TRAFFIC IMPACT STUDY

August 2015

KOA CORPORATION
PLANNING & ENGINEERING
www.koacorporation.com

DEL PRADO ESCONDIDO
TRAFFIC IMPACT STUDY

August 2015

Prepared for:
Touchstone Communities
12700 Stowe Drive Suite 130
Poway, CA 92064

Prepared by:
KOA Corporation
5095 Murphy Canyon Road, Suite 330
San Diego, CA 92123
(619) 683-2933
Fax: (619) 683-7982

Job No.: JB42056

Table of Contents

CHAPTER 1 THE PROJECT **1**

PROJECT DESCRIPTION 1
STUDY AREA 1
Roadway Segments *1*
Intersections *1*
PROJECT TRIP GENERATION 1
TRIP DISTRIBUTION AND ASSIGNMENT 2
PROJECT ACCESS 2

CHAPTER 2 METHODOLOGIES **11**

STUDY SCENARIOS 11
ANALYSIS METHODOLOGIES 11
Roadway Segment Capacity Analysis *11*
Intersection Capacity Analysis *11*
Signalized Intersections 12
Two-Way Stop-Controlled Intersections 12
Analysis of Significance *12*

CHAPTER 3 EXISTING CONDITIONS **13**

ROADWAY NETWORK 13
TRAFFIC VOLUMES 13

CHAPTER 4 NEAR-TERM CONDITIONS **23**

NEAR-TERM TRAFFIC VOLUMES 23
NEAR-TERM CIRCULATION NETWORK 23

CHAPTER 5 ON-SITE CIRCULATION, PEDESTRIAN, TRANSIT, BICYCLE AND PARKING **32**

ON-SITE CIRCULATION 32
PEDESTRIAN 32
TRANSIT 32
BICYCLE 32
PARKING 32

CHAPTER 6 SUMMARY OF ANALYSIS **33**

CHAPTER 7 RECOMMENDATIONS **35**

List of Figures

FIGURE 1-1 – PROJECT STUDY AREA....3
FIGURE 1-2 – PROJECT SITE PLAN....4
FIGURE 1-3 – PROJECT OUTBOUND TRIP DISTRIBUTION....6
FIGURE 1-4 – PROJECT INBOUND TRIP DISTRIBUTION....7
FIGURE 1-5 – DAILY PROJECT TRIPS....8
FIGURE 1-6 – AM PEAK HOUR PROJECT TRIPS....9
FIGURE 1-7 – PM PEAK HOUR PROJECT TRIPS....10
FIGURE 3-1 – EXISTING CIRCULATION NETWORK....16
FIGURE 3-2 – EXISTING ROADWAY SEGMENT VOLUMES....17
FIGURE 3-3 – EXISTING AM PEAK HOUR INTERSECTION VOLUMES....18
FIGURE 3-4 – EXISTING PM PEAK HOUR INTERSECTION VOLUMES....19
FIGURE 3-5 – EXISTING ROADWAY SEGMENT VOLUMES WITH PROJECT....20
FIGURE 3-6 – EXISTING AM PEAK HOUR INTERSECTION VOLUMES WITH PROJECT....21
FIGURE 3-7 – EXISTING PM PEAK HOUR INTERSECTION VOLUMES WITH PROJECT....22
FIGURE 4-1 – NEAR-TERM ROADWAY SEGMENT VOLUMES WITHOUT PROJECT....26
FIGURE 4-2 – NEAR-TERM AM PEAK HOUR INTERSECTION VOLUMES WITHOUT PROJECT....27
FIGURE 4-3 – NEAR-TERM PM PEAK HOUR INTERSECTION VOLUMES WITHOUT PROJECT....28
FIGURE 4-4 – NEAR-TERM ROADWAY SEGMENT VOLUMES WITH PROJECT....29
FIGURE 4-5 – NEAR-TERM AM PEAK HOUR INTERSECTION VOLUMES WITH PROJECT....30
FIGURE 4-6 – NEAR-TERM PM PEAK HOUR INTERSECTION VOLUMES WITH PROJECT....31

List of Tables

TABLE 1-1 PROJECT TRIP GENERATION....2
TABLE 3-1 EXISTING ROADWAY SEGMENT CONDITIONS....14
TABLE 3-2 EXISTING INTERSECTION CONDITIONS....15
TABLE 4-1 CUMULATIVE PROJECTS....23
TABLE 4-2 NEAR-TERM ROADWAY SEGMENT CONDITIONS....24
TABLE 4-3 NEAR-TERM INTERSECTION CONDITIONS....25
TABLE 6-1 SUMMARY OF ROADWAY SEGMENT CONDITIONS....33
TABLE 6-2 SUMMARY OF INTERSECTION CONDITIONS BEFORE MITIGATION....34

Appendices

APPENDIX A LEVEL OF SERVICE CONCEPTS, ANALYSIS METHODOLOGIES, STANDARDS OF SIGNIFICANCE
APPENDIX B TRAFFIC COUNT DATA
APPENDIX C TRIP GENERATION
APPENDIX D CUMULATIVE PROJECT INFORMATION
APPENDIX E PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS EXISTING CONDITIONS
APPENDIX F PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS NEAR-TERM CONDITIONS

CHAPTER 1
THE PROJECT

This traffic impact analysis has been prepared for the proposed Del Prado Escondido residential development in the City of Escondido. The proposed project is located on the southwest corner of Brotherton Road and South Centre City Parkway. Access to the project site is provided by two project driveways with one on South Centre City Parkway and one on Brotherton Road. Centre City Parkway is a major arterial that connect the project to other arterials. Interstate 15 (I-15) provides regional access to the project site.

Figure 1-1 shows the project study area. Figure 1-2 shows the project site plan.

PROJECT DESCRIPTION

The project consists of 113 multi-family attached condominiums. The major part of the project site is currently vacant with one single family detached home located at the northwest corner of the project site. The project generates a total of 904 daily driveway trips.

STUDY AREA

The study area for this project includes those locations that are expected to be affected by this project. The scope of the study area is based on the City of Escondido Traffic Impact Analysis Guideline, discussions with City staff and a working knowledge of the local transportation system. The specific study area includes eight roadway segments and five intersections:

Roadway Segments

- South Centre City Parkway from Brotherton Road to Citracado Parkway
- Centre City Parkway north of Brotherton Road
- Centre City Parkway from Brotherton Road to Citracado Parkway
- Centre City Parkway south of Citracado Parkway
- Brotherton Road from Charise Street to South Center Parkway
- Brotherton Road from South Center Parkway to Centre City Parkway
- Citracado Parkway west of South Centre City Parkway
- Citracado Parkway from South Centre City Parkway to Centre City Parkway

Intersections

- Charise Street/Project Driveway #1 at Brotherton Road
- South Centre City Parkway at Brotherton Road
- Centre City Parkway at Brotherton Road
- South Centre City Parkway at Citracado Parkway
- Centre City Parkway at Citracado Parkway

PROJECT TRIP GENERATION

Trip generation is a measure or forecast of the number of trips that begin or end at the project site. The traffic generated is a function of the extent and type of development proposed for the site. These trips will result in some traffic increases on the streets where they occur. Vehicular traffic generation characteristics for projects are estimated based on established rates. These rates identify the probable

traffic generation of various land uses based studies of developments in comparable settings. The rates used in this analysis were determined based on rates contained in the (SANDAG) (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (2002). The manual provide standards and recommendations for the probable traffic generation of various land uses based upon local, regional and nationwide studies of existing developments in comparable settings. Appendix C contains excerpts from the manual.

Table 1-1
Project Trip Generation

Land Use	Intensity	Unit	Daily Rate	Daily Trips		AM Peak Hour			PM Peak Hour		
						Total	In	Out	Total	In	Out
Condominium (6-20 DU/AC)	113	DU	8 trips Per DU	904	Rate	0.08	20%	80%	0.1	70%	30%
					Trips	72	14	58	90	63	27

Source (Trip Rate): SANDAG (not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002).
Note: Numbers may not total due to rounding.

TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution and assignment is the process of identifying the probable destinations, directions and traffic routes that project related traffic will likely affect. Trip distribution and assignment information has been estimated from observed traffic patterns for this project. Once the proposed developments trips have been estimated, they are assigned to the study area network. The trip distribution and assignment for this project is based on observed traffic patterns and engineering judgment.

The trip distribution and assignment for the project-related trips is shown in Figure 1-3 and 1-4. Figures 1-5 through 1-7 show the resulting daily and peak hour project trips.

PROJECT ACCESS

The proposed project will be accessed through two driveways, one on South Centre City Parkway and one on Brotherton Road. Currently one driveway on South Centre City Parkway exists. The driveway on Brotherton Road would align to Charise Street to form the south leg of the Brotherton Road and Charise Street intersection.

J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

NOT TO SCALE

KOA CORPORATION
PLANNING & ENGINEERING

Del Prado Escondido, Traffic Impact Study | Figure 1-1

Escondido, CA | Page 3 | Project Study Area

J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

KOA CORPORATION PLANNING & ENGINEERING	Del Prado Escondido, Traffic Impact Study		Figure 1-2 cont.
	Escondido, CA	Page 5	Project Site Plan

LEGEND

- Project Site
- One-Way Street
- # Study Intersection
- XX% Trip Distribution Percentage

NOT TO SCALE

J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

KOA CORPORATION
PLANNING & ENGINEERING

Del Prado Escondido, Traffic Impact Study — Figure 1-3

Escondido, CA — Page 6 — Project Outbound Trip Distribution

LEGEND

- Project Site
- One-Way Street
- # Study Intersection
- XX% Trip Distribution Percentage

NOT TO SCALE

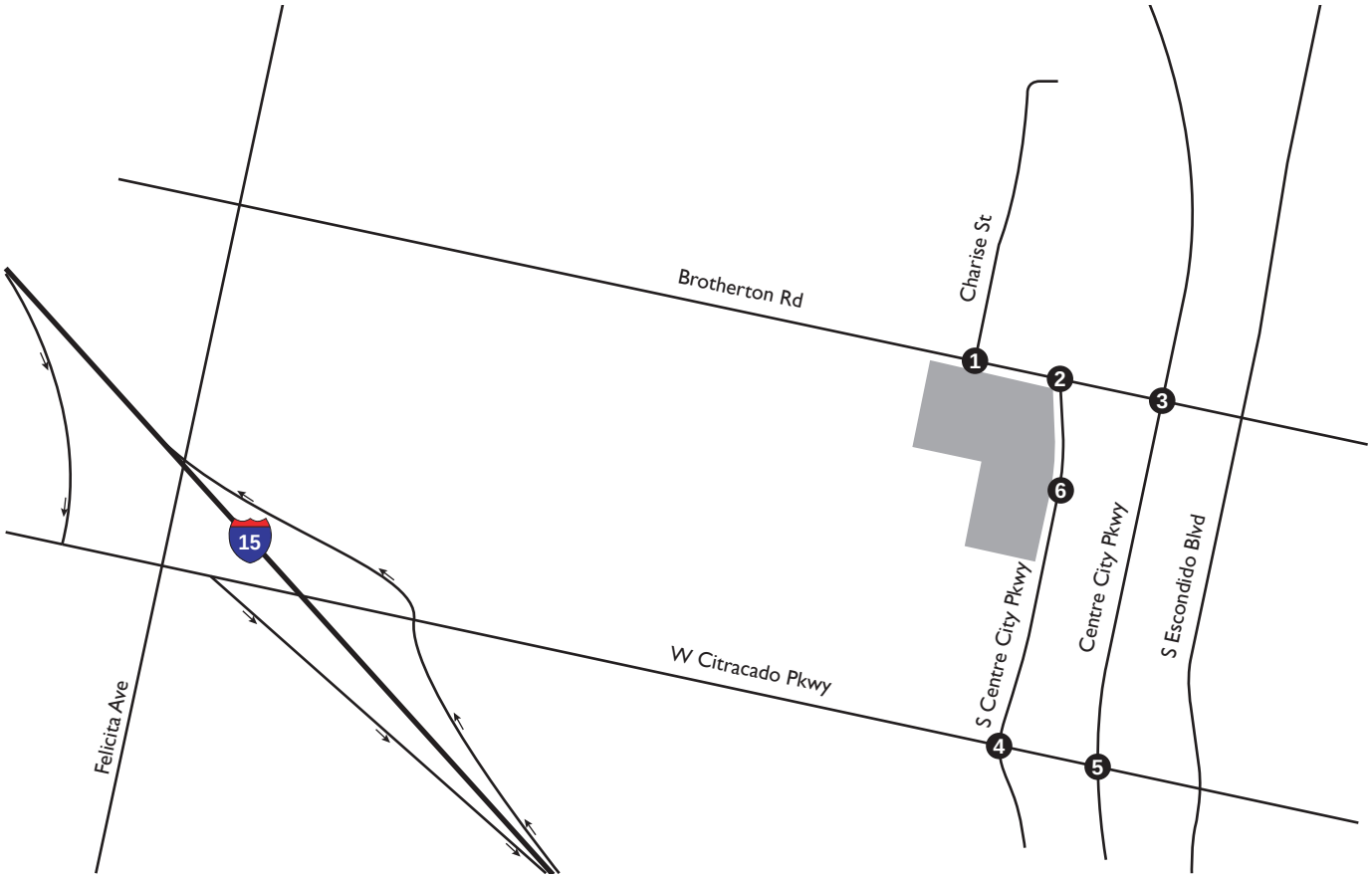
J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

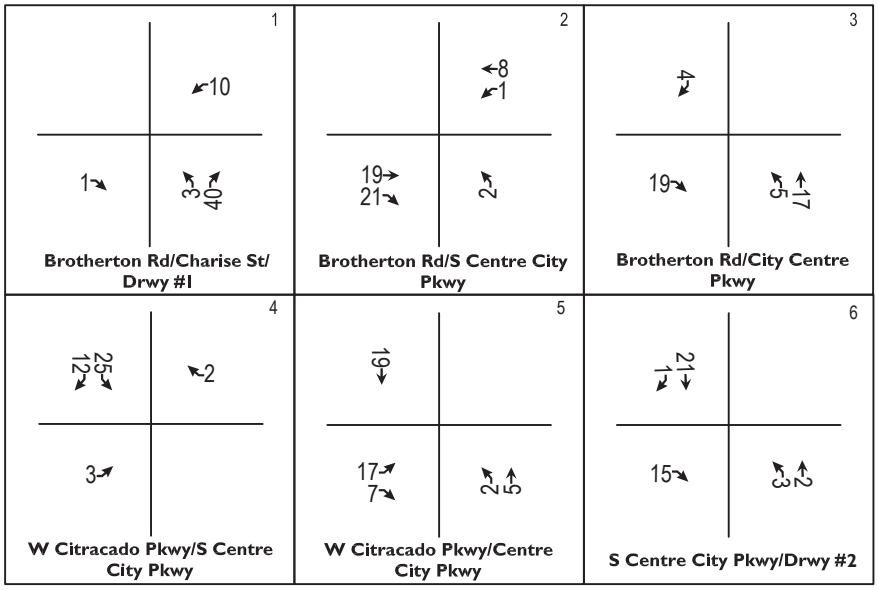
LEGEND

- Project Site
- → One-Way Street
- XX Daily Project Trips

NOT TO SCALE

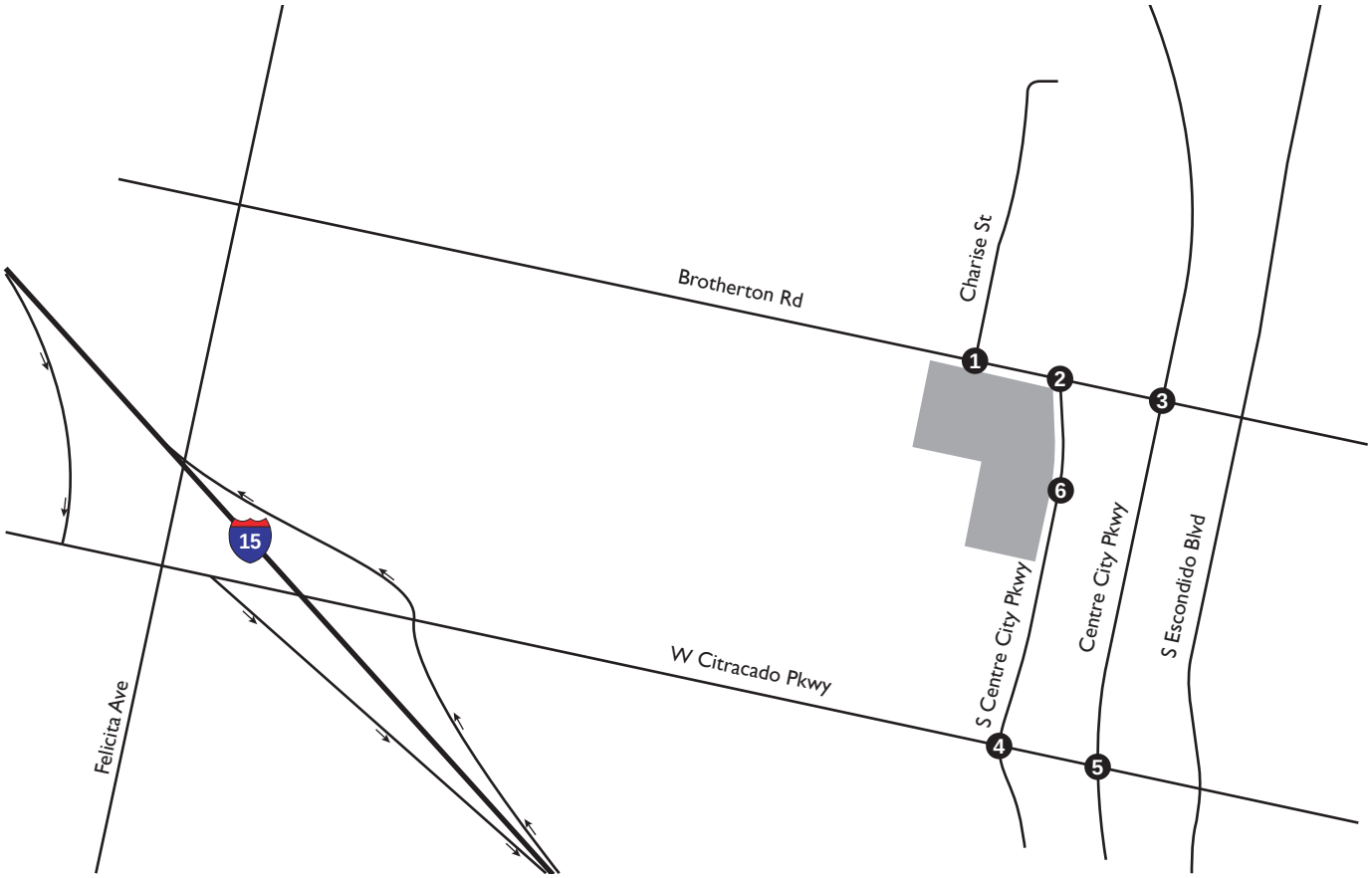
J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

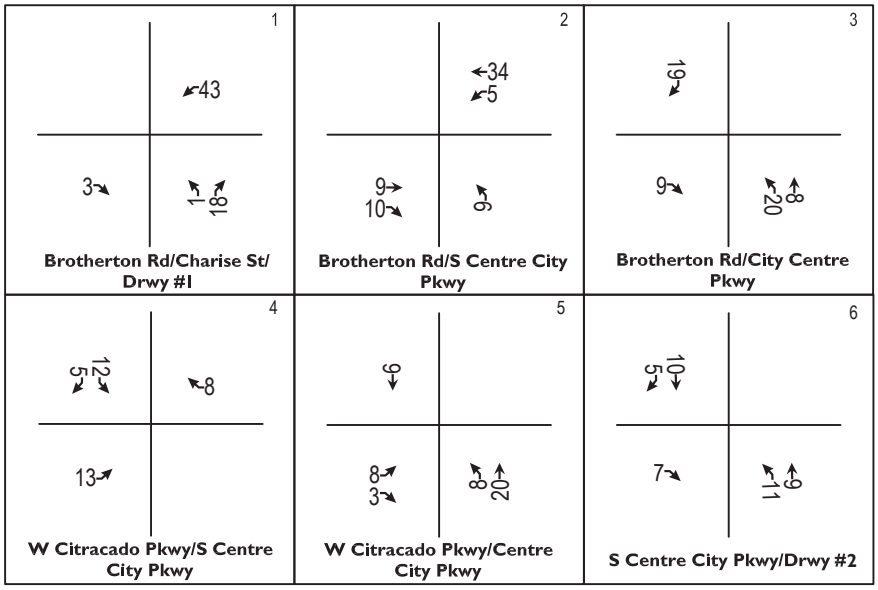




NOT TO SCALE

J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai





J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

NOT TO SCALE

CHAPTER 2
METHODOLOGIES

This chapter documents the methodologies and assumptions used to conduct the traffic impact analysis for the project. Study methodology and analysis is based on the City of Escondido Traffic Impact Analysis Guideline (October, 2013), San Diego Traffic Engineer's Council (SANTEC) and Institute of Transportation Engineers (ITE) guidelines adopted in March 2000. The latter two guidelines are used to determine the project's conformance with County of San Diego Public Facility Element policies and evaluate whether a project's impact is perceptible to the average driver. This section contains the following background information:

- Study scenarios
- Study time periods
- Capacity analysis methodologies

STUDY SCENARIOS

This report presents an analysis of the following analysis scenarios:

- Existing Conditions
- Existing Conditions With Project
- Near-Term Without Project
- Near-Term With Project

Since the proposed project is slightly less dense than the General Plan Land Use Element, the project would have less of an impact on the study intersections and segments. Hence the Horizon Year 2035 conditions scenario was not included in this study report.

ANALYSIS METHODOLOGIES

Street system operating conditions are typically described in terms of "level of service." Level of service is a report-card scale used to indicate the quality of traffic flow on roadway segments and at intersections. Level of service (LOS) ranges from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion). A more detailed description of the concepts described in this section is provided in Appendix A of this document.

The following methods are outlined in this publication and used in this study.

Roadway Segment Capacity Analysis

The City of Escondido guidelines have published daily traffic volume standards for roadways within its jurisdiction. To determine service levels on study area roadway segments, we compared the appropriate average daily traffic thresholds for level of service to the daily capacity of the study area roadway segments, and the existing and future volumes in the study area. The thresholds for determining level of service used in this analysis are summarized in Appendix A.

Intersection Capacity Analysis

The analysis of peak hour intersection performance was conducted using the Synchro analysis software program, which uses methodologies defined in the 2010 Highway Capacity Manual (HCM)

to calculate results. Level of service (LOS) for intersections is determined by control delay. Control delay is defined as the total elapsed time from when a vehicle stops at the end of a queue to the time the vehicle departs from the stop line. The total elapsed time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in the queue. Appendix A lists the HCM delay/LOS criteria for both signalized and unsignalized intersections.

Signalized Intersections

The HCM analysis methodology for evaluating signalized intersections is based on the "operational analysis" procedure. This technique uses 1,900 passenger cars per hour of green per lane (pcphgpl) as the maximum saturation flow of a single lane at an intersection. This saturation flow rate is adjusted to account for lane width, on-street parking, conflicting pedestrian flow, traffic composition, (e.g., the percentage of vehicles that are trucks) and shared lane movements (e.g., through and right-turn movements from the same lane). Average control delay is calculated by taking a volume-weighted average of all the delays for all vehicles entering the intersection.

Two-Way Stop-Controlled Intersections

The HCM analysis methodology for evaluating two-way stop-controlled (TWSC) intersections is based on gap acceptance and conflicting traffic for vehicles stopped on the minor-street approaches. The critical gap (or minimum gap that would be acceptable) is defined as the minimum time interval in the major-street traffic stream that allows intersection entry for one minor-street vehicle. Average control delay and LOS for the "worst approach" are reported. Level of service is not defined for the intersection as a whole.

Analysis of Significance

To determine direct project impacts, the SANTEC/ITE guidelines have developed a series of thresholds based on allowable increases in volume-to-capacity ratios that become more stringent as level of service worsens. Appendix A summarizes these thresholds. Where roadway segments and intersections operate at LOS C or better impacts are not considered significant.

CHAPTER 3
EXISTING CONDITIONS

ROADWAY NETWORK

The principal roadways in the project study area are described briefly below. The description includes the physical characteristics, adjacent land uses, and traffic control devices along these roadways. The existing roadway geometry and control conditions are shown in Figure 3-1. Additional details regarding specific intersection operating conditions can be found on the capacity analysis worksheets in Appendix E.

Centre City Parkway runs north/south splitting off from I-15 close to south limit of the City. It runs east of and parallel to I-15 and passes through downtown Escondido. The street runs past the northern limits of the City and parallel to the I-15 Freeway. The street functions as a four-lane divided major arterial street with bike lanes and with parking restricted. There is no sidewalk and no posted speed limit signs were observed in the vicinity of the project area. The street has frontage roads on either side south of Brotherton Road and on east side north of Brotherton Road, in the vicinity of the project area. The land use west of the street is mainly residential.

South Centre City Parkway is a two-way frontage street which runs north/south parallel to and on the west side of Centre City Parkway. The street currently functions as 2 lane undivided local collector. The street has sidewalk and parking is permitted on west side of the street. The roadway provides driveway access to adjacent land uses, which currently consist of retail and a day care center.

Citracado Parkway runs east/west and connects Centre City Parkway on the east and I-15 on the west. The street currently functions as 2 lane undivided local collector between Centre City Parkway and Miller Avenue and as a 4 lane divided collector between I-15 northbound ramps and Felicita Road. There is sidewalk on some segments of the street and parking is restricted on both sides of the street. The speed limit is posted at 30 mph at the east end of Citracado Parkway. The street provides driveway access to adjacent land uses which consist of residential uses, a hospital and doctors' offices, and a church.

Brotherton Road runs east/west intersecting Centre City Parkway on the east and dead ends on the east side of the I-15 freeway on the west. The street currently functions as a 2 lane local collector. There is sidewalk and parking allowed on some segments of the street. No posted speed signs were observed but assumed prima facie 25 mph. The street provides driveway access to adjacent land uses which consist of residential, school and church uses.

TRAFFIC VOLUMES

The intersection turning movement counts were conducted during the weekday morning peak period from 7:00 AM to 9:00 AM and during the weekday evening peak period from 4:00 PM to 6:00 PM in September 2014. Average daily traffic volumes were obtained through machine data collection. Appendix B maintains all traffic count data. The daily traffic volumes are shown in Figure 3-2.
The resultant existing weekday morning and evening peak hour intersection volumes are shown in Figures 3-3 and 3-4.

Table 3-1
Existing Roadway Segment Conditions

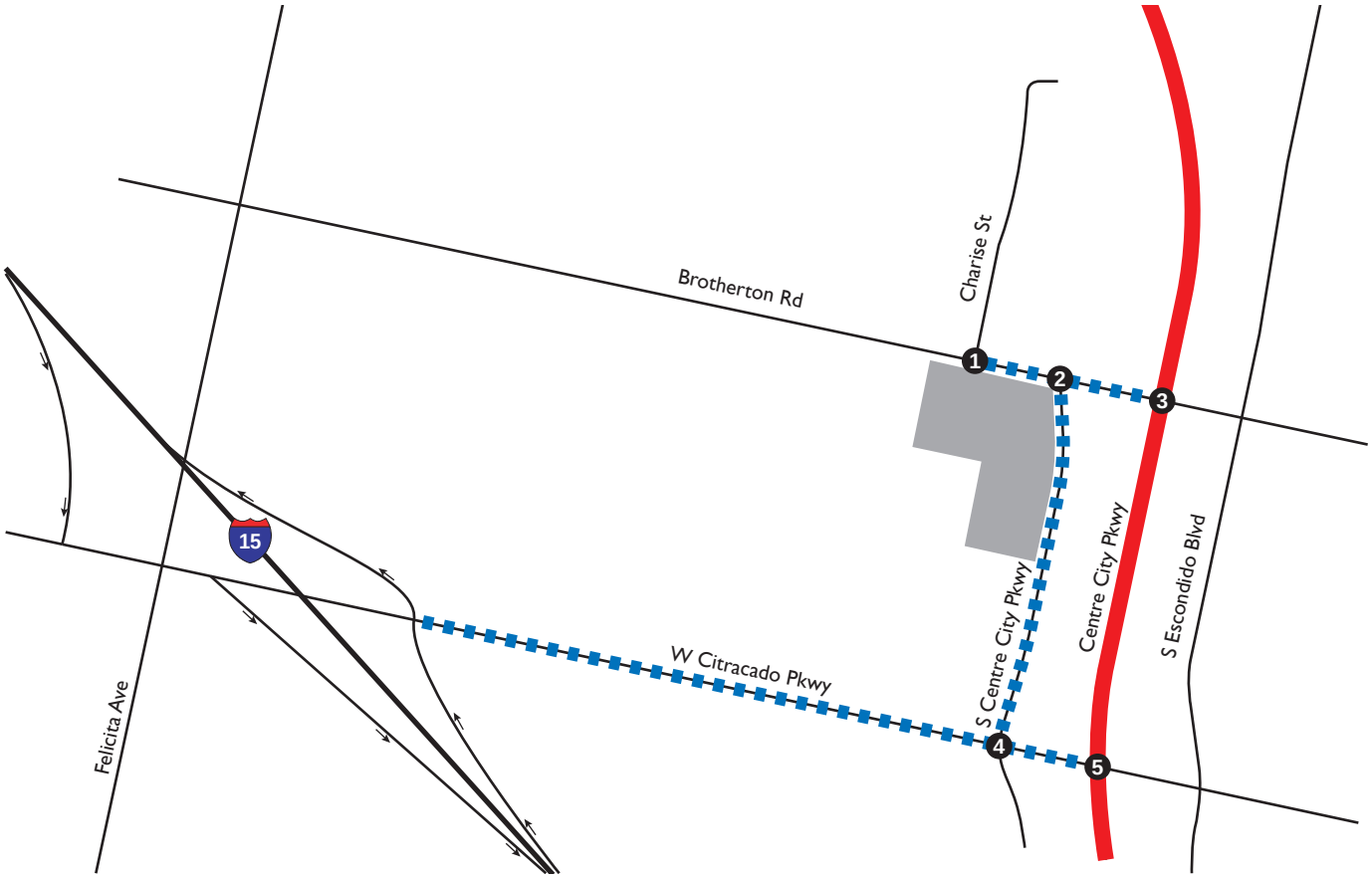
Roadway Segment	Lanes/ Class	LOS E Capacity	Existing Without Project			Project Traffic	Existing With Project			Comparison	
			ADT	V/C	LOS		ADT	V/C	LOS	**Δ V/C**	Signi ficant ?
S Centre City Pkwy											
From Brotherton Rd to Citracado Pkwy	2LC	10,000	209	0.021	A	430	639	0.064	A	0.043	No
Centre City Pkwy											
North of Brotherton Rd	4MA	37,000	23,463	0.634	C	272	23,735	0.641	C	0.007	No
From Brotherton Rd to Citracado Pkwy	4MA	37,000	24,280	0.656	C	428	24,708	0.668	C	0.012	No
South of Citracado Pkwy	4MA	37,000	24,378	0.659	C	406	24,784	0.670	C	0.011	No
Brotherton Rd											
From Charise St to S Centre City Pkwy	2LC	10,000	764	0.076	A	618	1,382	0.138	A	0.062	No
From S Centre City Pkwy to Centre City Pkwy	2LC	10,000	838	0.084	A	428	1,266	0.127	A	0.043	No
Citracado Pkwy/Gamble Ln											
From S Center City Pkwy To Centre City Pkwy	2LC	10,000	4,758	0.476	B	250	5,008	0.501	B	0.025	No

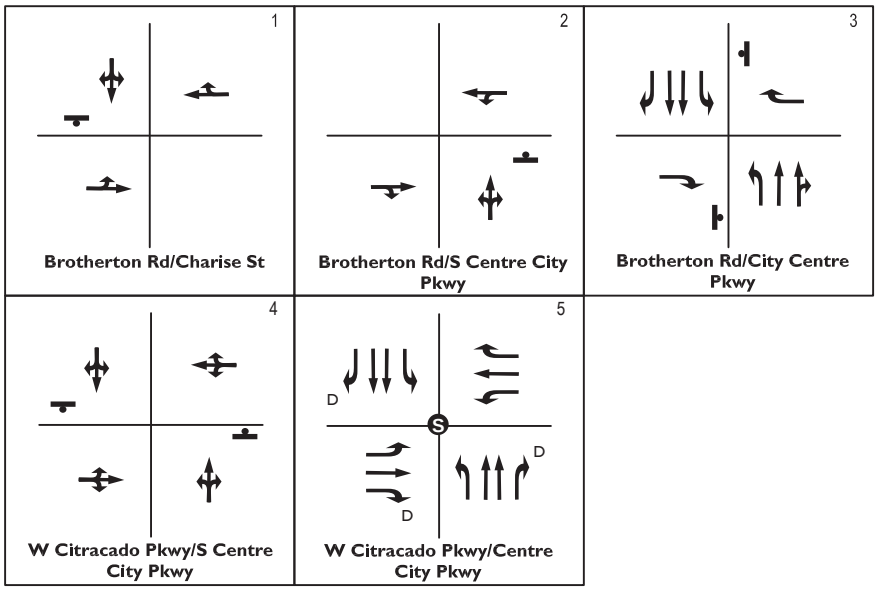
Abbreviations: 2LC: 2 Local Collector, 3C: 3 Lane Collector, 4C: 4 Lane Collector, 4MA: 4 Lane Major Arterial

Table 3-2
Existing Intersection Conditions

Intersection	Existing Conditions		Existing + Project		Δ Delay	Significant
	Delay	LOS	Delay	LOS		
AM Peak Hour						
1. Brotherton Rd & Charise St / Project Driveway # 1 [1]	8.8	A	9.1	A	0.3	No
2. Brotherton Rd & S. Centre City Pkwy [1]	9.2	A	9.5	A	0.3	No
3. Brotherton Rd & Centre City Pkwy [2]	13.8	B	14.3	B	0.5	No
4. W. Citracado Pkwy & S. Centre City Pkwy [1]	10.9	B	11.4	B	0.5	No
5. W. Citracado Pkwy & Centre City Pkwy [3]	10.1	B	13.7	B	3.6	No
6. S. Centre City Pkwy & Project Driveway #2 [1]			8.5	A	8.5	No
PM Peak Hour						
1. Brotherton Rd & Charise St / Project Driveway # 1 [1]	8.8	A	9.2	A	0.4	No
2. Brotherton Rd & S. Centre City Pkwy [1]	8.9	A	9.5	A	0.6	No
3. Brotherton Rd & Centre City Pkwy [2]	16.7	C	16.8	C	0.1	No
4. W. Citracado Pkwy & S. Centre City Pkwy [1]	11.6	B	12.1	B	0.5	No
5. W. Citracado Pkwy & Centre City Pkwy [3]	9.8	A	14.2	B	4.4	No
6. S. Centre City Pkwy & Project Driveway #2 [1]			8.4	A	8.4	No

[1] Side Street Stop Controlled
[2] All-Way Stop Controlled
[3] Signalized Intersection





LEGEND

- Project Site
- # Study Intersection
- S Signalized Intersection
- Stop Sign
- D Defacto Right Turn
- Lane Geometry

Roadway Classification

- 2 Local Collector
- 4 Lane Major Arterial
- Non-Study Segment

NOT TO SCALE

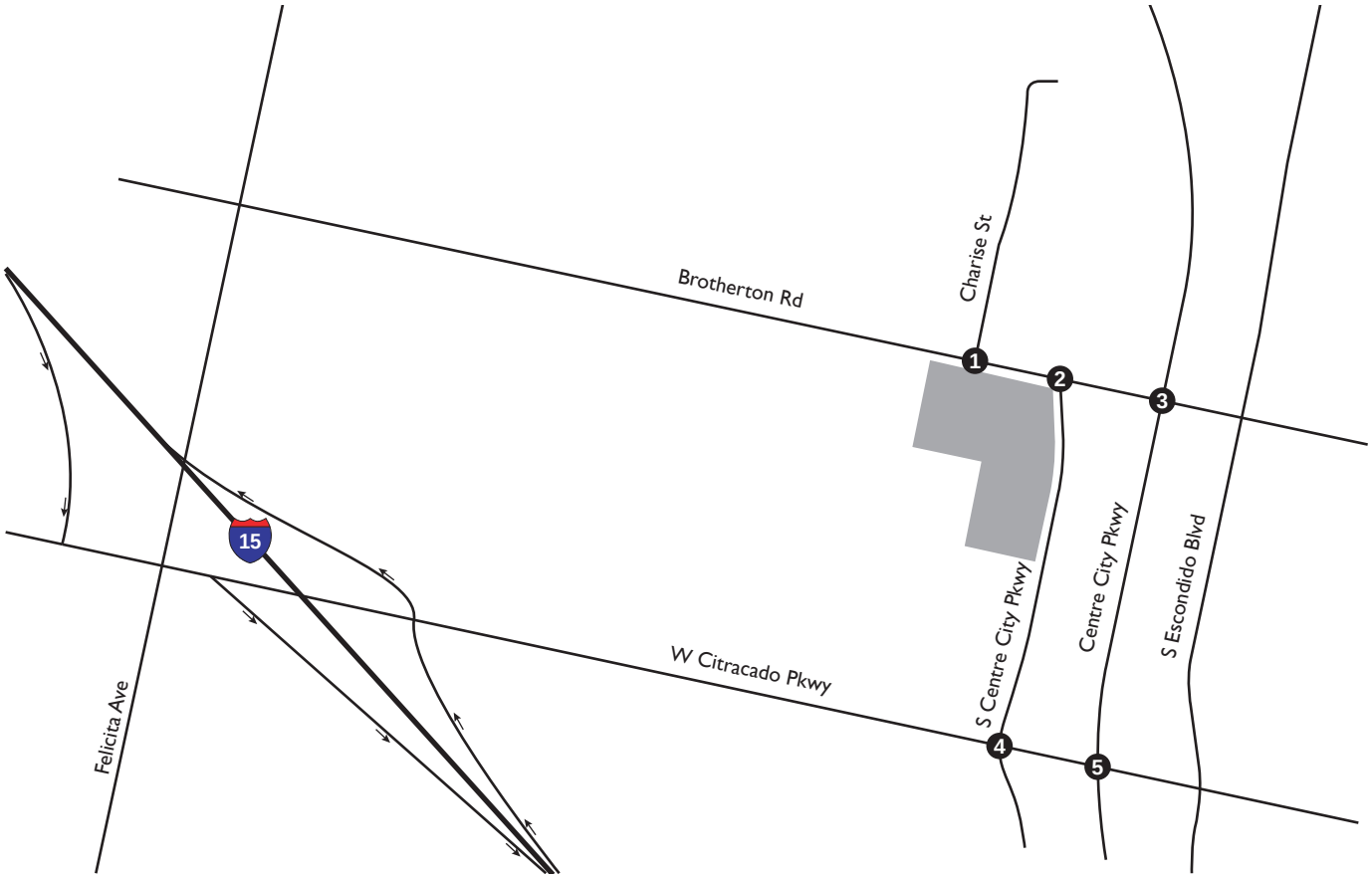
J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

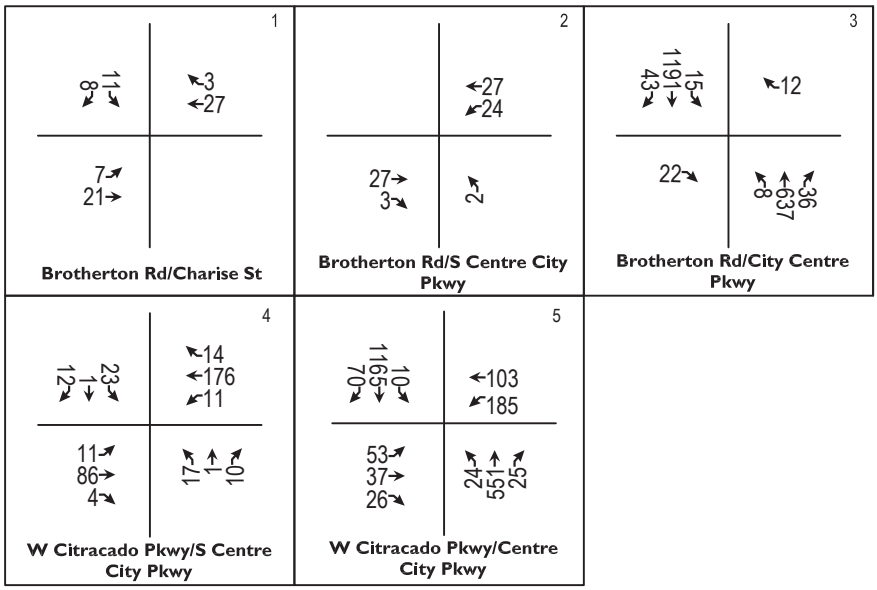
LEGEND

- Project Site
- → One-Way Street
- XX Average Daily Traffic

NOT TO SCALE

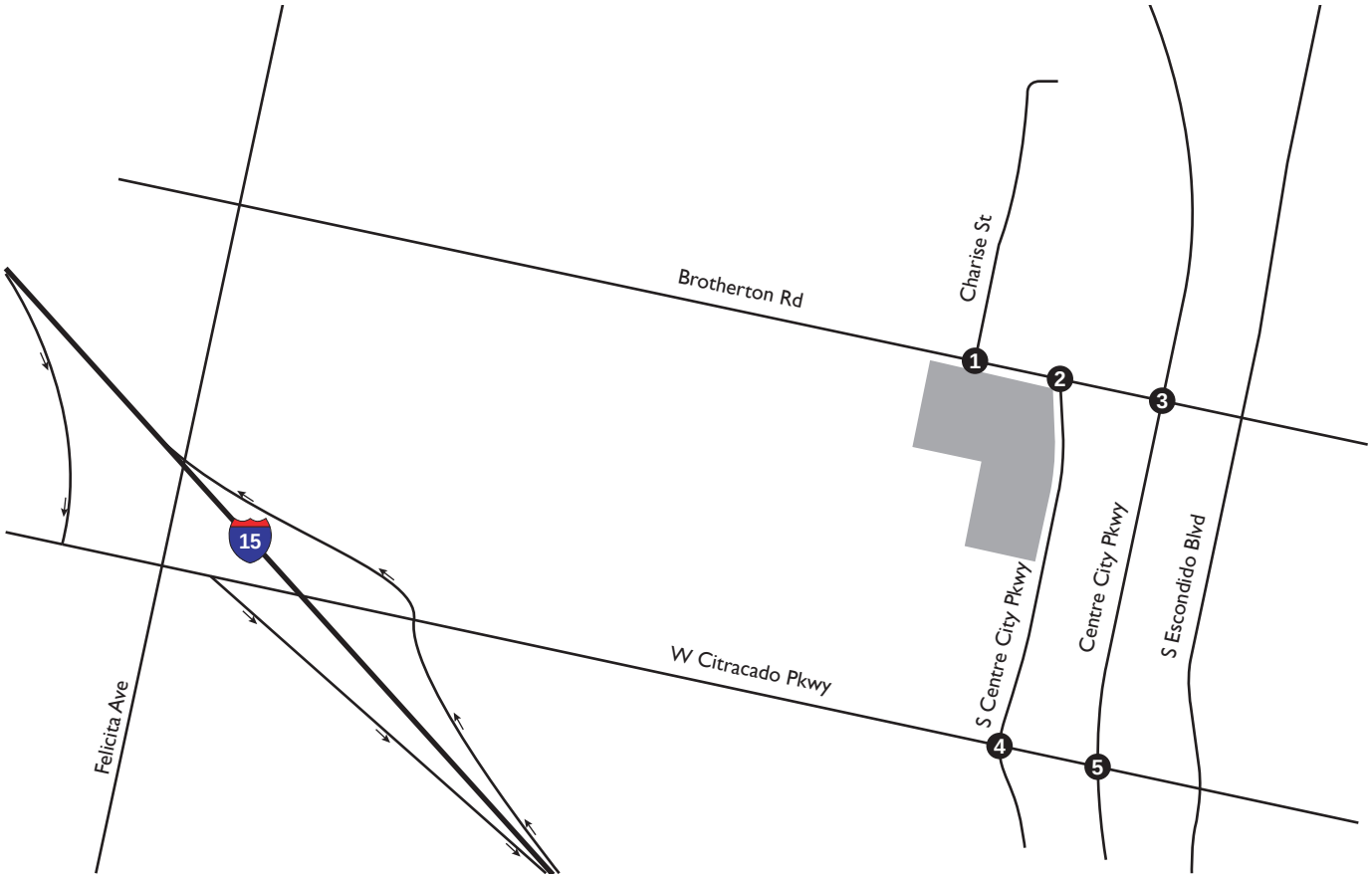
J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

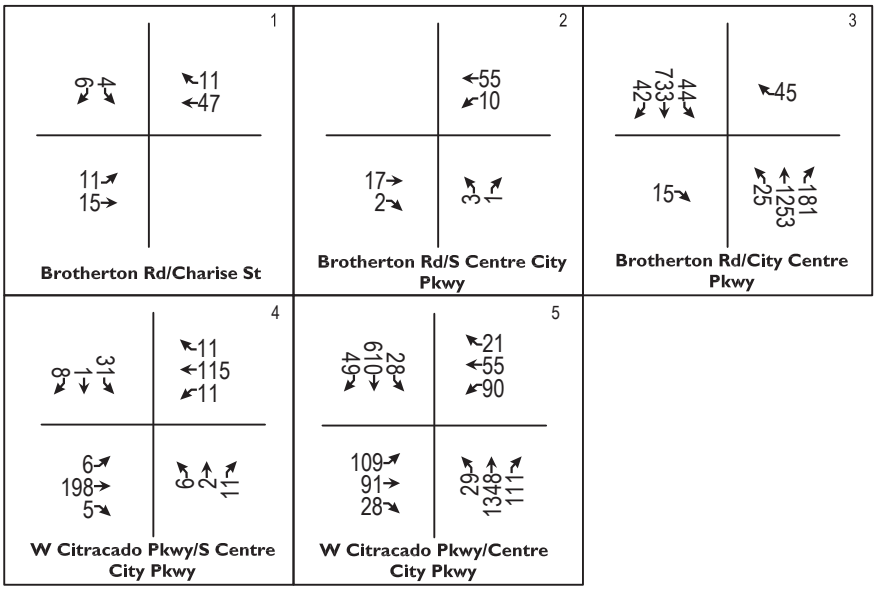




NOT TO SCALE

J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai





NOT TO SCALE

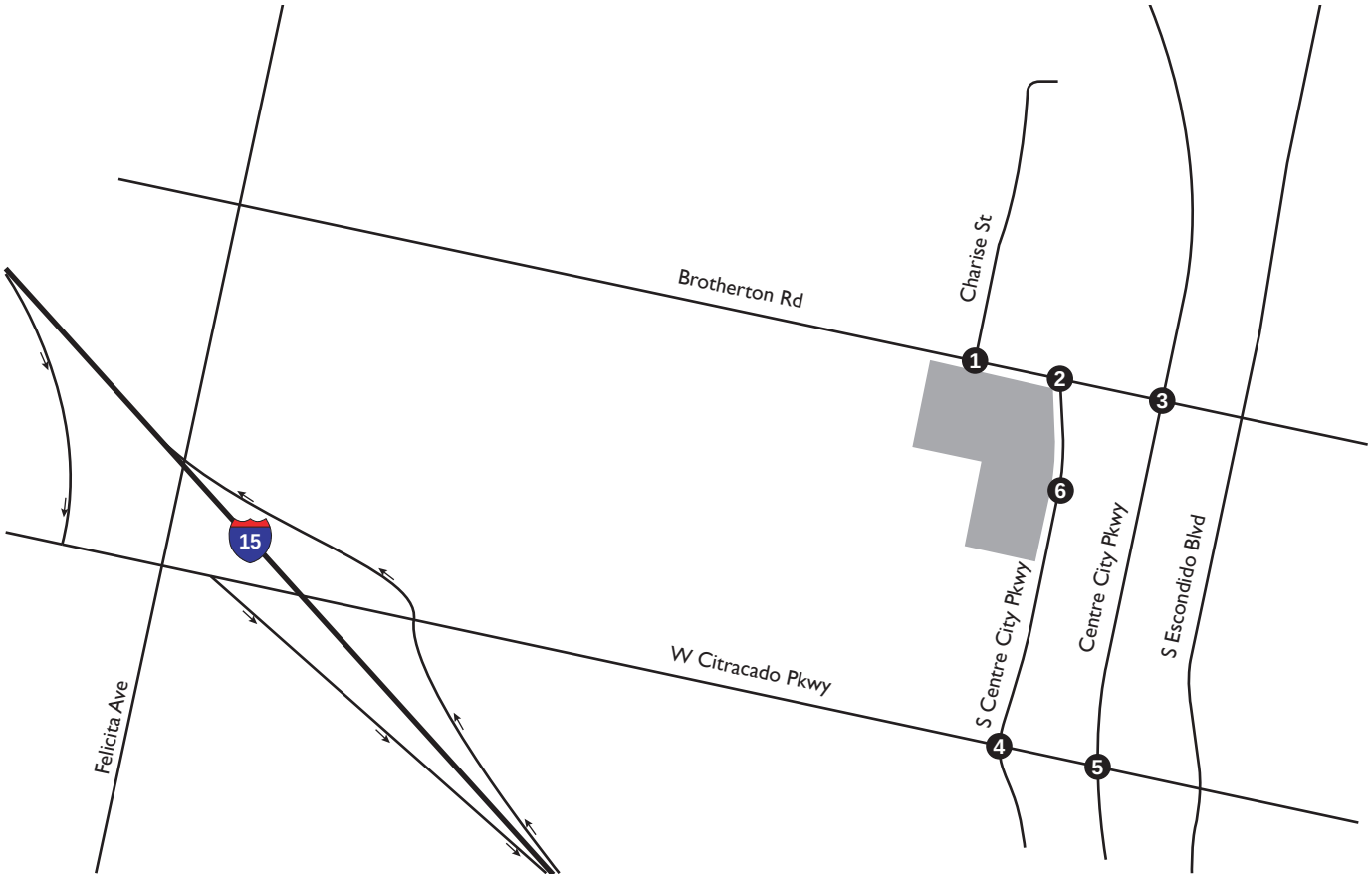
J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

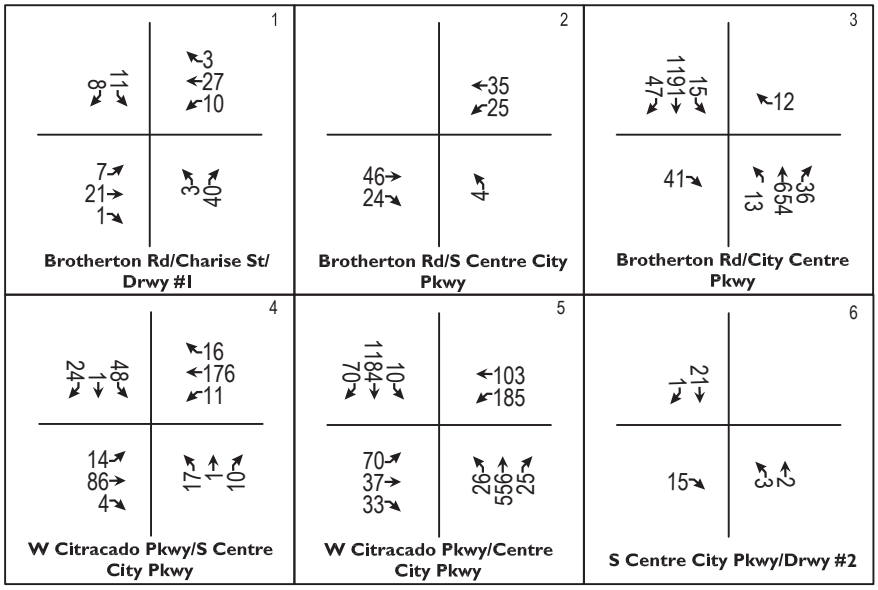
KOA CORPORATION
PLANNING & ENGINEERING

Del Prado Escondido, Traffic Impact Study — Figure 3-4

Escondido, CA — Page 19 — Existing PM Peak Hour Intersection Volumes

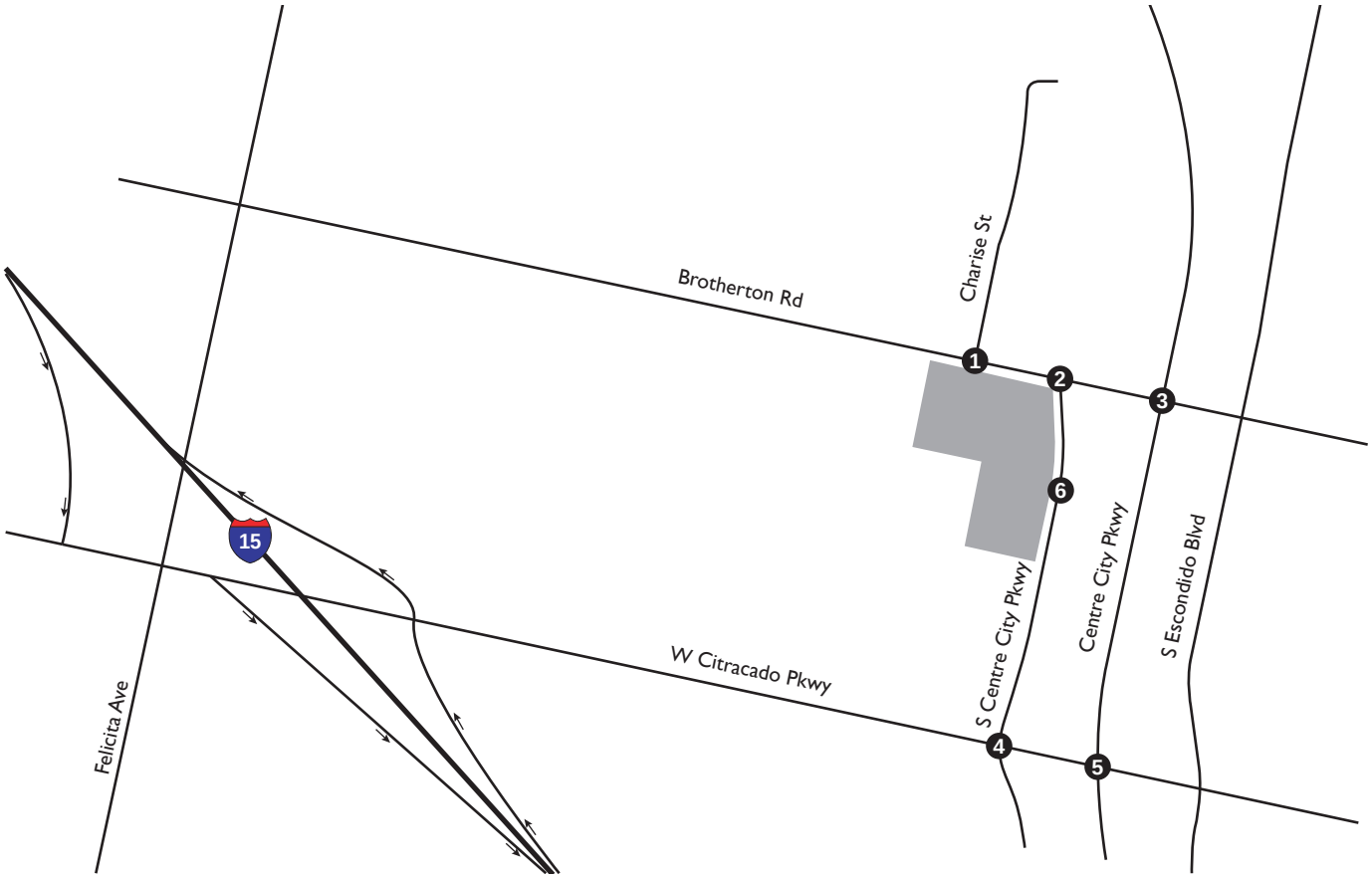
J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

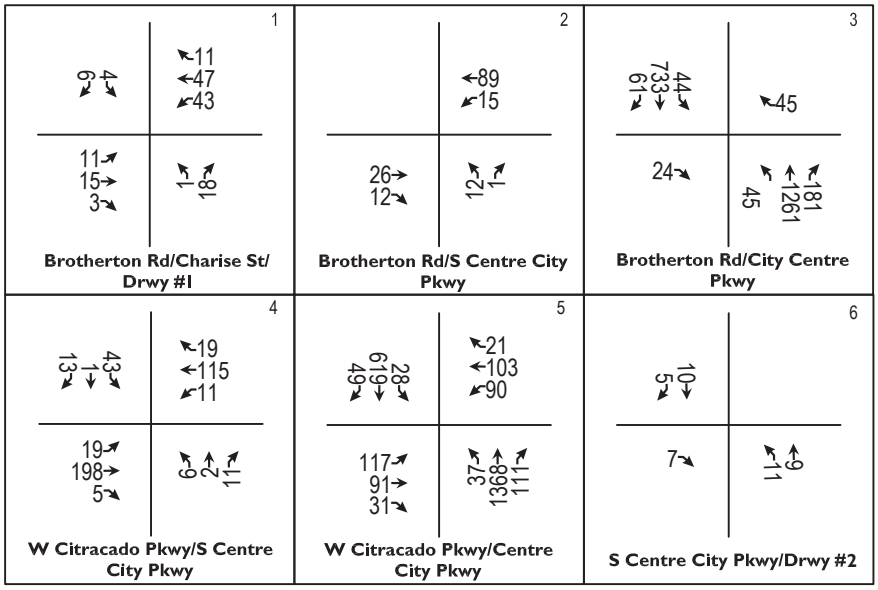




NOT TO SCALE

J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai





NOT TO SCALE

J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

CHAPTER 4
NEAR-TERM CONDITIONS

Near-term conditions represent opening day of the proposed project. Project traffic is added to the near-term base volumes to create the "with project" scenario.

NEAR-TERM TRAFFIC VOLUMES

Traffic growth on area roadways is a function of the expected land development, economic activity, and changes in demographics. Several methods can be used to estimate this growth. For the analysis of this study, trips from cumulative projects in the vicinity of the project area were added to the project intersections and segments. The cumulative projects were identified and provided by the City. Table 4-1 shows a list of specific cumulative projects and Appendix D contains the source information for the cumulative projects.

NEAR-TERM CIRCULATION NETWORK

No circulation network changes were assumed.

The effect of the proposed project on the study area circulation network was evaluated for the near-term conditions. Table 4-2 and 4-3 summarize the results of this analysis. Figures 4-1 through 4-6 show the near-term roadway segment and intersection without and with the proposed project. Additional details regarding specific intersection operating conditions can be found on the capacity analysis worksheets in Appendix F.

Table 4-1
Cumulative Projects

Project Name	Land Use	Quantity	Units
Oak Creek	Single-Family Detached	65	DU
Talk of the Town	Car Wash Oil Change Restaurant	1 2 4,156	Site Stall SF
Centre City Parkway	Multi-Family Apartments	76	DU
Amanda Lane	Residential - Estate	21	DU

Table 4-2
Near-Term Roadway Segment Conditions

Roadway Segment	Lanes/ Class	LOS E Capacity	Near Term Without Project			Project Traffic	Near Term With Project			Comparison	
			ADT	V/C	LOS		ADT	V/C	LOS	**Δ V/C**	Signi fican t?
S Centre City Pkwy											
From Brotherton Rd to Citracado Pkwy	2LC	10,000	639	0.064	A	430	1,069	0.107	A	0.043	No
Centre City Pkwy											
North of Brotherton Rd	4MA	37,000	24,253	0.655	C	272	24,525	0.663	C	0.007	No
From Brotherton Rd to Citracado Pkwy	4MA	37,000	25,310	0.684	C	428	25,738	0.696	C	0.012	No
South of Citracado Pkwy	4MA	37,000	25,223	0.682	C	406	25,629	0.693	C	0.011	No
Brotherton Rd											
From Charise St to S Centre City Pkwy	2LC	10,000	2,224	0.222	A	618	2,842	0.284	A	0.062	No
From S Centre City Pkwy to Centre City Pkwy	2LC	10,000	1,868	0.187	A	428	2,296	0.230	A	0.043	No
Citracado Pkwy/Gamble Ln											
From S Center City Pkwy To Centre City Pkwy	2LC	10,000	5,448	0.545	C	250	5,698	0.570	C	0.025	No

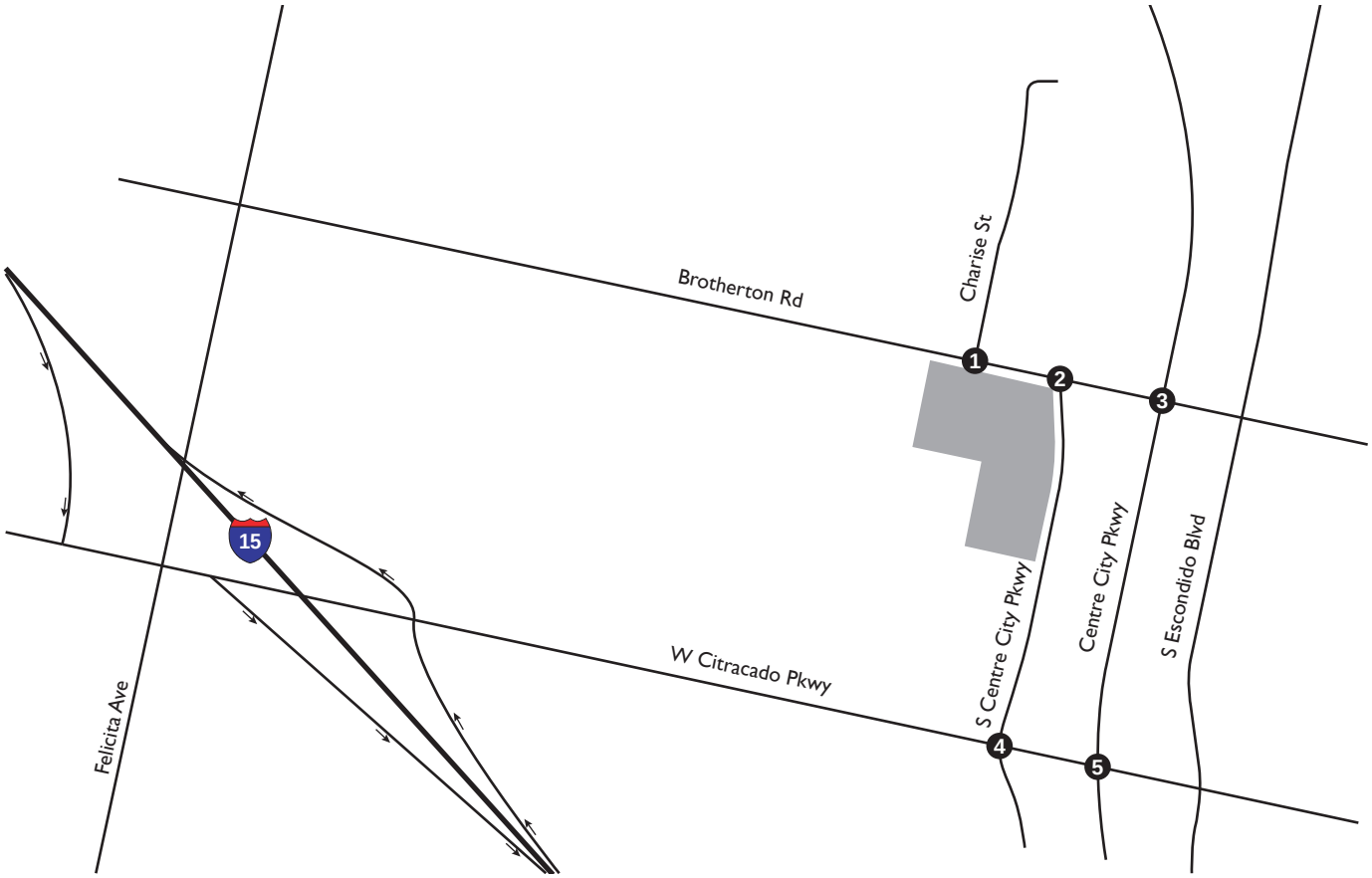
Abbreviations: 2LC: 2 Local Collector, 3C: 3 Lane Collector, 4C: 4 Lane Collector, 4MA: 4 Lane Major Arterial

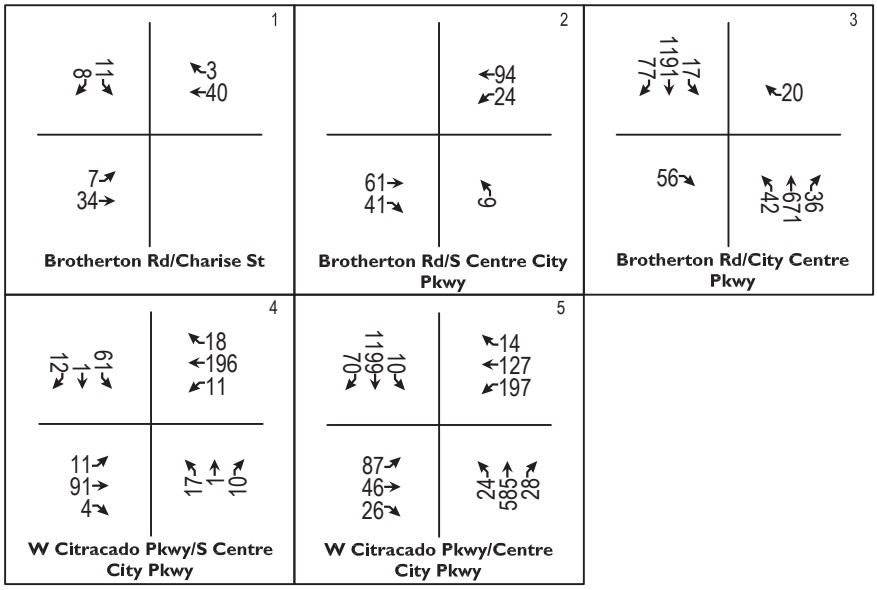
Table 4-3
Near-Term Intersection Conditions

Intersection	Near Term - W/O Project		Near Term – W/ Project		Δ Delay	Significant
	Delay	LOS	Delay	LOS		
AM Peak Hour						
1. Brotherton Rd & Charise St / Project Driveway # 1 [1]	8.9	A	9.3	A	0.4	No
2. Brotherton Rd & S. Centre City Pkwy [1]	10.1	B	10.4	B	0.3	No
3. Brotherton Rd & Centre City Pkwy [2]	14.7	B	15.2	C	0.5	No
4. W. Citracado Pkwy & S. Centre City Pkwy [1]	12.1	B	12.7	B	0.6	No
5. W. Citracado Pkwy & Centre City Pkwy [3]	11.3	B	15.0	B	3.7	No
6. S. Centre City Pkwy & Project Driveway #2 [1]			8.5	A	8.5	No
PM Peak Hour						
1. Brotherton Rd & Charise St / Project Driveway # 1 [1]	8.9	A	9.4	A	0.5	No
2. Brotherton Rd & S. Centre City Pkwy [1]	9.8	A	10.5	B	0.7	No
3. Brotherton Rd & Centre City Pkwy [2]	17.2	C	17.2	C	0.0	No
4. W. Citracado Pkwy & S. Centre City Pkwy [1]	13.0	B	13.8	B	0.8	No
5. W. Citracado Pkwy & Centre City Pkwy [3]	10.2	B	14.7	B	4.5	No
6. S. Centre City Pkwy & Project Driveway #2 [1]			8.4	A	8.4	No

[1] Side Street Stop Controlled
[2] All-Way Stop Controlled
[3] Signalized Intersection

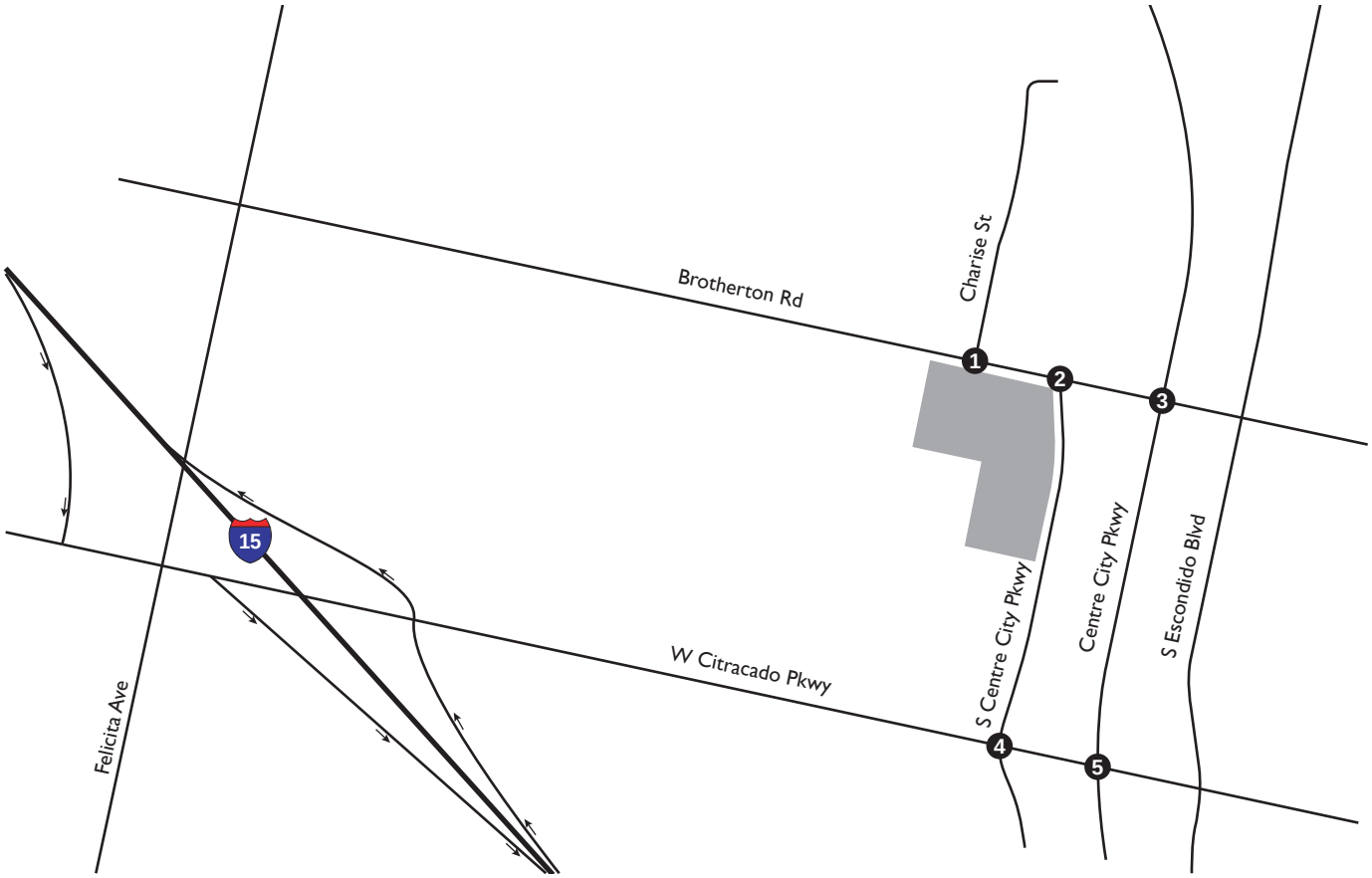
J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

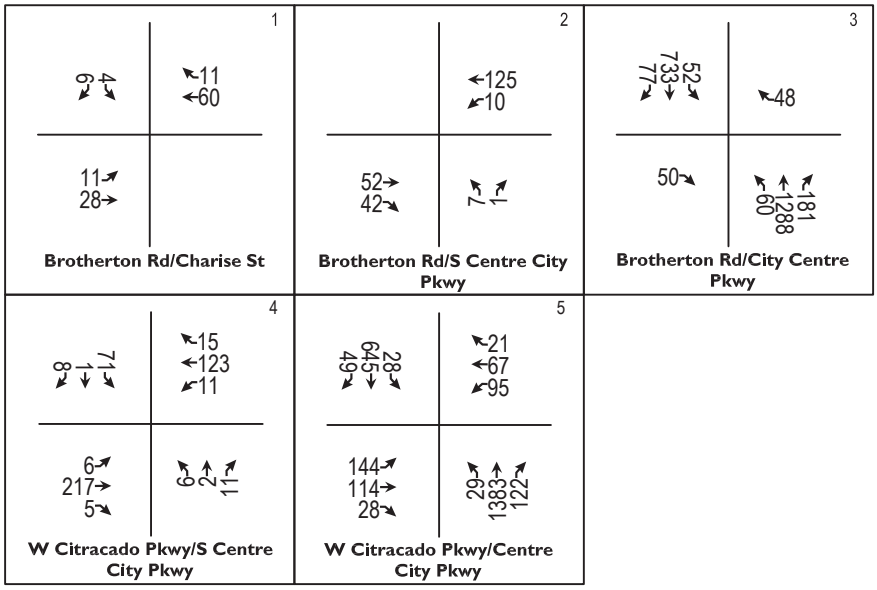




NOT TO SCALE

J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

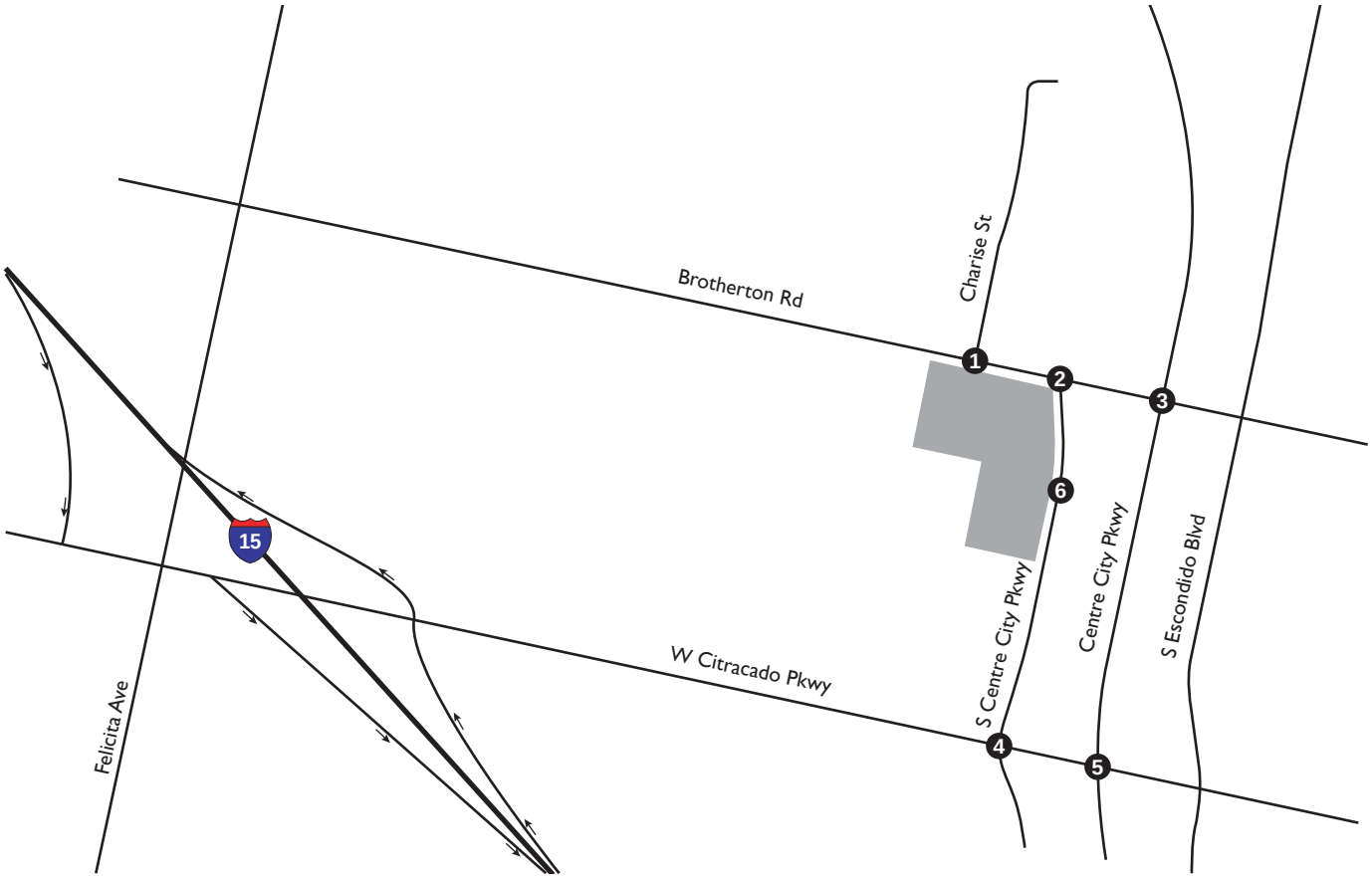


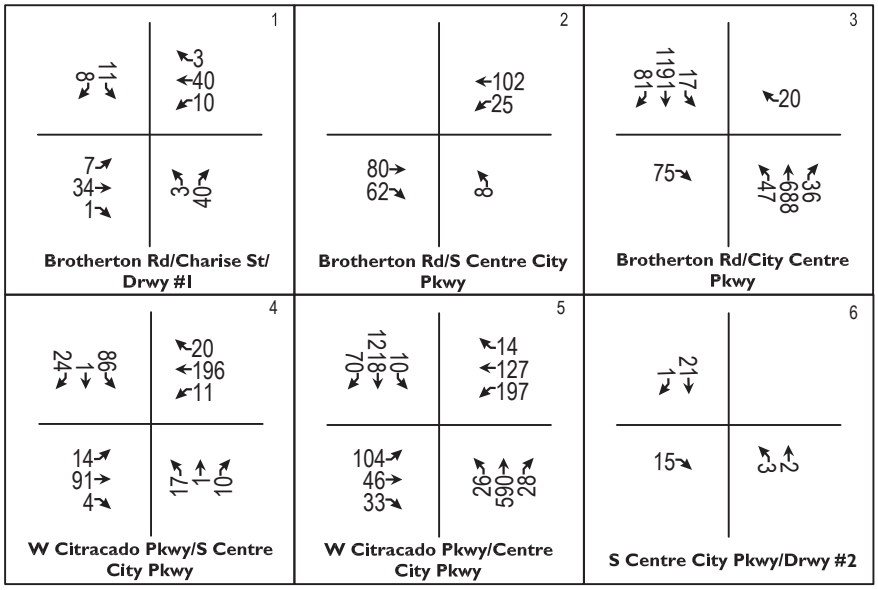


NOT TO SCALE

J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

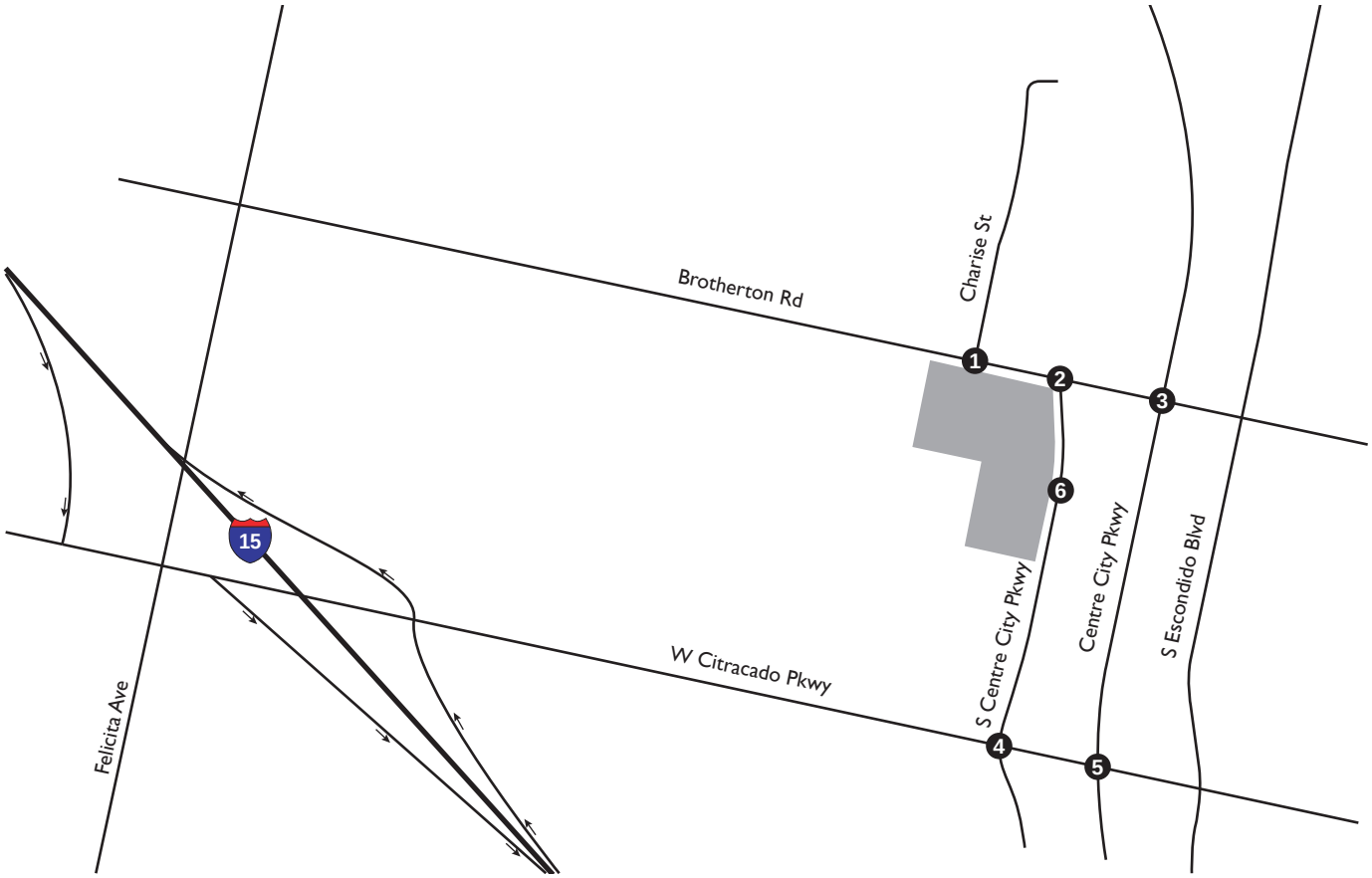
J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

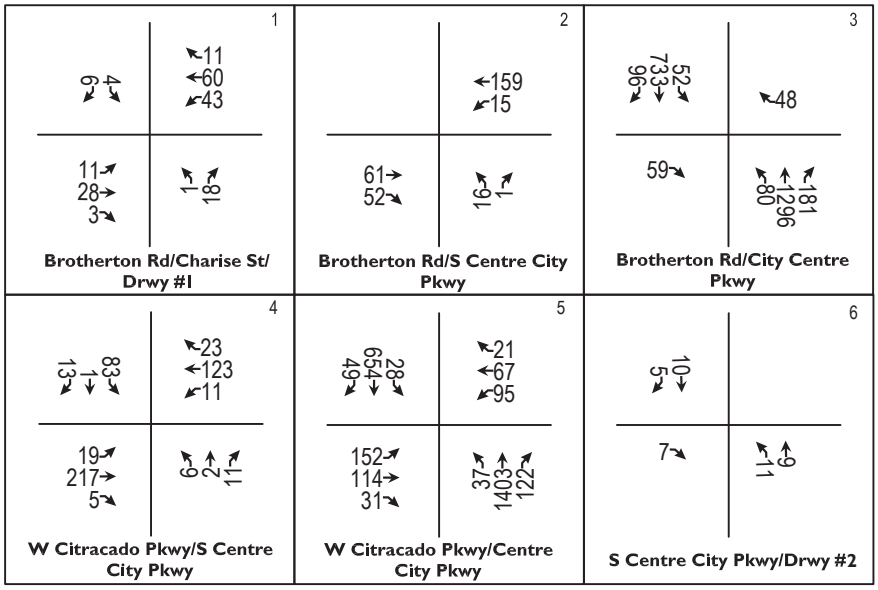




NOT TO SCALE

J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai





NOT TO SCALE

J:\KOA-SD\JB42056-Escondido_DelPrado/Figures/JB42056_Figures.ai

CHAPTER 5
ON-SITE CIRCULATION, PEDESTRIAN, TRANSIT, BICYCLE AND PARKING

ON-SITE CIRCULATION

The southern part of the project site, which consists of 32 dwelling units, has one driveway access on South Centre City Parkway. The northern part of the project site which consists of 81 dwelling units has one driveway access on Brotherton Road across from Charise Street. Altogether, the project has 113 dwelling units. Both driveways are two way driveways, and the internal streets leading to the driveways have sufficient storage space to hold peak hour traffic demand. The access streets leading to the driveways are connected with each other by internal circulation streets; however the north and south project sites do not have any internal circulation streets connecting them. The layout of the project is designed in such a way that all the dwelling units are conveniently located to access the driveways.

PEDESTRIAN

The project will provide internal walkways that connect the proposed land uses to pedestrian facilities within the public right-of-way. There is currently sidewalk on the west side of South Centre City Parkway adjacent to the project site. Sidewalk on the south side of Brotherton Road, which does not exist currently, will be built per City of Escondido Standards.

TRANSIT

The closest bus stop to the project site is located approximately one mile from the site at the Escondido Boulevard and Sunset Drive intersection. The bus stop is served by bus route 350, operated by the North County Transit District (NCTD), which connects the Del Lago Transit Station and the Escondido Transit Center. The bus has peak-hour headways of 15 minutes during the weekday and 30 minutes headways during the weekend.

The Escondido Transit Center, which is approximately 2.8 miles from the project site, has a park and ride facility. The transit center has transfer opportunities to other buses, Sprinter and Greyhound buses. The transit center has bus and train services that connect to other cities in San Diego County.

BICYCLE

Centre City Parkway has a class II bike path starting from Cranston Drive to the north city limits. There are no other dedicated bike facilities in the project study area.

PARKING

The project proposes parking for all the residents within the structures. Guest parking spaces are also included for guests of residents, per city requirements.

CHAPTER 6
SUMMARY OF ANALYSIS

This chapter summarizes the operations at the study intersections and segments. Table 6-1 shows the summary of roadway segment conditions for each scenario. Table 6-2 shows the summary of intersection conditions for each scenario.

Table 6-1
Summary of Roadway Segment Conditions

Roadway Segment	Existing Without Project		Existing With Project		Near-Term Without Project		Near-Term Without Project	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
S Centre City Pkwy								
From Brotherton Rd to Citracado Pkwy	0.021	A	0.064	A	0.064	A	0.107	A
Centre City Pkwy								
North of Brotherton Rd	0.634	C	0.641	C	0.655	C	0.663	C
From Brotherton Rd to Citracado Pkwy	0.656	C	0.668	C	0.684	C	0.696	C
South of Citracado Pkwy	0.659	C	0.670	C	0.682	C	0.693	C
Brotherton Rd								
From Charise St to S Centre City Pkwy	0.076	A	0.138	A	0.222	A	0.284	A
From S Centre City Pkwy to Centre City Pkwy	0.084	A	0.127	A	0.187	A	0.230	A
Citracado Pkwy/Gamble Ln								
From S Center City Pkwy To Centre City Pkwy	0.476	B	0.501	B	0.545	C	0.570	C

Table 6-2
Summary of Intersection Conditions before Mitigation

Intersection	Existing Conditions		Existing + Project		Near Term - W/O Project		Near Term – W/ Project	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
AM Peak Hour								
1. Brotherton Rd & Charise St / Project Driveway # 1 [1]	8.8	A	9.1	A	8.9	A	9.3	A
2. Brotherton Rd & S. Centre City Pkwy [1]	9.2	A	9.5	A	10.1	B	10.4	B
3. Brotherton Rd & Centre City Pkwy [2]	13.8	B	14.3	B	14.7	B	15.2	C
4. W. Citracado Pkwy & S. Centre City Pkwy [1]	10.9	B	11.4	B	12.1	B	12.7	B
5. W. Citracado Pkwy & Centre City Pkwy [3]	10.1	B	13.7	B	11.3	B	15.0	B
6. S. Centre City Pkwy & Project Driveway #2 [1]			8.5	A			8.5	A
PM Peak Hour								
1. Brotherton Rd & Charise St / Project Driveway # 1 [1]	8.8	A	9.2	A	8.9	A	9.4	A
2. Brotherton Rd & S. Centre City Pkwy [1]	8.9	A	9.5	A	9.8	A	10.5	B
3. Brotherton Rd & Centre City Pkwy [2]	16.7	C	16.8	C	17.2	C	17.2	C
4. W. Citracado Pkwy & S. Centre City Pkwy [1]	11.6	B	12.1	B	13.0	B	13.8	B
5. W. Citracado Pkwy & Centre City Pkwy [3]	9.8	A	14.2	B	10.2	B	14.7	B
6. S. Centre City Pkwy & Project Driveway #2 [1]			8.4	A			8.4	A

[1] Side Street Stop Controlled
[2] All-Way Stop Controlled
[3] Signalized Intersection

CHAPTER 7
RECOMMENDATIONS

Based on the preceding analysis of existing and near-term year traffic conditions for the proposed Del Prado project in the City of Escondido, the project has no impacts that require mitigation.

Prepared By:

Arnold Torma, P.E.
Senior Transportation Engineer

Ryan Whipple
Assistant Transportation Engineer

Anya Diamond
Assistant Transportation Planner

Balaji Shivaji
Assistant Transportation Engineer

APPENDIX A

LEVEL OF SERVICE CONCEPTS, ANALYSIS METHODOLOGIES, STANDARDS OF SIGNIFICANCE

Roadway Segment Level of Service Definitions

LOS	V/C	Congestion/Delay	Traffic Description
(Used for surface streets, freeways, expressways and conventional highways)			
"A"	≤0.41	None	Free flow.
"B"	>0.41-0.62	None	Free to stable flow, light to moderate volumes.
"C"	>0.62-0.80	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	>0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	>0.92-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
(Used for surface streets and conventional highways)			
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
(Used for freeways and expressways)			
"F(0)"	>1.00-1.25	Considerable 0-1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F(1)"	>1.25-1.35	Severe 1-2 hour delay	Very heavy congestion, very long queues.
"F(2)"	>1.35-1.45	Very Severe 2-3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F(3)"	>1.45	Extremely Severe 3+ hours of delay	Gridlock

Source: Caltrans, 1992.

LEVEL OF SERVICE (LOS) DEFINITIONS

The concept of LOS is defined as a qualitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. Levels of service for freeway segments can generally be categorized as shown in the table above.

Signalized Intersection Level of Service
Highway Capacity Manual Operational Analysis Method

The operational analysis method for evaluation of signalized intersections presented in the *2000 Highway Capacity Manual* (Transportation Research Board Special Report 209) defines level of service in terms of delay, or more specifically, control stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption, and lost travel time.

Control Stopped Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
<10	LOS A describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
>10 – 20	LOS B describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
>20 – 35	LOS C describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
>35 – 55	LOS D describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
>55 – 80	LOS E is considered to be the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80	LOS F describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: Highway Capacity Manual 2000, Exhibit 16-2

Minor Street Stop and All-Way Stop Controlled Intersection Level of Service
Highway Capacity Manual Operational Analysis Method

The Highway Capacity Manual (HCM) analysis method for evaluating minor street stop intersections is based on the average total delay for each impeded movement. For all-way stop controlled intersections it is based on the average total delay for the entire intersection. As used here, total delay is defined as the total elapsed time from when a when a vehicle stops at the end of a queue until the vehicle departs from the stop line; this time includes the time required for the vehicle to travel from the last-in-queue to the first-in-queue position. The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. The resulting delay is used to determine the level of service as shown in the following table.

Average Total Delay	Level of Service (LOS) Characteristics
0-10	*LOS A* – Little or no delay
>10 – 15	*LOS B* – Short traffic delay
>15 – 25	*LOS C* – Average traffic delay
>25 – 35	*LOS D* – Long traffic delays
>35 – 50	*LOS E* – Very long traffic delays
>50	*LOS F* – When the demand exceeds the capacity of the lane, extreme delays will be encountered and queuing may cause severe congestion to the intersection.

Source: Highway Capacity Manual 2000, Exhibit 17-22

ESCONDIDO
City of Choice

CITY OF ESCONDIDO
Traffic Impact Analysis Guideline

The City's General Plan (2012) established a goal of L.O.S. "C" for all City streets, however, due to overall citywide traffic conditions, L.O.S. "D" was considered acceptable. If the existing LOS is "D" or worse, preservation of the existing LOS must be maintained, or acceptable mitigation must be identified.
Currently the approved level-of-service standards for different street segments based on their classifications and ADT within the City of Escondido are as follows:

CITY OF ESCONDIDO PROPOSED LEVEL OF SERVICE STANDARDS
STREET SEGMENT AVERAGE DAILY VEHICLE TRIP THRESHOLDS

Street Classification	Lanes	Cross Sections	Level of Service				
			A	B	C	D	E
Prime Arterial	(8 lanes) (6 lanes)	116/136 (NP) 106/126 (NP)	23,800 20,400	37,800 32,400	51,800 44,400	62,300 53,400	70,000 60,000
Major Road	(6 lanes) (4 lanes)	90/110 (NP) 82/102 (NP)	17,000 12,600	27,000 20,000	37,000 27,400	44,500 32,900	50,000 37,000
Collector	(4 lanes) (4 lanes)	64/84 (NP) (WP)	11,600 6,800	18,500 10,800	25,300 14,800	30,400 17,800	34,200 20,000
Local Collector	(2 lanes)	42/66 (NP) (WP)	5,100 3,400	8,100 5,400	11,100 7,400	13,400 8900	15,000 10,000

NP: No Parking, WP: With Parking
The following V/C Ratios were utilized for determining Existing and Future Level of Service.

Level of Service	(V/C Ratio)
A - Less than or Equal to	0.00 to 0.34
B - Less than or Equal to	0.35 to 0.54
C - Less than or Equal to	0.55 to 0.74
D - Less than or Equal to	0.75 to 0.89
E - Less than or Equal to	0.90 to 1.00

For any development, passenger vehicle trips shall be estimated using the rates and methodologies outlined in "Trip Generation Rates for San Diego Region", latest edition, published by SANDAG (if rates not available, ITE rates shall be used). Since based on the adopted 2013 General Plan of the City of Escondido, the goal Level-Of-Service is C, a Traffic Impact Analysis (TIA) must be prepared for any project that generates and adds more than 2% of the ADT for LOS C to any street segment within the preliminary study area identified by the City staff. Based on the above mentioned threshold, the following table contains the trigger-points for Traffic Impact Analysis within the City of Escondido for different street classifications.

PROPOSED A.D.T. THRESHOLDS FOR ROADWAY SEGMENTS TO
TRIGGER TRAFFIC IMPACT ANALYSIS FOR NEW DEVELOPMENTS

Street Classification	Lanes	Cross Sections (ft.)	TIA Trigger-Points (ADT generation)
Prime Arterial	(8 lanes) (6 lanes)	116/136 (NP) 106/126 (NP)	900 800
Major Road	(6 lanes) (4 lanes)	90/110 (NP) 82/102 (NP)	700 500
Collector	(4 lanes) (4 lanes)	64/84 (NP) (WP)	500 250
Local Collector and other	(2 lanes) (2 lanes)	42/66 (NP) (WP)	200

A Traffic Impact Analysis should be undertaken for any type of development that generates daily trips more than the above mentioned trigger-points. Certain types of projects which generate less than 500 ADTs may be considered by the City staff for a TIA waiver only where the affected segments and intersections operate at LOS C or better. On the contrary, City staff may require a TIA for any kind of development if the possible traffic impact of the project is believed to be considerable. The study area would be identified based on the fact that any complete transportation impact analysis should include at least all site access points and major intersections (signalized and un-signalized) adjacent to the site in the study area. Below are the proposed trigger-points to identify if an intersection should be included in the TIA or not:

PROPOSED A.D.T. THRESHOLDS FOR INTERSECTIONS TO BE INCLUDED IN THE TRAFFIC IMPACT ANALYSIS

Intersection Classification (Minor leg of the intersection)	**TIA Trigger-Points (AM or PM peak hour trips added to any leg)**
Prime Arterial	50
Major Road	40
Collector	30
Local Collector	20

* 2% of A.D.T. for LOS "C" has been used as a guide to calculate the trigger-point values
* Study area can be expanded by City Engineer

Certain types of developments that their traffic impact is found to be significant need to identify measures to mitigate the traffic impact. In accordance with "SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region", the following thresholds shall be used to identify if a project is of significance traffic impact under any scenario. Based on SANTEC/ITE guidelines, if now or in the future, the project's traffic impact causes the values in the table below to be exceeded in a roadway segment or an intersection that is operating at a LOS D or worse, it is determined to be a significant project and it shall identify mitigation measures. Below are the proposed thresholds for determining significant traffic impacts to a roadway segment or an intersection.

CITY OF ESCONDIDO PROPOSED THRESHOLDS TO IDENTIFY PROJECTS SIGNIFICANT TRAFFIC IMPACT

Level of Service With Project	**Allowable Change due to Project Impact**		
	Roadway Segments		**Intersections**
	V/C	**Speed Reduction(mph)**	**Delay (sec.)**
D, E or F	0.02	1	2

* No Significant Impact occurs at areas in GP Downtown Specific Area that operates on LOS "D" or better
* Mitigation measures should also be considered for any segment or intersection operating on LOS "F" subject to less than significant impact.
* V: Volume C: Capacity (use LOS "E")

APPENDIX B

TRAFFIC COUNT DATA

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

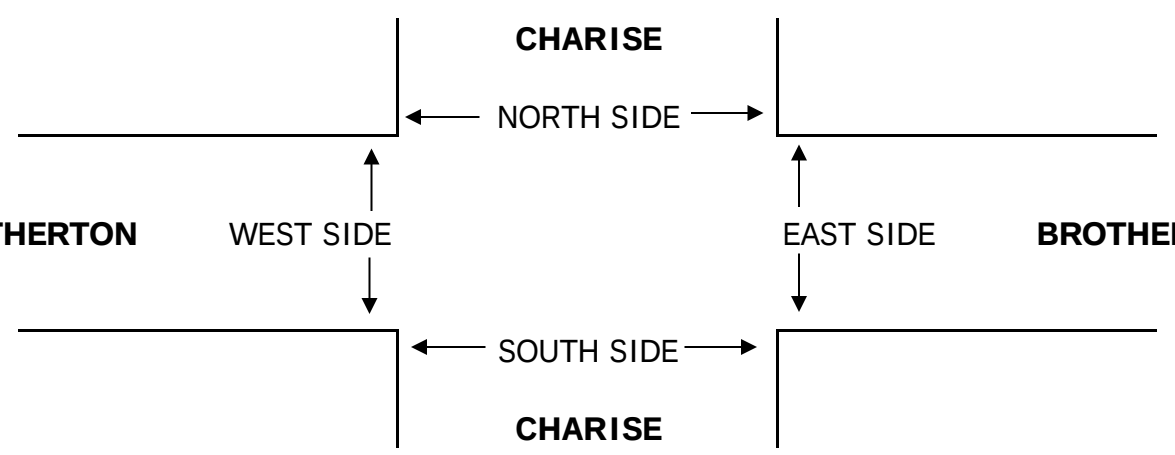
DATE:	LOCATION:	ESCONDIDO	PROJECT #:	PTD14-0905-02
9/3/14	NORTH & SOUTH:	CHARISE	LOCATION #:	1
WEDNESDAY	EAST & WEST:	BROTHERTON	CONTROL:	1-WAY STOP (SB)

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND CHARISE			SOUTHBOUND CHARISE			EASTBOUND BROTHERTON			WESTBOUND BROTHERTON				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0.5	ST X	SR 0.5	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM				0		0	0	2			7	0	9					0
	7:15 AM				1		0	0	3			6	1	11					0
	7:30 AM				0		3	1	4			13	1	22					0
	7:45 AM				3		3	2	5			6	1	20					0
	8:00 AM				4		1	4	6			4	1	20					0
	8:15 AM				4		1	0	6			4	0	15					0
	8:30 AM				0		0	0	0			6	1	7					0
	8:45 AM				5		1	1	4			6	1	18					0
	VOLUMES	0	0	0	17	0	9	8	30	0	0	52	6	122	0	0	0	0	0
	APPROACH %	0%	0%	0%	65%	0%	35%	21%	79%	0%	0%	90%	10%						
	APP/DEPART	0	/	14	26	/	0	38	/	47	58	/	61	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	0	0	11	0	8	7	21	0	0	27	3	77					
	APPROACH %	0%	0%	0%	58%	0%	42%	25%	75%	0%	0%	90%	10%						
	PEAK HR FACTOR		0.000			0.792			0.700			0.536		0.875					
	APP/DEPART	0	/	10	19	/	0	28	/	32	30	/	35	0					
PM	4:00 PM				2		0	4	2			10	1	19					0
	4:15 PM				1		2	1	6			5	1	16					0
	4:30 PM				1		1	2	2			9	2	17					0
	4:45 PM				0		0	1	2			8	2	13					0
	5:00 PM				0		3	4	4			13	2	26					0
	5:15 PM				1		2	3	2			16	3	27					0
	5:30 PM				3		1	1	6			12	1	24					0
	5:45 PM				0		0	3	3			6	5	17					0
	VOLUMES	0	0	0	8	0	9	19	27	0	0	79	17	159	0	0	0	0	0
	APPROACH %	0%	0%	0%	47%	0%	53%	41%	59%	0%	0%	82%	18%						
	APP/DEPART	0	/	36	17	/	0	46	/	35	96	/	88	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	0	0	4	0	6	11	15	0	0	47	11	94					
	APPROACH %	0%	0%	0%	40%	0%	60%	42%	58%	0%	0%	81%	19%						
	PEAK HR FACTOR		0.000			0.625			0.813			0.763		0.870					
	APP/DEPART	0	/	22	10	/	0	26	/	19	58	/	53	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

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

DATE: 9/3/14 WEDNESDAY

LOCATION: ESCONDIDO
NORTH & SOUTH: SOUTH CENTRE CITY PKWY
EAST & WEST: BROTHERTON

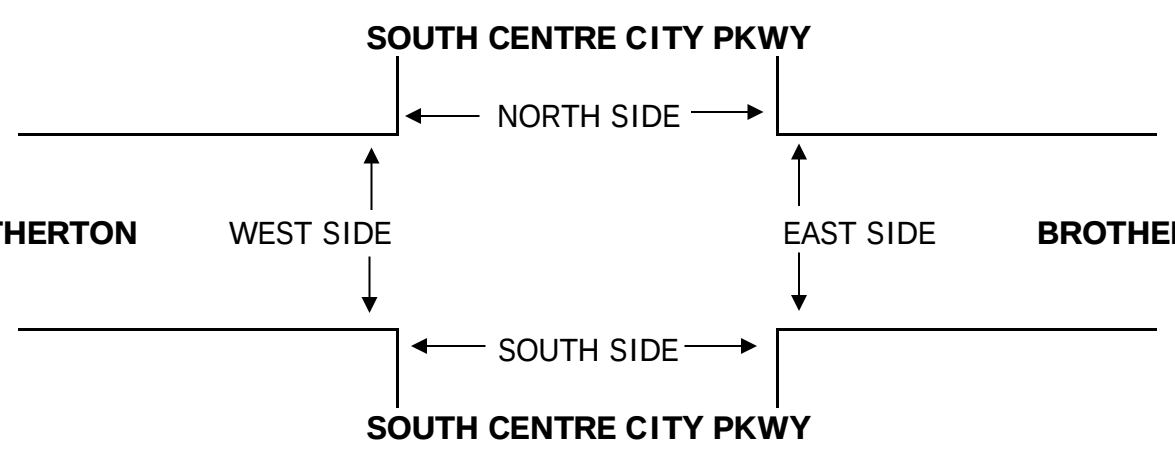
PROJECT #: PTD14-0905-02
LOCATION #: 2
CONTROL: 1-WAY STOP (NB)

NOTES:

AM PM MD OTHER OTHER

▲ N
◄ W E ►
S ▼

		NORTHBOUND SOUTH CENTRE CITY PKWY			SOUTHBOUND SOUTH CENTRE CITY PKWY			EASTBOUND BROTHERTON			WESTBOUND BROTHERTON				U-TURNS				
	LANES:	NL 0.5	NT X	NR 0.5	SL X	ST X	SR X	EL X	ET 1	ER 0	WL 0	WT 1	WR X	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	0		0					2	1	2	7		12					0
	7:15 AM	0		0					2	3	0	8		13					0
	7:30 AM	1		0					3	0	6	13		23					0
	7:45 AM	1		0					8	0	5	5		19					0
	8:00 AM	0		0					8	2	9	5		24					0
	8:15 AM	0		0					8	1	4	4		17					0
	8:30 AM	0		0					0	0	4	7		11					0
	8:45 AM	0		0					5	4	4	8		21					0
	VOLUMES	2	0	0	0	0	0	0	36	11	34	57	0	140	0	0	0	0	0
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	77%	23%	37%	63%	0%						
	APP/DEPART	2	/	0	0	/	45	47	/	36	91	/	59	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	2	0	0	0	0	0	0	27	3	24	27	0	83					
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	90%	10%	47%	53%	0%						
	PEAK HR FACTOR		0.500			0.000			0.750			0.671		0.865					
	APP/DEPART	2	/	0	0	/	27	30	/	27	51	/	29	0					
PM	4:00 PM	3		1					4	0	4	8		20					0
	4:15 PM	0		0					4	2	2	7		15					0
	4:30 PM	1		0					3	1	0	9		14					0
	4:45 PM	1		0					2	1	4	9		17					0
	5:00 PM	2		0					4	0	3	13		22					0
	5:15 PM	0		0					3	1	2	18		24					0
	5:30 PM	0		0					8	0	3	14		25					0
	5:45 PM	1		1					2	1	2	10		17					0
	VOLUMES	8	0	2	0	0	0	0	30	6	20	88	0	154	0	0	0	0	0
	APPROACH %	80%	0%	20%	0%	0%	0%	0%	83%	17%	19%	81%	0%						
	APP/DEPART	10	/	0	0	/	26	36	/	32	108	/	96	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	3	0	1	0	0	0	0	17	2	10	55	0	88					
	APPROACH %	75%	0%	25%	0%	0%	0%	0%	89%	11%	15%	85%	0%						
	PEAK HR FACTOR		0.500			0.000			0.594			0.813		0.880					
	APP/DEPART	4	/	0	0	/	12	19	/	18	65	/	58	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

INTERSECTION TURNING MOVEMENT COUNTS

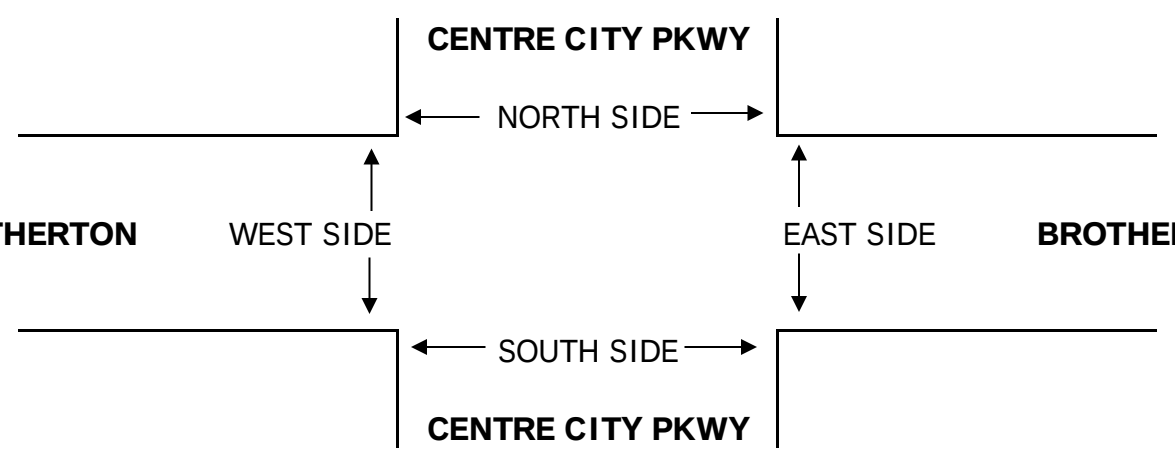
PREPARED BY: PACIFIC TECHNICAL DATA

DATE:	LOCATION:	ESCONDIDO	PROJECT #:	PTD14-0905-02
9/3/14	NORTH & SOUTH:	CENTRE CITY PKWY	LOCATION #:	3
WEDNESDAY	EAST & WEST:	BROTHERTON	CONTROL:	2-WAY STOP (EW)

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND CENTRE CITY PKWY			SOUTHBOUND CENTRE CITY PKWY			EASTBOUND BROTHERTON			WESTBOUND BROTHERTON				U-TURNS				
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL X	ET X	ER 1	WL X	WT X	WR 1	TOTAL	NB X	SB X	EB X	WB X	TTL
AM																		
7:00 AM	4	89	2	9	315	6			2			3	430					0
7:15 AM	3	151	9	2	338	5			2			2	512					0
7:30 AM	4	148	10	5	320	15			4			6	512					0
7:45 AM	0	161	9	4	255	10			8			2	449					0
8:00 AM	1	177	8	4	278	13			8			2	491					0
8:15 AM	2	168	9	11	262	5			8			1	466					0
8:30 AM	3	160	4	5	221	8			0			4	405					0
8:45 AM	4	158	5	4	161	8			5			3	348					0
VOLUMES	21	1,212	56	44	2,150	70	0	0	37	0	0	23	3,613	0	0	0	0	0
APPROACH %	2%	94%	4%	2%	95%	3%	0%	0%	100%	0%	0%	100%						
APP/DEPART	1,289	/	1,235	2,264	/	2,187	37	/	100	23	/	91	0					
BEGIN PEAK HR		7:15 AM																
VOLUMES	8	637	36	15	1,191	43	0	0	22	0	0	12	1,964					
APPROACH %	1%	94%	5%	1%	95%	3%	0%	0%	100%	0%	0%	100%						
PEAK HR FACTOR		0.915			0.905			0.688			0.500		0.959					
APP/DEPART	681	/	649	1,249	/	1,213	22	/	51	12	/	51	0					
PM																		
4:00 PM	6	250	31	4	151	6			4			8	460					0
4:15 PM	3	213	34	10	188	6			4			7	465					0
4:30 PM	5	238	23	8	170	4			3			2	453					0
4:45 PM	4	268	47	13	168	9			3			10	522					0
5:00 PM	5	331	44	10	215	11			1			8	625					0
5:15 PM	9	318	50	11	180	12			5			15	600					0
5:30 PM	7	336	40	10	170	10			6			12	591					0
5:45 PM	5	284	42	8	134	7			4			9	493					0
VOLUMES	44	2,238	311	74	1,376	65	0	0	30	0	0	71	4,209	0	0	0	0	0
APPROACH %	2%	86%	12%	5%	91%	4%	0%	0%	100%	0%	0%	100%						
APP/DEPART	2,593	/	2,309	1,515	/	1,406	30	/	385	71	/	109	0					
BEGIN PEAK HR		4:45 PM																
VOLUMES	25	1,253	181	44	733	42	0	0	15	0	0	45	2,338					
APPROACH %	2%	86%	12%	5%	89%	5%	0%	0%	100%	0%	0%	100%						
PEAK HR FACTOR		0.952			0.868			0.625			0.750		0.935					
APP/DEPART	1,459	/	1,298	819	/	748	15	/	225	45	/	67	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

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

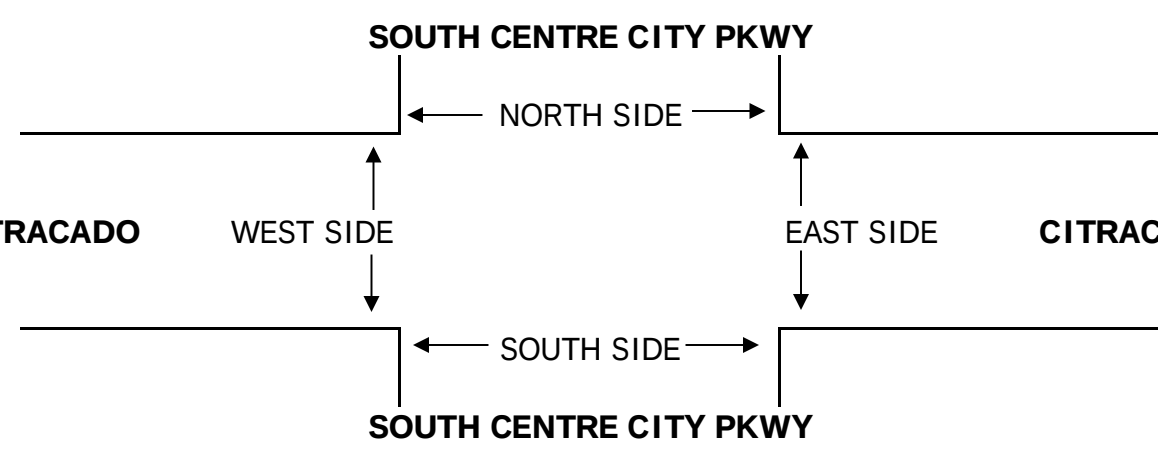
DATE:	LOCATION:	ESCONDIDO	PROJECT #:	PTD14-0905-02
9/3/14	NORTH & SOUTH:	SOUTH CENTRE CITY PKWY	LOCATION #:	4
WEDNESDAY	EAST & WEST:	CITRACADO	CONTROL:	2-WAY STOP (NS)

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND SOUTH CENTRE CITY PKWY			SOUTHBOUND SOUTH CENTRE CITY PKWY			EASTBOUND CITRACADO			WESTBOUND CITRACADO				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	6	0	3	4	0	2	1	18	0	1	40	2	77					0
7:15 AM	2	0	2	5	0	3	2	17	0	1	51	2	85					0
7:30 AM	9	0	4	4	0	4	2	21	1	2	50	5	102					0
7:45 AM	4	1	2	7	1	3	3	29	2	5	35	3	95					0
8:00 AM	2	0	2	7	0	2	4	19	1	3	40	4	84					0
8:15 AM	0	0	2	7	0	0	0	18	1	2	36	0	66					0
8:30 AM	1	0	0	5	0	0	2	23	0	1	27	4	63					0
8:45 AM	2	0	2	3	0	1	2	15	1	2	28	2	58					0
VOLUMES	26	1	17	42	1	15	16	160	6	17	307	22	630	0	0	0	0	0
APPROACH %	59%	2%	39%	72%	2%	26%	9%	88%	3%	5%	89%	6%						
APP/DEPART	44	/	39	58	/	24	182	/	219	346	/	348	0					
BEGIN PEAK HR		7:15 AM																
VOLUMES	17	1	10	23	1	12	11	86	4	11	176	14	366					
APPROACH %	61%	4%	36%	64%	3%	33%	11%	85%	4%	5%	88%	7%						
PEAK HR FACTOR		0.538			0.818			0.743			0.882		0.897					
APP/DEPART	28	/	26	36	/	16	101	/	119	201	/	205	0					
PM																		
4:00 PM	2	1	5	4	0	0	3	48	1	1	32	3	100					0
4:15 PM	0	0	2	6	0	0	2	41	1	3	29	1	85					0
4:30 PM	1	0	3	4	0	1	2	39	3	2	28	1	84					0
4:45 PM	3	0	3	5	1	2	2	47	3	1	22	4	93					0
5:00 PM	1	0	2	11	0	2	2	52	0	4	29	2	105					0
5:15 PM	2	1	4	7	0	2	2	50	0	1	28	1	98					0
5:30 PM	0	1	2	8	0	2	0	49	2	5	36	4	109					0
5:45 PM	0	0	2	7	1	2	2	36	0	1	17	2	70					0
VOLUMES	9	3	23	52	2	11	15	362	10	18	221	18	744	0	0	0	0	0
APPROACH %	26%	9%	66%	80%	3%	17%	4%	94%	3%	7%	86%	7%						
APP/DEPART	35	/	36	65	/	30	387	/	437	257	/	241	0					
BEGIN PEAK HR		4:45 PM																
VOLUMES	6	2	11	31	1	8	6	198	5	11	115	11	405					
APPROACH %	32%	11%	58%	78%	3%	20%	3%	95%	2%	8%	84%	8%						
PEAK HR FACTOR		0.679			0.769			0.968			0.761		0.929					
APP/DEPART	19	/	19	40	/	17	209	/	240	137	/	129	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

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

DATE:	LOCATION:	ESCONDIDO	PROJECT #:	PTD14-0905-02
9/3/14	NORTH & SOUTH:	CENTRE CITY PKWY	LOCATION #:	5
WEDNESDAY	EAST & WEST:	CITRACADO	CONTROL:	SIGNAL

NOTES:

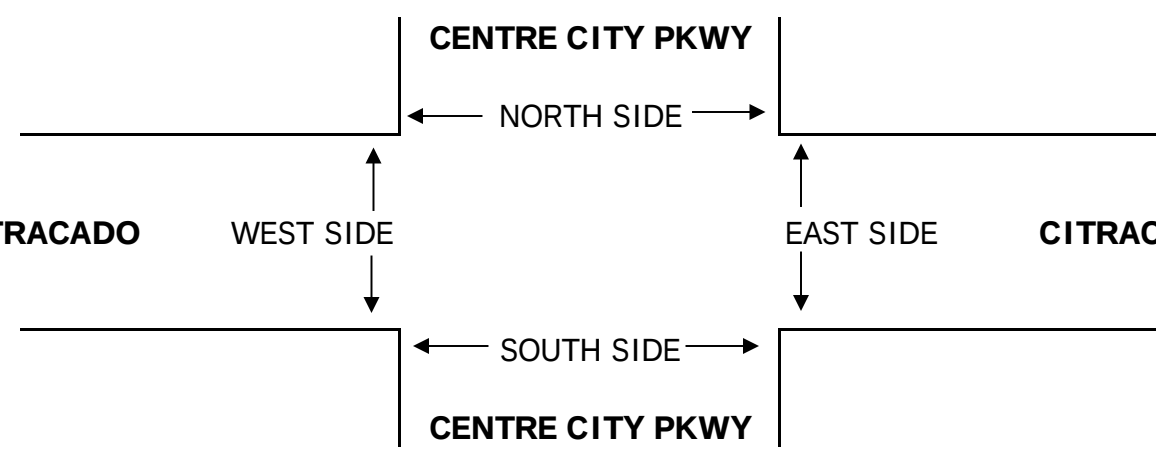
AM / PM / MD / OTHER / OTHER

▲ N

◄ W E ►

S ▼

		NORTHBOUND CENTRE CITY PKWY			SOUTHBOUND CENTRE CITY PKWY			EASTBOUND CITRACADO			WESTBOUND CITRACADO				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	5	113	5	4	335	12	9	8	6	54	28	4	583					0
	7:15 AM	8	148	5	0	294	23	7	13	5	41	21	3	568					0
	7:30 AM	7	133	9	2	290	19	17	9	4	44	31	3	568					0
	7:45 AM	4	157	6	4	246	16	20	7	11	46	23	4	544					0
	8:00 AM	5	138	9	1	258	22	19	8	3	55	18	3	539		1			1
	8:15 AM	5	145	7	2	269	18	16	6	4	37	17	2	528					0
	8:30 AM	4	157	5	1	206	10	14	11	2	31	15	5	461					0
	8:45 AM	4	156	5	5	137	16	12	6	3	33	13	2	392					0
	VOLUMES	42	1,147	51	19	2,035	136	114	68	38	341	166	26	4,183	0	1	0	0	1
	APPROACH %	3%	93%	4%	1%	93%	6%	52%	31%	17%	64%	31%	5%						
	APP/DEPART	1,240	/	1,287	2,190	/	2,414	220	/	138	533	/	344	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	24	551	25	10	1,165	70	53	37	26	185	103	14	2,263					
	APPROACH %	4%	92%	4%	1%	94%	6%	46%	32%	22%	61%	34%	5%						
	PEAK HR FACTOR		0.898			0.887			0.763			0.878		0.970					
	APP/DEPART	600	/	618	1,245	/	1,376	116	/	72	302	/	197	0					
PM	4:00 PM	3	257	9	6	133	8	28	28	3	27	24	5	531					0
	4:15 PM	3	213	6	10	161	14	25	20	3	29	16	6	506					0
	4:30 PM	1	216	14	6	179	15	23	20	5	29	15	5	528		1			1
	4:45 PM	6	287	16	4	143	12	22	25	6	27	9	2	559					0
	5:00 PM	9	340	23	8	178	15	38	17	11	20	11	9	679	1				1
	5:15 PM	6	328	33	9	152	13	22	30	8	22	13	5	641	1				1
	5:30 PM	11	358	22	3	159	16	34	20	6	25	18	0	672	1	1			2
	5:45 PM	3	322	33	8	121	5	15	24	3	23	13	7	577		1			1
	VOLUMES	42	2,321	156	54	1,226	98	207	184	45	202	119	39	4,693	3	3	0	0	6
	APPROACH %	2%	92%	6%	4%	89%	7%	47%	42%	10%	56%	33%	11%						
	APP/DEPART	2,519	/	2,567	1,378	/	1,473	436	/	394	360	/	259	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	29	1,348	111	28	610	49	109	91	28	90	55	21	2,569					
	APPROACH %	2%	91%	7%	4%	89%	7%	48%	40%	12%	54%	33%	13%						
	PEAK HR FACTOR		0.951			0.854			0.864			0.965		0.946					
	APP/DEPART	1,488	/	1,478	687	/	728	228	/	230	166	/	133	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

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

S. CENTRE CITY PKWY BTN BROTHERTON & CITRACADO

AM Period	NB		SB		EB	WB	PM Period	NB		SB		EB	WB	
00:00	0		0				12:00	0		0				
00:15	0		0				12:15	0		0				
00:30	0		0				12:30	0		1				
00:45	0	0	0	0			12:45	3	3	2	3			6
01:00	0		0				13:00	1		0				
01:15	0		0				13:15	0		1				
01:30	0		0				13:30	1		1				
01:45	0	0	0	0			13:45	1	3	1	3			6
02:00	0		0				14:00	1		4				
02:15	0		0				14:15	2		0				
02:30	0		0				14:30	2		1				
02:45	0	0	0	0			14:45	2	7	5	10			17
03:00	0		0				15:00	0		1				
03:15	0		0				15:15	0		1				
03:30	0		0				15:30	3		1				
03:45	0	0	0	0			15:45	0	3	3	6			9
04:00	0		0				16:00	4		4				
04:15	0		0				16:15	0		4				
04:30	0		0				16:30	1		1				
04:45	0	0	0	0			16:45	1	6	6	15			21
05:00	0		0				17:00	3		2				
05:15	0		1				17:15	0		2				
05:30	1		0				17:30	0		4				
05:45	0	1	0	1		2	17:45	2	5	3	11			16
06:00	1		1				18:00	0		1				
06:15	0		0				18:15	1		2				
06:30	0		3				18:30	0		1				
06:45	1	2	8	12		14	18:45	1	2	4	8			10
07:00	0		3				19:00	0		3				
07:15	0		4				19:15	0		3				
07:30	1		5				19:30	0		0				
07:45	1	2	6	18		20	19:45	0	0	0	6			6
08:00	0		11				20:00	1		0				
08:15	0		5				20:15	5		1				
08:30	1		4				20:30	1		1				
08:45	0	1	8	28		29	20:45	0	7	0	2			9
09:00	0		5				21:00	0		0				
09:15	0		2				21:15	0		1				
09:30	2		1				21:30	1		0				
09:45	1	3	4	12		15	21:45	0	1	0	1			2
10:00	1		1				22:00	0		0				
10:15	0		2				22:15	0		0				
10:30	0		2				22:30	0		0				
10:45	1	2	2	7		9	22:45	0	0	0	0			
11:00	0		2				23:00	0		0				
11:15	3		2				23:15	1		1				
11:30	0		5				23:30	0		0				
11:45	1	4	3	12		16	23:45	0	1	0	1			2
Total Vol.		15		90		**105**			38		66			**104**

Daily Totals

NB	SB	EB	WB	**Combined**
53	156			**209**

	AM			**PM**		
Split %	14.3%	85.7%	**50.2%**	36.5%	63.5%	**49.8%**
Peak Hour	09:15	08:00	**07:30**	14:00	16:00	**16:00**
Volume	4	28	**29**	7	15	**21**
P.H.F.	0.50	0.64	**0.66**	0.88	0.63	**0.66**

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

CENTRE CITY PKWY N-O BROTHERTON

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	18		10					12:00	188		151				
00:15	26		9					12:15	170		161				
00:30	20		5					12:30	161		152				
00:45	15	79	5	29			108	12:45	184	703	144	608			1311
01:00	13		3					13:00	175		128				
01:15	14		2					13:15	141		168				
01:30	10		4					13:30	162		154				
01:45	12	49	8	17			66	13:45	195	673	162	612			1285
02:00	7		4					14:00	184		155				
02:15	8		4					14:15	190		160				
02:30	9		1					14:30	212		152				
02:45	10	34	4	13			47	14:45	241	827	177	644			1471
03:00	5		5					15:00	252		162				
03:15	4		4					15:15	268		148				
03:30	3		10					15:30	284		177				
03:45	4	16	8	27			43	15:45	312	1116	178	665			1781
04:00	2		12					16:00	262		178				
04:15	8		13					16:15	235		212				
04:30	10		41					16:30	248		180				
04:45	18	38	50	116			154	16:45	295	1040	179	749			1789
05:00	20		55					17:00	332		242				
05:15	19		101					17:15	342		213				
05:30	20		122					17:30	352		188				
05:45	35	94	161	439			533	17:45	280	1306	156	799			2105
06:00	44		175					18:00	300		151				
06:15	51		230					18:15	305		142				
06:30	60		298					18:30	278		132				
06:45	89	244	357	1060			1304	18:45	277	1160	121	546			1706
07:00	90		326					19:00	212		101				
07:15	161		355					19:15	180		90				
07:30	155		362					19:30	141		84				
07:45	172	578	251	1294			1872	19:45	132	665	99	374			1039
08:00	188		288					20:00	128		91				
08:15	152		275					20:15	122		75				
08:30	166		235					20:30	101		84				
08:45	148	654	184	982			1636	20:45	111	462	66	316			778
09:00	151		158					21:00	90		66				
09:15	121		161					21:15	88		50				
09:30	123		141					21:30	91		41				
09:45	162	557	158	618			1175	21:45	70	339	32	189			528
10:00	135		131					22:00	95		33				
10:15	128		135					22:15	88		41				
10:30	121		139					22:30	40		30				
10:45	118	502	128	533			1035	22:45	38	261	28	132			393
11:00	135		127					23:00	41		20				
11:15	144		141					23:15	33		19				
11:30	128		152					23:30	31		20				
11:45	151	558	131	551			1109	23:45	20	125	11	70			195
Total Vol.		3403		5679			**9082**			8677		5704			**14381**

Daily Totals

NB	SB	EB	WB	**Combined**
12080	11383			**23463**

	AM			PM		
Split %	37.5%	62.5%	**38.7%**	60.3%	39.7%	**61.3%**
Peak Hour	07:45	06:45	**07:15**	16:45	16:45	**16:45**
Volume	678	1400	**1932**	1321	822	**2143**
P.H.F.	0.90	0.97	**0.93**	0.96	0.85	**0.93**

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

CENTRE CITY PKWY BTN BROTHERTON & CITRACADO

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	29		11					12:00	173		140				
00:15	23		8					12:15	190		153				
00:30	19		3					12:30	174		146				
00:45	15	86	7	29			115	12:45	195	732	146	585			1317
01:00	17		4					13:00	171		135				
01:15	13		4					13:15	165		152				
01:30	8		8					13:30	169		157				
01:45	18	56	9	25			81	13:45	205	710	160	604			1314
02:00	8		6					14:00	206		146				
02:15	11		6					14:15	199		158				
02:30	10		2					14:30	232		187				
02:45	7	36	6	20			56	14:45	265	902	150	641			1543
03:00	4		6					15:00	286		148				
03:15	4		5					15:15	297		161				
03:30	6		15					15:30	280		185				
03:45	5	19	14	40			59	15:45	331	1194	166	660			1854
04:00	3		10					16:00	294		151				
04:15	12		18					16:15	253		195				
04:30	13		49					16:30	248		216				
04:45	14	42	55	132			174	16:45	315	1110	161	723			1833
05:00	16		69					17:00	386		184				
05:15	18		103					17:15	362		177				
05:30	16		136					17:30	395		182				
05:45	42	92	170	478			570	17:45	341	1484	142	685			2169
06:00	40		175					18:00	318		148				
06:15	49		230					18:15	310		132				
06:30	66		298					18:30	298		129				
06:45	96	251	357	1060			1311	18:45	278	1204	114	523			1727
07:00	131		341					19:00	189		106				
07:15	148		321					19:15	195		103				
07:30	156		315					19:30	133		120				
07:45	177	612	252	1229			1841	19:45	146	663	103	432			1095
08:00	172		295					20:00	149		76				
08:15	168		298					20:15	137		82				
08:30	184		221					20:30	116		79				
08:45	164	688	162	976			1664	20:45	105	507	71	308			815
09:00	149		156					21:00	113		65				
09:15	135		156					21:15	89		76				
09:30	127		159					21:30	107		55				
09:45	148	559	168	639			1198	21:45	83	392	37	233			625
10:00	144		142					22:00	92		42				
10:15	135		149					22:15	59		48				
10:30	132		139					22:30	58		31				
10:45	134	545	143	573			1118	22:45	62	271	20	141			412
11:00	148		143					23:00	48		29				
11:15	143		146					23:15	48		22				
11:30	142		134					23:30	24		14				
11:45	161	594	138	561			1155	23:45	37	157	12	77			234
Total Vol.		3580		5762			**9342**			9326		5612			**14938**

Daily Totals

NB	SB	EB	WB	**Combined**
12906	11374			**24280**

	AM			**PM**		
Split %	38.3%	61.7%	**38.5%**	62.4%	37.6%	**61.5%**
Peak Hour	07:45	06:45	**06:45**	17:00	16:15	**17:00**
Volume	701	1334	**1865**	1484	756	**2169**
P.H.F.	0.95	0.93	**0.99**	0.97	0.88	**0.94**

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

CENTRE CITY PKWY S-O CITRACADO

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	32		8					12:00	166		136				
00:15	21		8					12:15	170		149				
00:30	22		4					12:30	173		146				
00:45	9	84	6	26			110	12:45	172	681	150	581			1262
01:00	14		5					13:00	148		137				
01:15	13		4					13:15	158		145				
01:30	9		9					13:30	162		163				
01:45	14	50	9	27			77	13:45	187	655	160	605			1260
02:00	8		4					14:00	204		144				
02:15	10		4					14:15	187		163				
02:30	11		2					14:30	226		190				
02:45	6	35	4	14			49	14:45	258	875	158	655			1530
03:00	6		6					15:00	277		150				
03:15	3		5					15:15	288		170				
03:30	6		14					15:30	285		188				
03:45	4	19	18	43			62	15:45	315	1165	161	669			1834
04:00	5		10					16:00	270		177				
04:15	11		20					16:15	231		181				
04:30	13		50					16:30	233		215				
04:45	13	42	53	133			175	16:45	315	1049	188	761			1810
05:00	20		72					17:00	362		221				
05:15	15		96					17:15	370		168				
05:30	25		143					17:30	384		212				
05:45	40	100	175	486			586	17:45	341	1457	158	759			2216
06:00	36		184					18:00	336		167				
06:15	44		242					18:15	313		139				
06:30	67		319					18:30	286		132				
06:45	90	237	410	1155			1392	18:45	262	1197	122	560			1757
07:00	128		384					19:00	187		104				
07:15	168		362					19:15	186		112				
07:30	151		342					19:30	126		119				
07:45	160	607	313	1401			2008	19:45	140	639	110	445			1084
08:00	142		312					20:00	145		83				
08:15	168		303					20:15	123		85				
08:30	162		231					20:30	114		75				
08:45	170	642	189	1035			1677	20:45	94	476	75	318			794
09:00	132		152					21:00	115		60				
09:15	122		162					21:15	97		80				
09:30	124		172					21:30	94		59				
09:45	139	517	175	661			1178	21:45	76	382	44	243			625
10:00	117		153					22:00	94		49				
10:15	133		170					22:15	63		62				
10:30	122		145					22:30	61		32				
10:45	110	482	152	620			1102	22:45	64	282	23	166			448
11:00	126		137					23:00	50		28				
11:15	126		159					23:15	43		23				
11:30	132		132					23:30	27		13				
11:45	149	533	146	574			1107	23:45	35	155	16	80			235
Total Vol.		3348		6175			**9523**			9013		5842			**14855**

Daily Totals

NB	SB	EB	WB	**Combined**
12361	12017			**24378**

	AM			**PM**		
Split %	35.2%	64.8%	**39.1%**	60.7%	39.3%	**60.9%**
Peak Hour	11:45	06:45	**06:45**	17:00	16:15	**16:45**
Volume	658	1498	**2035**	1457	805	**2220**
P.H.F.	0.95	0.91	**0.96**	0.98	0.91	**0.93**

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

BROTHERTON BTN CHARISE & S. CENTRE CITY PKWY

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		1			12:00			1		5		
00:15			0		2			12:15			2		4		
00:30			0		3			12:30			1		4		
00:45			0	0	0	6	6	12:45			2	6	6	19	25
01:00			1		0			13:00			4		9		
01:15			0		0			13:15			7		8		
01:30			0		0			13:30			8		10		
01:45			0	1	0	0	1	13:45			2	21	10	37	58
02:00			0		0			14:00			2		11		
02:15			0		0			14:15			5		8		
02:30			0		0			14:30			3		9		
02:45			0	0	0	0		14:45			1	11	5	33	44
03:00			0		0			15:00			4		13		
03:15			0		0			15:15			1		7		
03:30			0		0			15:30			1		8		
03:45			1	1	0	0	1	15:45			2	8	9	37	45
04:00			1		0			16:00			5		12		
04:15			1		0			16:15			6		8		
04:30			3		0			16:30			4		10		
04:45			4	9	0	0	9	16:45			3	18	11	41	59
05:00			1		0			17:00			4		14		
05:15			3		2			17:15			4		17		
05:30			3		2			17:30			9		15		
05:45			4	11	4	8	19	17:45			2	19	11	57	76
06:00			2		5			18:00			3		8		
06:15			5		1			18:15			3		13		
06:30			5		3			18:30			3		12		
06:45			6	18	4	13	31	18:45			2	11	9	42	53
07:00			4		8			19:00			0		13		
07:15			6		8			19:15			2		8		
07:30			3		13			19:30			1		4		
07:45			8	21	5	34	55	19:45			2	5	9	34	39
08:00			11		7			20:00			3		13		
08:15			8		4			20:15			2		10		
08:30			0		7			20:30			5		3		
08:45			8	27	8	26	53	20:45			0	10	4	30	40
09:00			5		4			21:00			3		5		
09:15			2		7			21:15			0		8		
09:30			1		7			21:30			1		3		
09:45			5	13	2	20	33	21:45			1	5	5	21	26
10:00			2		3			22:00			2		1		
10:15			4		5			22:15			0		2		
10:30			0		7			22:30			0		2		
10:45			2	8	2	17	25	22:45			0	2	4	9	11
11:00			2		8			23:00			2		2		
11:15			5		14			23:15			0		0		
11:30			4		4			23:30			0		4		
11:45			2	13	6	32	45	23:45			1	3	1	7	10
Total Vol.				122		156	**278**					119		367	**486**

Daily Totals

NB	SB	EB	WB	**Combined**
		241	523	**764**

	AM			**PM**		
Split %	43.9%	56.1%	**36.4%**	24.5%	75.5%	**63.6%**
Peak Hour	07:30	07:00	**07:15**	12:45	16:45	**16:45**
Volume	30	34	**61**	21	57	**77**
P.H.F.	0.68	0.65	**0.85**	0.66	0.84	**0.80**

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

F. BROTHERTON BTN S. CENTRE CITY PKWY & CENTRE CITY

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		1			12:00			1		5		
00:15			0		2			12:15			5		4		
00:30			0		3			12:30			9		3		
00:45			0	0	0	6	6	12:45			5	20	8	20	40
01:00			1		0			13:00			7		13		
01:15			0		0			13:15			9		8		
01:30			0		0			13:30			5		8		
01:45			0	1	0	0	1	13:45			2	23	9	38	61
02:00			0		0			14:00			2		13		
02:15			0		0			14:15			5		9		
02:30			0		0			14:30			3		7		
02:45			0	0	0	0		14:45			1	11	5	34	45
03:00			0		0			15:00			8		13		
03:15			0		0			15:15			3		8		
03:30			0		0			15:30			2		8		
03:45			1	1	0	0	1	15:45			5	18	6	35	53
04:00			1		0			16:00			5		12		
04:15			2		0			16:15			4		9		
04:30			4		0			16:30			4		8		
04:45			3	10	0	0	10	16:45			2	15	11	40	55
05:00			1		0			17:00			4		18		
05:15			3		2			17:15			4		20		
05:30			2		1			17:30			8		15		
05:45			4	10	4	7	17	17:45			2	18	12	65	83
06:00			0		4			18:00			2		9		
06:15			5		1			18:15			3		13		
06:30			10		4			18:30			9		12		
06:45			7	22	7	16	38	18:45			1	15	9	43	58
07:00			2		9			19:00			1		13		
07:15			2		8			19:15			2		9		
07:30			4		18			19:30			1		3		
07:45			7	15	11	46	61	19:45			4	8	9	34	42
08:00			8		15			20:00			5		12		
08:15			8		8			20:15			1		9		
08:30			0		10			20:30			5		3		
08:45			5	21	12	45	66	20:45			0	11	4	28	39
09:00			7		7			21:00			3		4		
09:15			0		7			21:15			0		7		
09:30			3		5			21:30			1		3		
09:45			5	15	5	24	39	21:45			0	4	4	18	22
10:00			2		3			22:00			1		1		
10:15			5		6			22:15			0		2		
10:30			4		8			22:30			0		2		
10:45			3	14	2	19	33	22:45			0	1	4	9	10
11:00			2		8			23:00			1		2		
11:15			8		11			23:15			0		0		
11:30			5		4			23:30			0		4		
11:45			5	20	7	30	50	23:45			0	1	1	7	8
Total Vol.				129		193	**322**					145		371	**516**

Daily Totals

NB	SB	EB	WB	Combined
		274	564	**838**

	AM			PM		
Split %	40.1%	59.9%	**38.4%**	28.1%	71.9%	**61.6%**
Peak Hour	07:30	07:15	**07:30**	12:30	17:00	**17:00**
Volume	27	52	**79**	30	65	**83**
P.H.F.	0.84	0.72	**0.86**	0.83	0.81	**0.86**

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

CITRACADO BTN S. CENTRE CITY PKWY & CENTRE CITY

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			3		11			12:00			45		36		
00:15			2		0			12:15			51		57		
00:30			4		1			12:30			52		48		
00:45			2	11	4	16	27	12:45			40	188	31	172	360
01:00			3		1			13:00			46		45		
01:15			1		3			13:15			49		42		
01:30			1		1			13:30			53		43		
01:45			1	6	1	6	12	13:45			41	189	55	185	374
02:00			0		0			14:00			30		40		
02:15			1		1			14:15			32		45		
02:30			0		0			14:30			44		52		
02:45			2	3	4	5	8	14:45			50	156	49	186	342
03:00			0		1			15:00			45		48		
03:15			2		2			15:15			50		35		
03:30			0		3			15:30			48		35		
03:45			1	3	0	6	9	15:45			64	207	67	185	392
04:00			0		3			16:00			59		38		
04:15			0		2			16:15			48		31		
04:30			1		4			16:30			38		30		
04:45			7	8	11	20	28	16:45			50	195	28	127	322
05:00			1		4			17:00			60		33		
05:15			8		5			17:15			66		31		
05:30			9		13			17:30			65		48		
05:45			9	27	24	46	73	17:45			42	233	27	139	372
06:00			11		16			18:00			47		38		
06:15			14		22			18:15			66		31		
06:30			18		30			18:30			46		30		
06:45			19	62	40	108	170	18:45			25	184	37	136	320
07:00			31		51			19:00			26		32		
07:15			25		55			19:15			25		23		
07:30			26		60			19:30			38		26		
07:45			38	120	41	207	327	19:45			25	114	17	98	212
08:00			25		44			20:00			28		20		
08:15			33		39			20:15			30		30		
08:30			26		33			20:30			17		21		
08:45			21	105	31	147	252	20:45			21	96	16	87	183
09:00			18		35			21:00			18		32		
09:15			20		26			21:15			20		21		
09:30			15		40			21:30			16		11		
09:45			19	72	30	131	203	21:45			11	65	9	73	138
10:00			22		34			22:00			13		12		
10:15			35		32			22:15			6		5		
10:30			32		27			22:30			11		9		
10:45			28	117	41	134	251	22:45			6	36	6	32	68
11:00			23		38			23:00			4		7		
11:15			29		46			23:15			2		2		
11:30			42		37			23:30			8		6		
11:45			24	118	42	163	281	23:45			0	14	5	20	34
Total Vol.				652		989	**1641**					1677		1440	**3117**

Daily Totals

NB	SB	EB	WB	Combined
		2329	2429	**4758**

	AM			PM		
Split %	39.7%	60.3%	**34.5%**	53.8%	46.2%	**65.5%**
Peak Hour	11:45	07:00	**11:45**	16:45	14:15	**15:15**
Volume	172	207	**355**	241	194	**396**
P.H.F.	0.83	0.86	**0.82**	0.91	0.93	**0.76**

APPENDIX C

TRIP GENERATION

Land Use	Intensity	Unit	Daily Rate	Daily Trips		AM Peak Hour			PM Peak Hour		
						Total	In	Out	Total	In	Out
Condominium (6-20 DU/AC)	113	DU	8 trips Per DU	904	Rate	0.08	20%	80%	0.1	70%	30%
					Trips	72	14	58	90	63	27

Source (Trip Rate): SANDAG (not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002).
Note: Numbers may not total due to rounding.

APPENDIX D

CUMULATIVE PROJECT INFORMATION

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The following is a discussion of the Project trip generation calculations and the Project traffic distribution and assignment through the local network.

7.1 Trip Generation

The Project proposes to develop21 single-family estate style homes on an 11.2-acre property.

The Project traffic generation calculations were conducted using the trip generation rates published in the SANDAG's *"Not so Brief Guide of Vehicular Traffic Generation Rates for San Diego Region" (April 2002).* Based on the type and density of homes proposed by the Project, SANDAG specifies a trip rate of 12.0/ unit.

Table 7–1 shows a summary of the Project traffic generation. As tabulated the Project is calculated to generate 250 daily trips with 20 trips (6 inbound/14 outbound) in AM peak hour and 25 trips (18 inbound/7 outbound) during PM peak hour.

TABLE 7–1
PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour				PM Peak Hour			
		Rate [a]	Volume	% of ADT	In:Out Split	Volume In	Volume Out	% of ADT	In:Out Split	Volume In	Volume Out
Residential - Estate	21 DU	12.0 / DU	250	8%	30:70	6	14	10%	70:30	18	7

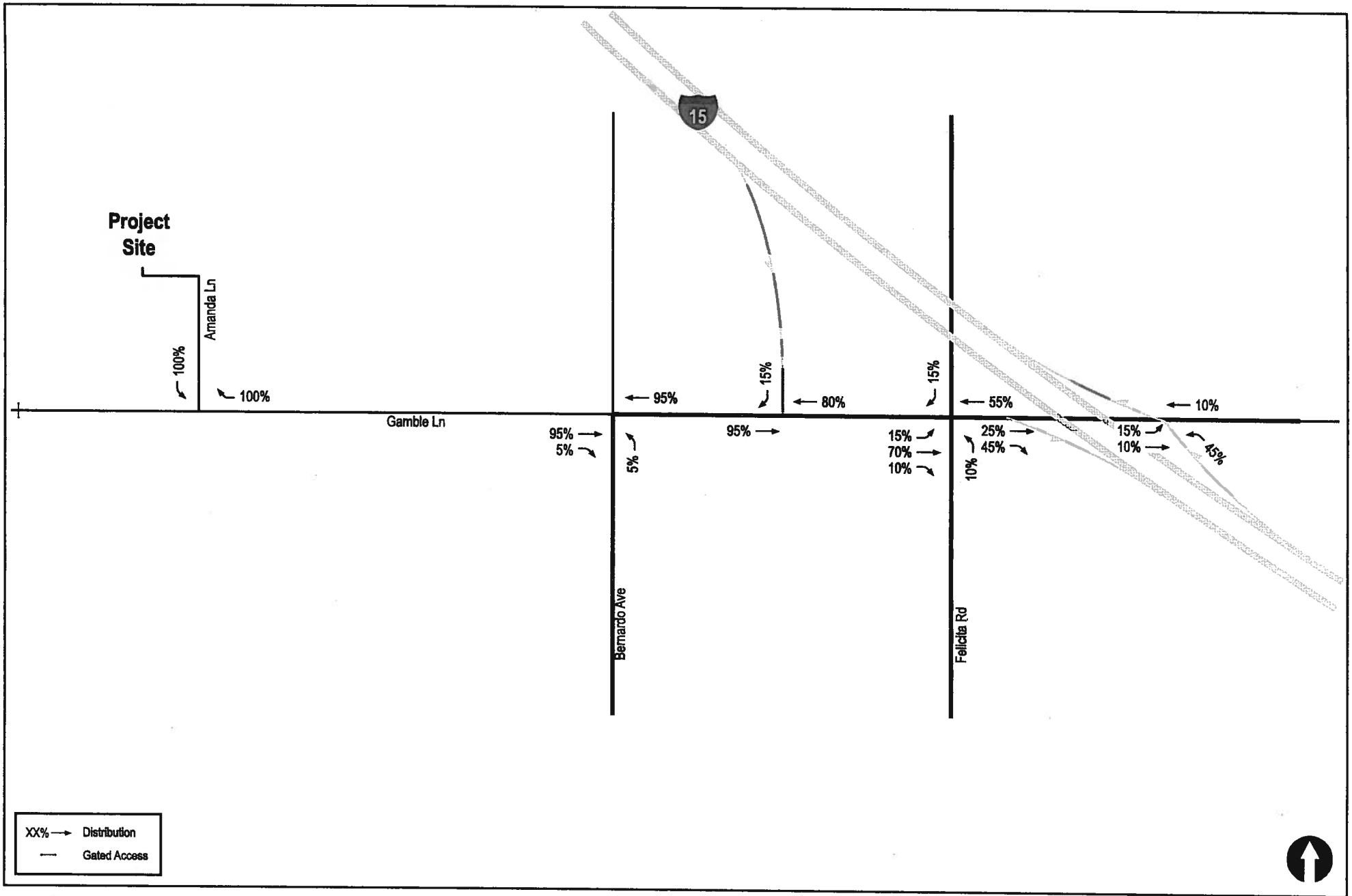
Footnotes:

a. Rate is based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

7.2 Trip Distribution/Assignment

The Project traffic was distributed to the local street system based on the roadway network, the location of employment centers, commercial areas, local schools, and existing peak hour traffic volumes.

Figure 7–1 shows the Project trip distribution percentages. ***Figure 7–2*** shows the AM/PM peak hour Project traffic volumes. ***Figure 7–3*** shows Existing + Project traffic volumes.



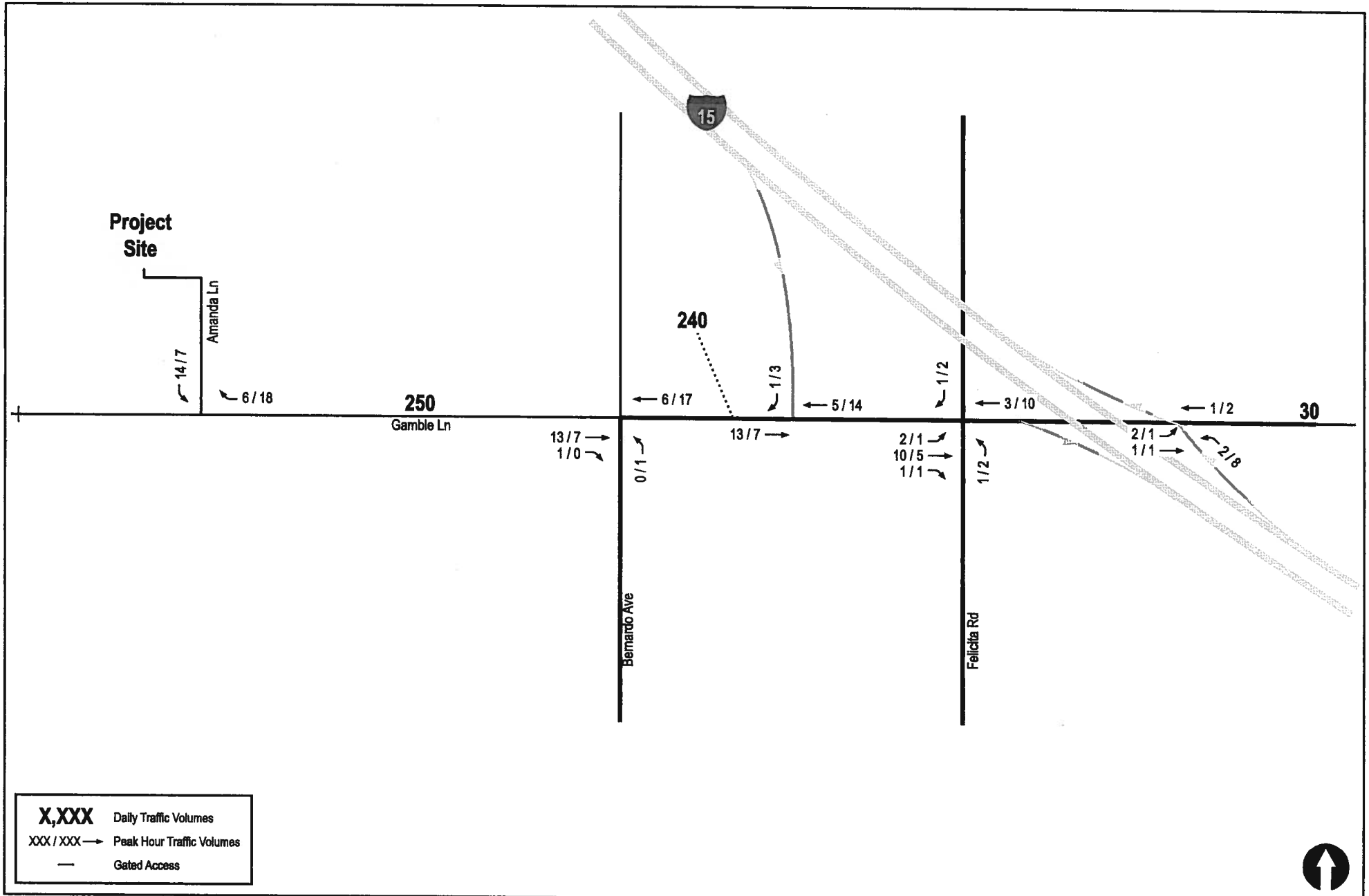
N:\2241\Figures
Date: 6/21/13

LINSCOTT LAW & GREENSPAN engineers

Figure 7-1

Project Traffic Distribution

AMANDA LANE PROJECT



N:\2241\Figures
Date: 6/21/13

LINSCOTT LAW & GREENSPAN engineers

Figure 7-2

Project Traffic Volumes

AMANDA LANE PROJECT

LINSCOTT LAW & GREENSPAN engineers

TABLE 4
PROJECT TRIP GENERATION SUMMARY

Land Use	Quantity	Daily Trip Ends (ADT)		AM Peak Hour					PM Peak Hour				
		Rate	Volume	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Proposed Project													
Car Wash	1 Site	900 / Site	900	4%	5:5	18	18	36	9%	5:5	41	40	81
Oil Change	2 Stall	40 /Stall	80	7%	6:4	3	3	6	11%	5:5	5	4	9
Restaurant	4,156 SF	160 /KSF	665	8%	5:5	27	26	53	8%	6:4	27	22	53
Total Trips			**1,645**			**48**	**47**	**95**			**73**	**66**	**139**
Pass By													
Restaurant (Daily and AM: 10% and PM Peak hour: 20%)			66			3	3	6			5	4	9
Subtotal Primary Trips			**1,579**			**45**	**44**	**89**			**68**	**62**	**130**
Fast Food Alternative													
Fast Food Restaurant	6,000 SF	700 /KSF	4,200	5%	6:4	105	105	210	7%	5:5	147	147	294
Pass By													
Restaurant (Daily and AM: 20% and PM Peak hour: 40%)			(-) 840			(-) 21	(-) 21	(-) 42			(-) 59	(-) 59	(-) 118
Subtotal Primary Trips			**3,360**			**84**	**84**	**168**			**88**	**88**	**176**
Difference			**1,781**			**39**	**40**	**79**			**20**	**26**	**46**

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The following is a discussion of the project trip generation calculations and the project traffic distribution and assignment through the local network.

7.1 Trip Generation

The project proposes to develop 65 single-family estate style homes on an 41.4-acre property. Homes will be constructed to City of Escondido R-E-40 (Residential Estates- 40,000 SF minimum lot size) and R-E-20 (Residential Estates- 20,000 SF minimum lot size) zoning standards.

The project traffic generation calculations were conducted using the trip generation rates published in the SANDAG's *"Not so Brief Guide of Vehicular Traffic Generation Rates for San Diego Region" (April 2002).* Based on the type and density of homes proposed by the project, SANDAG specifies a trip rate of 12.0/ unit.

Table 7–1 shows a summary of the project traffic generation. As tabulated the proposed project is calculated to generate 780 daily trips with 62 trips (19 inbound/43 outbound) in AM peak hour and 78 trips (55 inbound/23 outbound) during PM peak hour.

TABLE 7–1
PROJECT TRIP GENERATION

Land Use	Size [a]	Daily Trip Ends (ADTs)		AM Peak Hour				PM Peak Hour			
		Rate [b]	Volume	% of ADT	In:Out Split	Volume In	Volume Out	% of ADT	In:Out Split	Volume In	Volume Out
Residential - Estate	65 DU	12.0 /DU	780	8%	30:70	19	43	10%	70:30	55	23

Footnotes:

a. The project as currently proposed is 65 units. The capacity analyses in this report are based on the original proposal of 66 units, and are therefore conservative.

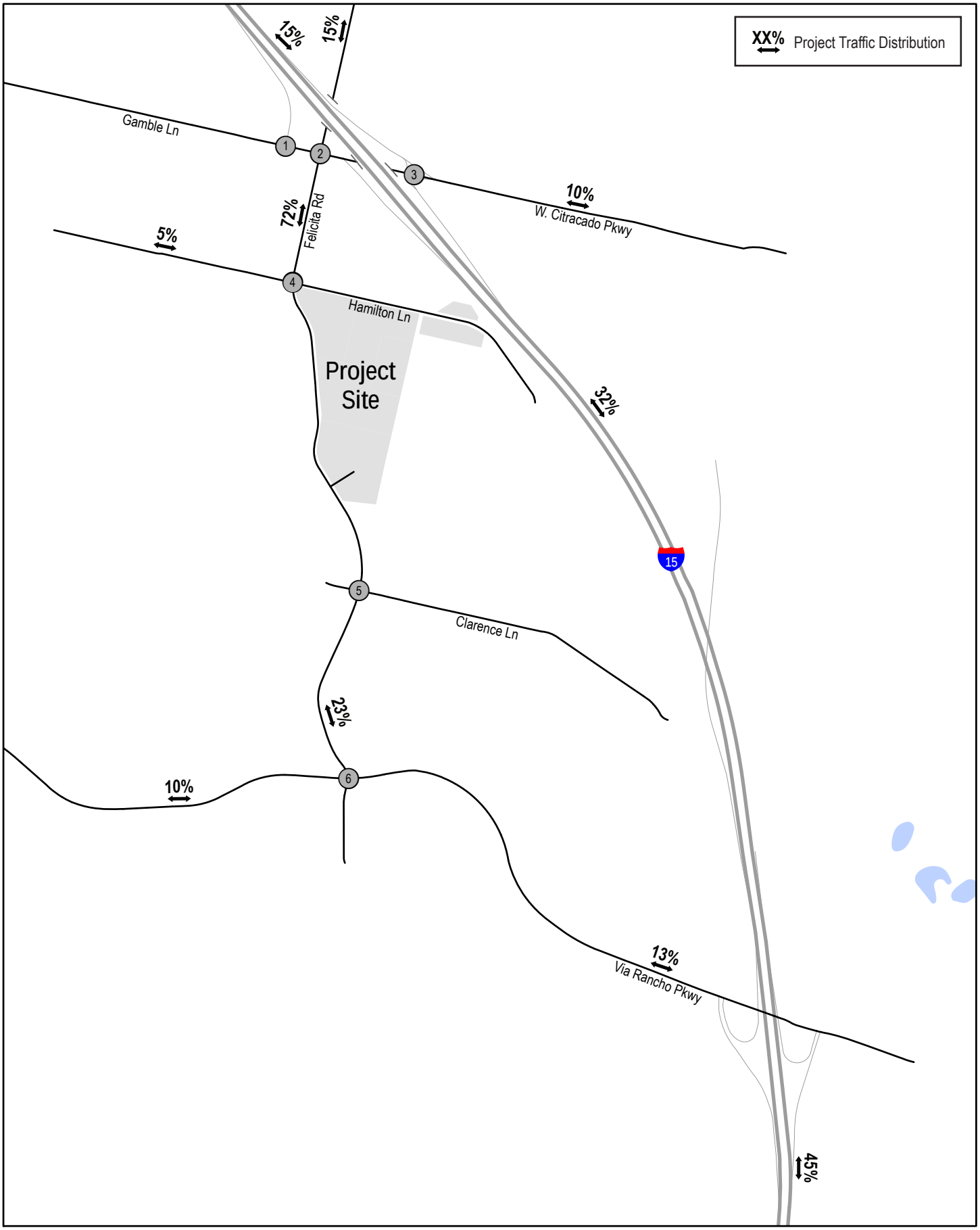
b. Rate is based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

7.2 Trip Distribution/Assignment

The Project traffic was distributed to the local street system based on the roadway network, employment centers, commercial areas, local schools and traffic circulation. Existing peak hour traffic volumes and travel patterns in the immediate vicinity of the project site were utilized to estimate the Project's driveway distribution, as were travel time study results based on travel from the site to the two I-15 interchanges (Gamble Lane/Citracado Parkway to the north and Via Rancho Parkway to the south).

Based on the site location and possible access to I-15, the majority of commuter trips destined to the south were assigned to the Gamble Lane/Citracado Parkway interchange located north of the site with the remaining trips assigned to the Via Rancho Parkway interchange. This route is geographically out-of-direction for southbound trips; however existing congestion and commuter patterns (corroborated with field reviews and travel time studies LLG) indicate that this is a reasonable and likely scenario. LLG observed that trips from the site to I-15 SB via Gamble Lane/Citracado Parkway could save up to 1.5 minutes of travel time as opposed using Via Rancho parkway. Some trips were also assigned locally to Hamilton Lane and Citracado Parkway.

Figure 7–1 shows the project trip distribution percentages. ***Figure 7–2*** shows the AM/PM peak hour project traffic volumes. ***Figure 7–3*** shows existing + project traffic volumes.



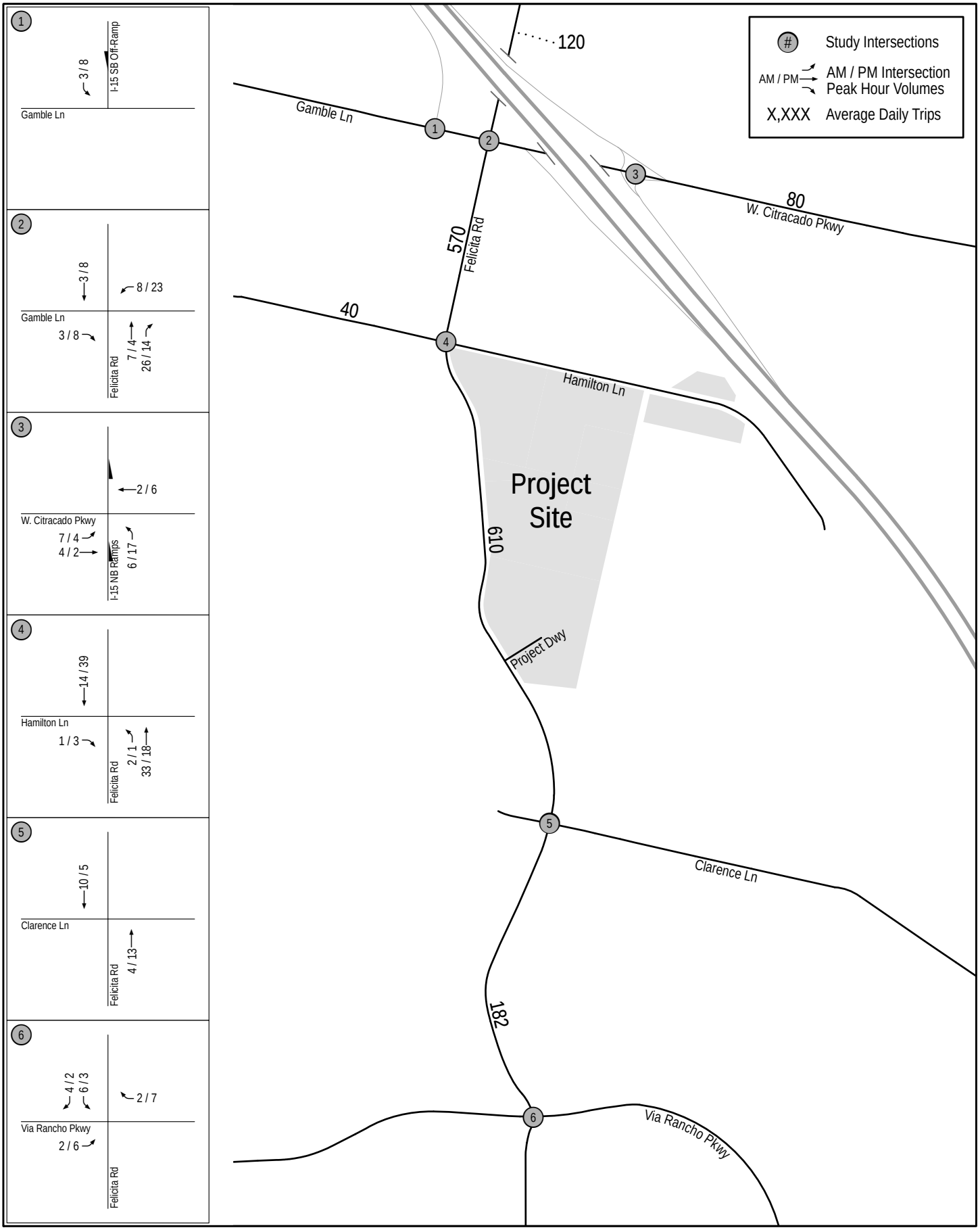
LINSCOTT LAW & GREENSPAN engineers

N:\2208\Figures
Date: 3/18/13

Figure 7-1

Project Traffic Distribution

OAK CREEK



LINSCOTT LAW & GREENSPAN engineers

N:\2208\Figures
Date: 3/13/13

Figure 7-2

Project Traffic Volumes

OAK CREEK

Center City Development Trip Generation

Trip Generation Rates							
		AM Peak Hour Trip Rate			PM Peak Hour Trip Rate		
Land Use	Daily Trip Rate	Total - % of Daily	% In	% Out	Total - % of Daily	% In	% Out
Multi-Family Apartments	8 Trips/DU	8%	20%	80%	10%	70%	30%

Trip Generation								
			AM Peak Hour Trip Rate			PM Peak Hour Trip Rate		
Land Use	Total # of Units	Daily Trips	Total	In	Out	Total	In	Out
Multi-Family Apartments	76	608	49	10	39	61	43	18

Source (Trip Rate): SANDAG (not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002).
Note: Numbers may not total due to rounding.

SUPPLEMENT TO STAFF REPORT/DETAILS OF REQUEST

A. PHYSICAL CHARACTERISTICS

The 2.53-acre site consists of two vacant parcels and is characterized by flat disturbed area that contains an intermittent drainage swale that traverses the property in a northwest to southeast direction. There are two upland vegetation communities and one riparian community within the project area boundaries including ruderal/non-native grassland, ornamental, and southern willow scrub. The site contains mature trees including coast live oak and western sycamore. The project site fronts onto and takes access from Escondido Boulevard, which is classified as a Local Collector Road (66' R-O-W). Escondido Boulevard has not been improved to its ultimate width across the project frontage, and the project would provide curb, gutter and sidewalk to connect to existing improvements to the north and south of the project site. Overhead utility lines are located across the western boundary of the property. A paved pedestrian path previously was installed along the Escondido Boulevard frontage.

B. SUPPLEMENTAL DETAILS OF REQUEST

1. **Property Size:** 2.53 acres gross (2 parcels) 2.50 acres net (roadway dedication along SEB)

2. **Proposed Lots:** 1 Lot (air-space condominium units)

3. **Number of Units:** 76 total units

4. **Density:** 30.4 du/ac (76 units / 2.50 net acres)

5. **Site Data:**

Total Bldg. SF	110,411 SF	1.01 Floor Area Ratio (FAR)
Total Lot Coverage	39,626 SF	0.36%

6. **Building Data:**

No. of Bldgs.: 4 residential bldgs.

Bldg. 1:	32,889 SF	24 units
Bldg. 2:	32,889 SF	24 units
Bldg. 3:	21,073 SF	14 units
Bldg. 4:	21,070 SF	14 units

1 recreation/office

Leasing:	1,796 SF
Club Room:	1,083 SF
Fitness:	871 SF
Cabana:	694 SF

Height: 3 stories with pitched roofs ranging from approx. 36' up to 39'-1" with tower elements up to 42'-3"

Unit Mix:

Plan	# Units	Total SF	Condo Ord. Req.
1 bed	36	760 – 774	700 SF min.
2 bed	34	1,046 – 1,127	800 SF min.
3 bed	6	1,357	1,000 SF min.

7. **Material/Colors:** Stucco exterior walls (off-white, and light, medium and dark tans to medium oak) Stucco trim, color accents and architectural elements (dark brown and taupe shades). Metal window, balcony and patio railings (Bronze). Metal building ornaments on select wall areas, along with tile wall inserts/accents.
Concrete tile roof (Canyon Blend) with heavy corbels on select fascia areas
Canvas Awnings over select building entries (dark blue) and metal eyebrow elements over other select window/openings-entries. Ornamental metal vehicle gates within interior of project.

Project Trip Generation Rates and Calculations Summary

Trip Generation Rates								
Land Use	Daily Trip Rate	AM Peak Hour Trip Rate			PM Peak Hour Trip Rate		
		Total - % of Daily	% In	% Out	Total - % of Daily	% In	% Out
Multi-Family Apartments	8 Trips/DU	8%	20%	80%	9%	70%	30%
Specialty Retail	40 Trips/ksf	3%	60%	40%	9%	50%	50%

Trip Generation								
Land Use	Total # of Units	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			Total	In	Out	Total	In	Out
Multi-Family Apartments	49	392	31	6	25	35	25	10
Specialty Retail	3.78	151	5	3	2	14	7	7
	Total:	**543**	**36**	**9**	**27**	**49**	**32**	**17**

Based on the analysis, all study roadway segments analyzed would continue to operate at an acceptable LOS C or better with the addition of the proposed project. All intersections currently operate at LOS D or better, which is considered an acceptable LOS by the City of Escondido. The intersections were analyzed with the traffic generated by the proposed project added to the existing traffic volumes. With the existing lane geometries, all key intersections analyzed would continue to operate at an acceptable LOS D or better with implementation of the proposed project.

B. AVAILABILITY OF PUBLIC SERVICES

1. Effect on Police Service -- The Police Department expressed no concern regarding the proposed development and their ability to serve the site.

2. Effect on Fire Service -- The Fire Department indicated that adequate services can be provided to the site and the proposed project would not impact levels of service. The site is served by Fire Station No. 5, located at 2319 Felicita Road and Fire Station No. 1 located at 310 Quince Street.

3. Traffic – Access to the site would be provided by a single driveway from South Escondido Boulevard, which is classified as a Local Collector Road (66' R-O-W). A Traffic Study Report was prepared for the originally approved mixed-use project, which was estimated to generate up to 543 average daily trips (ADT) including 36 AM peak trips and 49 PM peak hour trips. The effects on traffic were thoroughly measured as part of the 2005 MND, which concluded there would be no significant impacts to area roadways or intersections, emergency access or parking capacity, and there are no design features or incompatible uses that would substantially increase hazards. The proposed new project is anticipated to generate approximately 608 ADT (8 trips per unit) which would be an increase of 63 daily trips (12 additional AM peak hour and 16 additional PM peak trips) compared to the original project. The Engineering Department indicated the relatively small increase in daily and peak hour trips would not result in any significant direct or near-term cumulative impacts to any of the study roadway segments analyzed, which would continue to operate at an

APPENDIX E

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
EXISTING CONDITIONS

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	7	21	27	3	11	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	24	31	3	12	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	34	0	-	0	72	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	40	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1578	-	-	-	932	1042
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1578	-	-	-	927	1042
Mov Cap-2 Maneuver	-	-	-	-	927	-
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	977	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1578	-	-	-	972
HCM Lane V/C Ratio	0.005	-	-	-	0.022
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	27	3	24	27	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	3	28	31	2	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	34	0	119	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	86	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1578	-	877	1041
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	937	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1578	-	861	1041
Mov Cap-2 Maneuver	-	-	-	-	861	-
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	920	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	861	-	-	1578	-
HCM Lane V/C Ratio	0.003	-	-	0.017	-
HCM Control Delay (s)	9.2	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	22	0	0	12	8	637	36	15	1191	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	23	0	0	12	8	664	38	16	1241	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1620	1990	620	1351	1971	351	1241	0	0	701	0	0
Stage 1	1272	1272	-	699	699	-	-	-	-	-	-	-
Stage 2	348	718	-	652	1272	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	68	60	431	109	62	645	557	-	-	892	-	-
Stage 1	177	237	-	397	440	-	-	-	-	-	-	-
Stage 2	641	431	-	423	237	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	65	58	431	101	60	645	557	-	-	892	-	-
Mov Cap-2 Maneuver	65	58	-	101	60	-	-	-	-	-	-	-
Stage 1	174	233	-	391	434	-	-	-	-	-	-	-
Stage 2	620	425	-	393	233	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.8	10.7	0.1	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	557	-	-	431	645	892	-	-
HCM Lane V/C Ratio	0.015	-	-	0.053	0.019	0.018	-	-
HCM Control Delay (s)	11.6	-	-	13.8	10.7	9.1	-	-
HCM Lane LOS	B	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	86	4	11	176	14	17	1	10	23	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	96	4	12	196	16	19	1	11	26	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	100	0	0	357	358	98	356	352	203
Stage 1	-	-	-	-	-	-	122	122	-	228	228	-
Stage 2	-	-	-	-	-	-	235	236	-	128	124	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1360	-	-	1493	-	-	598	568	958	599	573	838
Stage 1	-	-	-	-	-	-	882	795	-	775	715	-
Stage 2	-	-	-	-	-	-	768	710	-	876	793	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1360	-	-	1493	-	-	580	558	958	583	563	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	580	558	-	583	563	-
Stage 1	-	-	-	-	-	-	874	788	-	768	709	-
Stage 2	-	-	-	-	-	-	748	704	-	857	786	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.4	10.6	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	674	1360	-	-	1493	-	-	648
HCM Lane V/C Ratio	0.046	0.009	-	-	0.008	-	-	0.062
HCM Control Delay (s)	10.6	7.7	0	-	7.4	0	-	10.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	53	37	26	185	103	0	24	551	25	10	1165	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	55	38	27	191	106	0	25	568	26	10	1201	72
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	287	370	314	336	370	314	320	2421	1083	605	2421	1083
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.00	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	1283	1863	1583	1331	1863	1583	433	3539	1583	820	3539	1583
Grp Volume(v), veh/h	55	38	27	191	106	0	25	568	26	10	1201	72
Grp Sat Flow(s),veh/h/ln	1283	1863	1583	1331	1863	1583	433	1770	1583	820	1770	1583
Q Serve(g_s), s	2.9	1.3	1.1	10.5	3.7	0.0	2.2	4.6	0.4	0.4	12.5	1.2
Cycle Q Clear(g_c), s	6.6	1.3	1.1	11.8	3.7	0.0	14.7	4.6	0.4	5.0	12.5	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	287	370	314	336	370	314	320	2421	1083	605	2421	1083
V/C Ratio(X)	0.19	0.10	0.09	0.57	0.29	0.00	0.08	0.23	0.02	0.02	0.50	0.07
Avail Cap(c_a), veh/h	508	692	588	566	692	588	320	2421	1083	605	2421	1083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.9	25.2	25.1	30.0	26.1	0.0	9.3	4.6	3.9	5.5	5.8	4.0
Incr Delay (d2), s/veh	0.3	0.1	0.1	1.5	0.4	0.0	0.5	0.2	0.0	0.0	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.7	0.5	4.0	2.0	0.0	0.3	2.3	0.2	0.1	6.3	0.5
LnGrp Delay(d),s/veh	29.3	25.3	25.2	31.5	26.6	0.0	9.8	4.8	3.9	5.5	6.5	4.1
LnGrp LOS	C	C	C	C	C		A	A	A	A	A	A
Approach Vol, veh/h		120			297			619			1283	
Approach Delay, s/veh		27.1			29.7			5.0			6.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		57.0		19.7		57.0		19.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		52.5		28.5		52.5		28.5
Max Q Clear Time (g_c+I1), s		16.7		8.6		14.5		13.8
Green Ext Time (p_c), s		19.3		1.6		19.9		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	11	15	47	11	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	17	53	12	5	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	66	0	-	0	102	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	42	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1536	-	-	-	896	1005
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	980	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1536	-	-	-	888	1005
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	971	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1536	-	-	-	955
HCM Lane V/C Ratio	0.008	-	-	-	0.012
HCM Control Delay (s)	7.4	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	17	2	10	55	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	2	11	63	3	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	22	0	107	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	86	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1593	-	891	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	937	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1593	-	885	1056
Mov Cap-2 Maneuver	-	-	-	-	885	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	930	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	922	-	-	1593	-
HCM Lane V/C Ratio	0.005	-	-	0.007	-
HCM Control Delay (s)	8.9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	15	0	0	45	25	1253	181	44	733	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	16	0	0	47	26	1305	189	46	764	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1560	2401	382	1925	2307	747	764	0	0	1494	0	0
Stage 1	855	855	-	1452	1452	-	-	-	-	-	-	-
Stage 2	705	1546	-	473	855	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	76	33	616	40	38	355	845	-	-	445	-	-
Stage 1	319	373	-	137	194	-	-	-	-	-	-	-
Stage 2	393	174	-	541	373	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	59	29	616	35	33	355	845	-	-	445	-	-
Mov Cap-2 Maneuver	59	29	-	35	33	-	-	-	-	-	-	-
Stage 1	309	334	-	133	188	-	-	-	-	-	-	-
Stage 2	331	169	-	473	334	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	16.7	0.2	0.8
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	845	-	-	616	355	445	-	-
HCM Lane V/C Ratio	0.031	-	-	0.025	0.132	0.103	-	-
HCM Control Delay (s)	9.4	-	-	11	16.7	14	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.5	0.3	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	198	5	11	115	11	6	2	11	31	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	220	6	12	128	12	7	2	12	34	1	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	140	0	0	226	0	0	399	400	223	401	397	134
Stage 1	-	-	-	-	-	-	236	236	-	158	158	-
Stage 2	-	-	-	-	-	-	163	164	-	243	239	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1443	-	-	1342	-	-	561	538	817	560	540	915
Stage 1	-	-	-	-	-	-	767	710	-	844	767	-
Stage 2	-	-	-	-	-	-	839	762	-	761	708	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1443	-	-	1342	-	-	548	529	817	543	531	915
Mov Cap-2 Maneuver	-	-	-	-	-	-	548	529	-	543	531	-
Stage 1	-	-	-	-	-	-	762	706	-	839	759	-
Stage 2	-	-	-	-	-	-	821	754	-	743	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	10.5	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	674	1443	-	-	1342	-	-	591
HCM Lane V/C Ratio	0.031	0.005	-	-	0.009	-	-	0.075
HCM Control Delay (s)	10.5	7.5	0	-	7.7	0	-	11.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	109	91	28	90	103	21	29	1348	111	28	610	49
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	112	94	29	93	106	22	30	1390	114	29	629	51
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	343	292	273	343	292	573	2465	1103	269	2465	1103
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	1257	1863	1583	1263	1863	1583	757	3539	1583	347	3539	1583
Grp Volume(v), veh/h	112	94	29	93	106	22	30	1390	114	29	629	51
Grp Sat Flow(s),veh/h/ln	1257	1863	1583	1263	1863	1583	757	1770	1583	347	1770	1583
Q Serve(g_s), s	6.4	3.3	1.1	5.1	3.7	0.9	1.1	14.8	1.8	3.4	4.9	0.8
Cycle Q Clear(g_c), s	10.1	3.3	1.1	8.4	3.7	0.9	6.1	14.8	1.8	18.2	4.9	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	265	343	292	273	343	292	573	2465	1103	269	2465	1103
V/C Ratio(X)	0.42	0.27	0.10	0.34	0.31	0.08	0.05	0.56	0.10	0.11	0.26	0.05
Avail Cap(c_a), veh/h	509	704	599	518	704	599	573	2465	1103	269	2465	1103
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	26.4	25.6	30.0	26.6	25.4	5.3	5.7	3.7	10.3	4.2	3.6
Incr Delay (d2), s/veh	1.1	0.4	0.1	0.7	0.5	0.1	0.2	0.9	0.2	0.8	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.7	0.5	1.8	2.0	0.4	0.3	7.5	0.8	0.4	2.4	0.4
LnGrp Delay(d),s/veh	32.0	26.8	25.7	30.8	27.1	25.6	5.5	6.7	3.9	11.1	4.5	3.7
LnGrp LOS	C	C	C	C	C	C	A	A	A	B	A	A
Approach Vol, veh/h		235			221			1534			709	
Approach Delay, s/veh		29.2			28.5			6.4			4.7	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		57.0		18.4		57.0		18.4
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		52.5		28.5		52.5		28.5
Max Q Clear Time (g_c+I1), s		16.8		12.1		20.2		10.4
Green Ext Time (p_c), s		23.5		1.8		21.9		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	21	1	10	27	3	3	0	40	11	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	24	1	11	31	3	3	0	45	12	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	34	0	0	25	0	0	100	97	24	118	96	32
Stage 1	-	-	-	-	-	-	40	40	-	55	55	-
Stage 2	-	-	-	-	-	-	60	57	-	63	41	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1578	-	-	1589	-	-	881	793	1052	858	794	1042
Stage 1	-	-	-	-	-	-	975	862	-	957	849	-
Stage 2	-	-	-	-	-	-	951	847	-	948	861	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1578	-	-	1589	-	-	865	784	1052	813	784	1042
Mov Cap-2 Maneuver	-	-	-	-	-	-	865	784	-	813	784	-
Stage 1	-	-	-	-	-	-	970	858	-	952	843	-
Stage 2	-	-	-	-	-	-	936	841	-	903	857	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	1.8	8.6	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1036	1578	-	-	1589	-	-	896
HCM Lane V/C Ratio	0.047	0.005	-	-	0.007	-	-	0.024
HCM Control Delay (s)	8.6	7.3	0	-	7.3	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	46	24	25	35	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	28	29	40	5	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	80	0	165	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	98	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1518	-	826	997
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1518	-	809	997
Mov Cap-2 Maneuver	-	-	-	-	809	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	907	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.1	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	809	-	-	1518	-
HCM Lane V/C Ratio	0.006	-	-	0.019	-
HCM Control Delay (s)	9.5	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	41	0	0	12	13	654	36	15	1191	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	12	14	681	38	16	1241	49

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1640	2018	620	1379	1999	359	1241	0	0	719	0	0
Stage 1	1272	1272	-	727	727	-	-	-	-	-	-	-
Stage 2	368	746	-	652	1272	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	66	58	431	104	59	638	557	-	-	878	-	-
Stage 1	177	237	-	381	427	-	-	-	-	-	-	-
Stage 2	624	419	-	423	237	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	63	56	431	91	56	638	557	-	-	878	-	-
Mov Cap-2 Maneuver	63	56	-	91	56	-	-	-	-	-	-	-
Stage 1	173	233	-	371	416	-	-	-	-	-	-	-
Stage 2	596	408	-	374	233	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	10.8	0.2	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	557	-	-	431	638	878	-	-
HCM Lane V/C Ratio	0.024	-	-	0.099	0.02	0.018	-	-
HCM Control Delay (s)	11.6	-	-	14.3	10.8	9.2	-	-
HCM Lane LOS	B	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	86	4	11	176	16	17	1	10	48	1	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	96	4	12	196	18	19	1	11	53	1	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	213	0	0	100	0	0	372	367	98	364	360	204
Stage 1	-	-	-	-	-	-	129	129	-	229	229	-
Stage 2	-	-	-	-	-	-	243	238	-	135	131	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1357	-	-	1493	-	-	585	562	958	592	567	837
Stage 1	-	-	-	-	-	-	875	789	-	774	715	-
Stage 2	-	-	-	-	-	-	761	708	-	868	788	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1357	-	-	1493	-	-	556	550	958	575	555	837
Mov Cap-2 Maneuver	-	-	-	-	-	-	556	550	-	575	555	-
Stage 1	-	-	-	-	-	-	865	780	-	765	709	-
Stage 2	-	-	-	-	-	-	729	702	-	846	779	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.4	10.8	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	654	1357	-	-	1493	-	-	641
HCM Lane V/C Ratio	0.048	0.011	-	-	0.008	-	-	0.127
HCM Control Delay (s)	10.8	7.7	0	-	7.4	0	-	11.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	37	33	185	103	0	26	556	25	10	1184	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	72	38	34	191	106	0	27	573	26	10	1221	72
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	366	311	329	366	311	50	2193	981	22	2137	956
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.00	0.03	0.62	0.62	0.01	0.60	0.60
Sat Flow, veh/h	1283	1863	1583	1323	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	72	38	34	191	106	0	27	573	26	10	1221	72
Grp Sat Flow(s),veh/h/ln	1283	1863	1583	1323	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.0	1.3	1.4	10.9	3.8	0.0	1.2	5.8	0.5	0.4	16.4	1.5
Cycle Q Clear(g_c), s	7.8	1.3	1.4	12.2	3.8	0.0	1.2	5.8	0.5	0.4	16.4	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	366	311	329	366	311	50	2193	981	22	2137	956
V/C Ratio(X)	0.26	0.10	0.11	0.58	0.29	0.00	0.54	0.26	0.03	0.45	0.57	0.08
Avail Cap(c_a), veh/h	412	556	473	464	556	473	124	2193	981	124	2137	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	25.9	26.0	30.9	26.9	0.0	37.7	6.8	5.8	38.6	9.4	6.5
Incr Delay (d2), s/veh	0.5	0.1	0.2	1.6	0.4	0.0	8.6	0.3	0.0	13.7	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.7	0.6	4.1	2.0	0.0	0.7	2.9	0.2	0.3	8.3	0.7
LnGrp Delay(d),s/veh	30.7	26.1	26.1	32.6	27.4	0.0	46.3	7.1	5.8	52.3	10.5	6.6
LnGrp LOS	C	C	C	C	C		D	A	A	D	B	A
Approach Vol, veh/h		144			297			626			1303	
Approach Delay, s/veh		28.4			30.7			8.7			10.7	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.5	53.2		19.9	6.7	52.0		19.9
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	47.5		23.5	5.5	47.5		23.5
Max Q Clear Time (g_c+I1), s	2.4	7.8		9.8	3.2	18.4		14.2
Green Ext Time (p_c), s	0.0	20.0		1.5	0.0	16.9		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	15	3	2	21	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	3	2	22	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	31	23	23	0	-	0
Stage 1	23	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	983	1054	1592	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	981	1054	1592	-	-	-
Mov Cap-2 Maneuver	981	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1013	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1592	-	1054	-	-
HCM Lane V/C Ratio	0.002	-	0.015	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	15	3	43	47	11	1	0	18	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	17	3	49	53	12	1	0	20	5	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	66	0	0	20	0	0	205	208	19	211	202	60
Stage 1	-	-	-	-	-	-	44	44	-	157	157	-
Stage 2	-	-	-	-	-	-	161	164	-	54	45	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1536	-	-	1596	-	-	753	689	1059	746	694	1005
Stage 1	-	-	-	-	-	-	970	858	-	845	768	-
Stage 2	-	-	-	-	-	-	841	762	-	958	857	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1536	-	-	1596	-	-	725	661	1059	709	666	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	725	661	-	709	666	-
Stage 1	-	-	-	-	-	-	961	850	-	837	743	-
Stage 2	-	-	-	-	-	-	809	738	-	931	849	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.8	3.1	8.6	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1034	1536	-	-	1596	-	-	861
HCM Lane V/C Ratio	0.021	0.008	-	-	0.031	-	-	0.013
HCM Control Delay (s)	8.6	7.4	0	-	7.3	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	26	12	15	89	12	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	14	17	102	14	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	44	0	174	37
Stage 1	-	-	-	-	37	-
Stage 2	-	-	-	-	137	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1564	-	816	1035
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1564	-	806	1035
Mov Cap-2 Maneuver	-	-	-	-	806	-
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	879	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	820	-	-	1564	-
HCM Lane V/C Ratio	0.018	-	-	0.011	-
HCM Control Delay (s)	9.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	24	0	0	45	45	1261	181	44	733	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	25	0	0	47	47	1314	189	46	764	64

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1606	2451	382	1975	2357	751	764	0	0	1502	0	0
Stage 1	855	855	-	1502	1502	-	-	-	-	-	-	-
Stage 2	751	1596	-	473	855	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	70	31	616	37	35	353	845	-	-	442	-	-
Stage 1	319	373	-	127	183	-	-	-	-	-	-	-
Stage 2	369	165	-	541	373	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	54	26	616	31	30	353	845	-	-	442	-	-
Mov Cap-2 Maneuver	54	26	-	31	30	-	-	-	-	-	-	-
Stage 1	301	334	-	120	173	-	-	-	-	-	-	-
Stage 2	302	156	-	465	334	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	16.8	0.3	0.7
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	845	-	-	616	353	442	-	-
HCM Lane V/C Ratio	0.055	-	-	0.041	0.133	0.104	-	-
HCM Control Delay (s)	9.5	-	-	11.1	16.8	14.1	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	0.5	0.3	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	198	5	11	115	19	6	2	11	43	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	220	6	12	128	21	7	2	12	48	1	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	149	0	0	226	0	0	436	438	223	435	431	138
Stage 1	-	-	-	-	-	-	265	265	-	163	163	-
Stage 2	-	-	-	-	-	-	171	173	-	272	268	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1432	-	-	1342	-	-	531	512	817	531	517	910
Stage 1	-	-	-	-	-	-	740	689	-	839	763	-
Stage 2	-	-	-	-	-	-	831	756	-	734	687	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1432	-	-	1342	-	-	511	498	817	511	503	910
Mov Cap-2 Maneuver	-	-	-	-	-	-	511	498	-	511	503	-
Stage 1	-	-	-	-	-	-	727	677	-	825	755	-
Stage 2	-	-	-	-	-	-	808	748	-	708	675	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.6	10.7	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	650	1432	-	-	1342	-	-	568
HCM Lane V/C Ratio	0.032	0.015	-	-	0.009	-	-	0.112
HCM Control Delay (s)	10.7	7.6	0	-	7.7	0	-	12.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	117	91	31	90	103	21	37	1368	111	28	619	49
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	121	94	32	93	106	22	38	1410	114	29	638	51
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	346	294	272	346	294	64	2166	969	53	2145	959
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.04	0.61	0.61	0.03	0.61	0.61
Sat Flow, veh/h	1257	1863	1583	1260	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	121	94	32	93	106	22	38	1410	114	29	638	51
Grp Sat Flow(s),veh/h/ln	1257	1863	1583	1260	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.2	3.4	1.3	5.4	3.9	0.9	1.7	20.1	2.4	1.3	6.8	1.0
Cycle Q Clear(g_c), s	11.1	3.4	1.3	8.7	3.9	0.9	1.7	20.1	2.4	1.3	6.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	264	346	294	272	346	294	64	2166	969	53	2145	959
V/C Ratio(X)	0.46	0.27	0.11	0.34	0.31	0.07	0.60	0.65	0.12	0.55	0.30	0.05
Avail Cap(c_a), veh/h	407	558	475	415	558	475	124	2166	969	124	2145	959
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	27.4	26.5	31.1	27.5	26.3	37.2	9.8	6.4	37.5	7.4	6.3
Incr Delay (d2), s/veh	1.2	0.4	0.2	0.7	0.5	0.1	8.6	1.5	0.2	8.5	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	1.8	0.6	1.9	2.0	0.4	1.0	10.3	1.1	0.7	3.4	0.5
LnGrp Delay(d),s/veh	33.6	27.8	26.7	31.9	28.0	26.4	45.8	11.3	6.6	46.0	7.8	6.4
LnGrp LOS	C	C	C	C	C	C	D	B	A	D	A	A
Approach Vol, veh/h		247			221			1562			718	
Approach Delay, s/veh		30.5			29.5			11.8			9.2	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	52.5		19.1	7.3	52.0		19.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	47.5		23.5	5.5	47.5		23.5
Max Q Clear Time (g_c+I1), s	3.3	22.1		13.1	3.7	8.8		10.7
Green Ext Time (p_c), s	0.0	18.0		1.5	0.0	23.9		1.7

Intersection Summary		
HCM 2010 Ctrl Delay		14.2
HCM 2010 LOS		B

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	7	11	9	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	12	9	11	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	46	13	16	0	-	0
Stage 1	13	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	964	1067	1602	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	989	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	956	1067	1602	-	-	-
Mov Cap-2 Maneuver	956	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	981	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1602	-	1067	-	-
HCM Lane V/C Ratio	0.007	-	0.007	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

APPENDIX F

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
NEAR-TERM CONDITIONS

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	7	34	40	3	11	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	39	45	3	12	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	49	0	-	0	102	47
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	55	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1558	-	-	-	896	1022
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	968	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1558	-	-	-	892	1022
Mov Cap-2 Maneuver	-	-	-	-	892	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	963	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1558	-	-	-	942
HCM Lane V/C Ratio	0.005	-	-	-	0.023
HCM Control Delay (s)	7.3	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	61	41	24	94	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	47	28	108	7	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	117	0	257	94
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	163	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1471	-	732	963
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1471	-	717	963
Mov Cap-2 Maneuver	-	-	-	-	717	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	849	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	717	-	-	1471	-
HCM Lane V/C Ratio	0.01	-	-	0.019	-
HCM Control Delay (s)	10.1	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	56	0	0	20	42	671	36	17	1191	77
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	58	0	0	21	44	699	38	18	1241	80

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1713	2100	620	1461	2081	368	1241	0	0	736	0	0
Stage 1	1276	1276	-	805	805	-	-	-	-	-	-	-
Stage 2	437	824	-	656	1276	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	58	51	431	90	53	629	557	-	-	865	-	-
Stage 1	176	236	-	342	393	-	-	-	-	-	-	-
Stage 2	568	385	-	421	236	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	52	46	431	72	48	629	557	-	-	865	-	-
Mov Cap-2 Maneuver	52	46	-	72	48	-	-	-	-	-	-	-
Stage 1	162	231	-	315	362	-	-	-	-	-	-	-
Stage 2	506	355	-	356	231	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.7	10.9	0.7	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	557	-	-	431	629	865	-	-
HCM Lane V/C Ratio	0.079	-	-	0.135	0.033	0.02	-	-
HCM Control Delay (s)	12	-	-	14.7	10.9	9.2	-	-
HCM Lane LOS	B	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.5	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	91	4	11	196	18	17	1	10	61	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	101	4	12	218	20	19	1	11	68	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	238	0	0	106	0	0	387	390	103	386	382	228
Stage 1	-	-	-	-	-	-	128	128	-	252	252	-
Stage 2	-	-	-	-	-	-	259	262	-	134	130	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1329	-	-	1485	-	-	572	545	952	573	551	811
Stage 1	-	-	-	-	-	-	876	790	-	752	698	-
Stage 2	-	-	-	-	-	-	746	691	-	869	789	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1329	-	-	1485	-	-	554	535	952	557	541	811
Mov Cap-2 Maneuver	-	-	-	-	-	-	554	535	-	557	541	-
Stage 1	-	-	-	-	-	-	867	782	-	744	692	-
Stage 2	-	-	-	-	-	-	726	685	-	849	781	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.4	10.8	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	650	1329	-	-	1485	-	-	587
HCM Lane V/C Ratio	0.048	0.009	-	-	0.008	-	-	0.14
HCM Control Delay (s)	10.8	7.7	0	-	7.4	0	-	12.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	87	46	26	197	127	14	24	585	28	10	1199	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	90	47	27	203	131	14	25	603	29	10	1236	72
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	400	340	349	400	340	298	2372	1061	569	2372	1061
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1238	1863	1583	1320	1863	1583	419	3539	1583	792	3539	1583
Grp Volume(v), veh/h	90	47	27	203	131	14	25	603	29	10	1236	72
Grp Sat Flow(s),veh/h/ln	1238	1863	1583	1320	1863	1583	419	1770	1583	792	1770	1583
Q Serve(g_s), s	5.2	1.6	1.1	11.5	4.7	0.5	2.5	5.3	0.5	0.4	13.9	1.2
Cycle Q Clear(g_c), s	9.8	1.6	1.1	13.1	4.7	0.5	16.4	5.3	0.5	5.7	13.9	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	400	340	349	400	340	298	2372	1061	569	2372	1061
V/C Ratio(X)	0.32	0.12	0.08	0.58	0.33	0.04	0.08	0.25	0.03	0.02	0.52	0.07
Avail Cap(c_a), veh/h	469	678	576	545	678	576	298	2372	1061	569	2372	1061
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	24.8	24.6	30.0	26.0	24.4	10.7	5.1	4.3	6.3	6.5	4.5
Incr Delay (d2), s/veh	0.6	0.1	0.1	1.5	0.5	0.0	0.6	0.3	0.0	0.1	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.8	0.5	4.3	2.5	0.2	0.3	2.7	0.2	0.1	7.0	0.6
LnGrp Delay(d),s/veh	30.8	24.9	24.7	31.6	26.4	24.4	11.3	5.4	4.4	6.3	7.4	4.6
LnGrp LOS	C	C	C	C	C	C	B	A	A	A	A	A
Approach Vol, veh/h		164			348			657			1318	
Approach Delay, s/veh		28.1			29.3			5.6			7.2	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		57.0		21.3		57.0		21.3
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		52.5		28.5		52.5		28.5
Max Q Clear Time (g_c+I1), s		18.4		11.8		15.9		15.1
Green Ext Time (p_c), s		19.7		1.9		20.5		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	11	28	60	11	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	32	68	12	5	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	81	0	-	0	131	74
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	57	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1517	-	-	-	863	988
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	966	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1517	-	-	-	855	988
Mov Cap-2 Maneuver	-	-	-	-	855	-
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1517	-	-	-	930
HCM Lane V/C Ratio	0.008	-	-	-	0.012
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	52	42	10	125	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	48	11	144	8	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	108	0	251	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	167	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1483	-	738	975
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	863	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1483	-	732	975
Mov Cap-2 Maneuver	-	-	-	-	732	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	856	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	756	-	-	1483	-
HCM Lane V/C Ratio	0.012	-	-	0.008	-
HCM Control Delay (s)	9.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	50	0	0	48	60	1288	181	52	733	77
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	52	0	0	50	62	1342	189	54	764	80

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1668	2527	382	2051	2433	765	764	0	0	1530	0	0
Stage 1	872	872	-	1561	1561	-	-	-	-	-	-	-
Stage 2	796	1655	-	490	872	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	63	27	616	32	31	346	845	-	-	431	-	-
Stage 1	312	366	-	117	171	-	-	-	-	-	-	-
Stage 2	347	154	-	529	366	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	46	22	616	25	25	346	845	-	-	431	-	-
Mov Cap-2 Maneuver	46	22	-	25	25	-	-	-	-	-	-	-
Stage 1	289	320	-	108	158	-	-	-	-	-	-	-
Stage 2	275	143	-	424	320	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	17.2	0.4	0.9
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	845	-	-	616	346	431	-	-
HCM Lane V/C Ratio	0.074	-	-	0.085	0.145	0.126	-	-
HCM Control Delay (s)	9.6	-	-	11.4	17.2	14.6	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.5	0.4	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	217	5	11	123	15	6	2	11	71	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	241	6	12	137	17	7	2	12	79	1	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	153	0	0	247	0	0	431	435	244	433	429	145
Stage 1	-	-	-	-	-	-	257	257	-	169	169	-
Stage 2	-	-	-	-	-	-	174	178	-	264	260	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1428	-	-	1319	-	-	535	514	795	533	518	902
Stage 1	-	-	-	-	-	-	748	695	-	833	759	-
Stage 2	-	-	-	-	-	-	828	752	-	741	693	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1428	-	-	1319	-	-	522	506	795	517	510	902
Mov Cap-2 Maneuver	-	-	-	-	-	-	522	506	-	517	510	-
Stage 1	-	-	-	-	-	-	744	691	-	828	751	-
Stage 2	-	-	-	-	-	-	810	744	-	723	689	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	10.7	13
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	649	1428	-	-	1319	-	-	540
HCM Lane V/C Ratio	0.033	0.005	-	-	0.009	-	-	0.165
HCM Control Delay (s)	10.7	7.5	0	-	7.8	0	-	13
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	144	114	28	95	67	21	29	1383	122	28	645	49
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	148	118	29	98	69	22	30	1426	126	29	665	51
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	353	300	262	353	300	549	2448	1095	255	2448	1095
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.69	0.69	0.69	0.69	0.69	0.69
Sat Flow, veh/h	1300	1863	1583	1236	1863	1583	732	3539	1583	331	3539	1583
Grp Volume(v), veh/h	148	118	29	98	69	22	30	1426	126	29	665	51
Grp Sat Flow(s),veh/h/ln	1300	1863	1583	1236	1863	1583	732	1770	1583	331	1770	1583
Q Serve(g_s), s	8.2	4.2	1.1	5.7	2.4	0.9	1.2	15.8	2.0	3.8	5.4	0.8
Cycle Q Clear(g_c), s	10.6	4.2	1.1	9.8	2.4	0.9	6.6	15.8	2.0	19.6	5.4	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	353	300	262	353	300	549	2448	1095	255	2448	1095
V/C Ratio(X)	0.49	0.33	0.10	0.37	0.20	0.07	0.05	0.58	0.12	0.11	0.27	0.05
Avail Cap(c_a), veh/h	543	699	595	491	699	595	549	2448	1095	255	2448	1095
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	26.6	25.4	30.8	25.9	25.3	5.7	6.0	3.9	11.1	4.4	3.7
Incr Delay (d2), s/veh	1.2	0.6	0.1	0.9	0.3	0.1	0.2	1.0	0.2	0.9	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	2.2	0.5	2.0	1.2	0.4	0.3	7.9	0.9	0.4	2.7	0.4
LnGrp Delay(d),s/veh	31.6	27.2	25.5	31.7	26.1	25.4	5.9	7.1	4.1	12.0	4.7	3.8
LnGrp LOS	C	C	C	C	C	C	A	A	A	B	A	A
Approach Vol, veh/h		295			189			1582			745	
Approach Delay, s/veh		29.2			28.9			6.8			4.9	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		57.0		18.9		57.0		18.9
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		52.5		28.5		52.5		28.5
Max Q Clear Time (g_c+I1), s		17.8		12.6		21.6		11.8
Green Ext Time (p_c), s		23.9		1.8		22.1		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	34	1	10	40	3	3	0	40	11	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	39	1	11	45	3	3	0	45	12	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	40	0	0	129	127	39	148	126	47
Stage 1	-	-	-	-	-	-	55	55	-	70	70	-
Stage 2	-	-	-	-	-	-	74	72	-	78	56	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1558	-	-	1570	-	-	844	764	1033	820	764	1022
Stage 1	-	-	-	-	-	-	957	849	-	940	837	-
Stage 2	-	-	-	-	-	-	935	835	-	931	848	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1570	-	-	829	755	1033	777	755	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	829	755	-	777	755	-
Stage 1	-	-	-	-	-	-	952	845	-	935	831	-
Stage 2	-	-	-	-	-	-	920	829	-	886	844	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	1.4	8.7	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1016	1558	-	-	1570	-	-	864
HCM Lane V/C Ratio	0.048	0.005	-	-	0.007	-	-	0.025
HCM Control Delay (s)	8.7	7.3	0	-	7.3	0	-	9.3
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	80	62	25	102	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	71	29	117	9	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	163	0	303	128
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	175	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1416	-	689	922
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	855	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1416	-	674	922
Mov Cap-2 Maneuver	-	-	-	-	674	-
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	836	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	674	-	-	1416	-
HCM Lane V/C Ratio	0.014	-	-	0.02	-
HCM Control Delay (s)	10.4	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	75	0	0	20	47	688	36	17	1191	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	78	0	0	21	49	717	38	18	1241	84

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1732	2128	620	1489	2109	377	1241	0	0	754	0	0
Stage 1	1276	1276	-	833	833	-	-	-	-	-	-	-
Stage 2	456	852	-	656	1276	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	56	49	431	86	51	621	557	-	-	852	-	-
Stage 1	176	236	-	329	382	-	-	-	-	-	-	-
Stage 2	554	374	-	421	236	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	50	44	431	65	46	621	557	-	-	852	-	-
Mov Cap-2 Maneuver	50	44	-	65	46	-	-	-	-	-	-	-
Stage 1	161	231	-	300	348	-	-	-	-	-	-	-
Stage 2	488	341	-	337	231	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.2	11	0.7	0.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	557	-	-	431	621	852	-	-
HCM Lane V/C Ratio	0.088	-	-	0.181	0.034	0.021	-	-
HCM Control Delay (s)	12.1	-	-	15.2	11	9.3	-	-
HCM Lane LOS	B	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.7	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	91	4	11	196	20	17	1	10	86	1	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	101	4	12	218	22	19	1	11	96	1	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	240	0	0	106	0	0	401	398	103	394	390	229
Stage 1	-	-	-	-	-	-	134	134	-	253	253	-
Stage 2	-	-	-	-	-	-	267	264	-	141	137	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1327	-	-	1485	-	-	560	540	952	566	545	810
Stage 1	-	-	-	-	-	-	869	785	-	751	698	-
Stage 2	-	-	-	-	-	-	738	690	-	862	783	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1327	-	-	1485	-	-	532	528	952	549	533	810
Mov Cap-2 Maneuver	-	-	-	-	-	-	532	528	-	549	533	-
Stage 1	-	-	-	-	-	-	858	775	-	741	692	-
Stage 2	-	-	-	-	-	-	706	684	-	840	773	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.4	11	12.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	631	1327	-	-	1485	-	-	590
HCM Lane V/C Ratio	0.049	0.012	-	-	0.008	-	-	0.209
HCM Control Delay (s)	11	7.7	0	-	7.4	0	-	12.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	104	46	33	197	127	14	26	590	28	10	1218	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	107	47	34	203	131	14	27	608	29	10	1256	72
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	394	335	340	394	335	50	2151	962	22	2096	937
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.03	0.61	0.61	0.01	0.59	0.59
Sat Flow, veh/h	1238	1863	1583	1312	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	107	47	34	203	131	14	27	608	29	10	1256	72
Grp Sat Flow(s),veh/h/ln	1238	1863	1583	1312	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.4	1.6	1.4	11.9	4.8	0.6	1.2	6.5	0.6	0.4	18.0	1.6
Cycle Q Clear(g_c), s	11.2	1.6	1.4	13.5	4.8	0.6	1.2	6.5	0.6	0.4	18.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	394	335	340	394	335	50	2151	962	22	2096	937
V/C Ratio(X)	0.39	0.12	0.10	0.60	0.33	0.04	0.54	0.28	0.03	0.45	0.60	0.08
Avail Cap(c_a), veh/h	379	546	464	447	546	464	122	2151	962	122	2096	937
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	25.6	25.5	31.1	26.8	25.2	38.5	7.4	6.3	39.3	10.3	7.0
Incr Delay (d2), s/veh	0.9	0.1	0.1	1.7	0.5	0.1	8.8	0.3	0.1	13.8	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.9	0.6	4.4	2.5	0.3	0.7	3.2	0.3	0.3	9.1	0.7
LnGrp Delay(d),s/veh	32.5	25.7	25.6	32.7	27.3	25.2	47.2	7.8	6.3	53.1	11.6	7.2
LnGrp LOS	C	C	C	C	C	C	D	A	A	D	B	A
Approach Vol, veh/h		188			348			664			1338	
Approach Delay, s/veh		29.5			30.4			9.3			11.7	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.5	53.3		21.5	6.8	52.0		21.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	47.5		23.5	5.5	47.5		23.5
Max Q Clear Time (g_c+I1), s	2.4	8.5		13.2	3.2	20.0		15.5
Green Ext Time (p_c), s	0.0	20.8		1.7	0.0	17.0		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.0
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	15	3	2	21	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	3	2	22	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	31	23	23	0	-	0
Stage 1	23	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	983	1054	1592	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	981	1054	1592	-	-	-
Mov Cap-2 Maneuver	981	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1013	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1592	-	1054	-	-
HCM Lane V/C Ratio	0.002	-	0.015	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	28	3	43	60	11	1	0	18	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	32	3	49	68	12	1	0	20	5	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	81	0	0	35	0	0	235	237	34	241	232	74
Stage 1	-	-	-	-	-	-	59	59	-	172	172	-
Stage 2	-	-	-	-	-	-	176	178	-	69	60	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1517	-	-	1576	-	-	720	664	1039	713	668	988
Stage 1	-	-	-	-	-	-	953	846	-	830	756	-
Stage 2	-	-	-	-	-	-	826	752	-	941	845	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1517	-	-	1576	-	-	692	636	1039	677	640	988
Mov Cap-2 Maneuver	-	-	-	-	-	-	692	636	-	677	640	-
Stage 1	-	-	-	-	-	-	944	838	-	823	731	-
Stage 2	-	-	-	-	-	-	793	727	-	914	837	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	2.8	8.6	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1012	1517	-	-	1576	-	-	835
HCM Lane V/C Ratio	0.021	0.008	-	-	0.031	-	-	0.014
HCM Control Delay (s)	8.6	7.4	0	-	7.4	0	-	9.4
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	61	52	15	159	16	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	60	17	183	18	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	130	0	317	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	217	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1455	-	676	956
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	819	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1455	-	667	956
Mov Cap-2 Maneuver	-	-	-	-	667	-
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	808	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	679	-	-	1455	-
HCM Lane V/C Ratio	0.029	-	-	0.012	-
HCM Control Delay (s)	10.5	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	59	0	0	48	80	1296	181	52	733	96
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	61	0	0	50	83	1350	189	54	764	100

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1714	2577	382	2101	2483	769	764	0	0	1539	0	0
Stage 1	872	872	-	1611	1611	-	-	-	-	-	-	-
Stage 2	842	1705	-	490	872	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	58	25	616	30	29	344	845	-	-	428	-	-
Stage 1	312	366	-	109	162	-	-	-	-	-	-	-
Stage 2	325	145	-	529	366	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	41	20	616	23	23	344	845	-	-	428	-	-
Mov Cap-2 Maneuver	41	20	-	23	23	-	-	-	-	-	-	-
Stage 1	281	320	-	98	146	-	-	-	-	-	-	-
Stage 2	250	131	-	416	320	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	17.2	0.5	0.9
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	845	-	-	616	344	428	-	-
HCM Lane V/C Ratio	0.099	-	-	0.1	0.145	0.127	-	-
HCM Control Delay (s)	9.7	-	-	11.5	17.2	14.6	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.3	0.5	0.4	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	217	5	11	123	23	6	2	11	83	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	241	6	12	137	26	7	2	12	92	1	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	162	0	0	247	0	0	468	473	244	467	463	149
Stage 1	-	-	-	-	-	-	286	286	-	174	174	-
Stage 2	-	-	-	-	-	-	182	187	-	293	289	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1417	-	-	1319	-	-	505	490	795	506	496	898
Stage 1	-	-	-	-	-	-	721	675	-	828	755	-
Stage 2	-	-	-	-	-	-	820	745	-	715	673	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1417	-	-	1319	-	-	486	477	795	486	483	898
Mov Cap-2 Maneuver	-	-	-	-	-	-	486	477	-	486	483	-
Stage 1	-	-	-	-	-	-	709	664	-	814	747	-
Stage 2	-	-	-	-	-	-	798	738	-	690	662	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.5	11	13.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	626	1417	-	-	1319	-	-	518
HCM Lane V/C Ratio	0.034	0.015	-	-	0.009	-	-	0.208
HCM Control Delay (s)	11	7.6	0	-	7.8	0	-	13.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	152	114	31	95	67	21	37	1403	122	28	654	49
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	157	118	32	98	69	22	38	1446	126	29	674	51
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	299	356	303	259	356	303	64	2151	963	53	2130	953
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.04	0.61	0.61	0.03	0.60	0.60
Sat Flow, veh/h	1300	1863	1583	1232	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	157	118	32	98	69	22	38	1446	126	29	674	51
Grp Sat Flow(s),veh/h/ln	1300	1863	1583	1232	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.1	4.3	1.3	5.9	2.5	0.9	1.7	21.4	2.7	1.3	7.4	1.0
Cycle Q Clear(g_c), s	11.6	4.3	1.3	10.2	2.5	0.9	1.7	21.4	2.7	1.3	7.4	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	299	356	303	259	356	303	64	2151	963	53	2130	953
V/C Ratio(X)	0.52	0.33	0.11	0.38	0.19	0.07	0.60	0.67	0.13	0.55	0.32	0.05
Avail Cap(c_a), veh/h	438	555	471	391	555	471	124	2151	963	124	2130	953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	27.6	26.3	32.0	26.8	26.2	37.5	10.3	6.6	37.8	7.7	6.5
Incr Delay (d2), s/veh	1.4	0.5	0.2	0.9	0.3	0.1	8.7	1.7	0.3	8.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	2.3	0.6	2.1	1.3	0.4	1.0	10.7	1.2	0.7	3.7	0.5
LnGrp Delay(d),s/veh	33.1	28.1	26.5	32.9	27.1	26.3	46.2	12.0	6.9	46.3	8.1	6.6
LnGrp LOS	C	C	C	C	C	C	D	B	A	D	A	A
Approach Vol, veh/h		307			189			1610			754	
Approach Delay, s/veh		30.5			30.0			12.4			9.5	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	52.5		19.6	7.3	52.0		19.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	47.5		23.5	5.5	47.5		23.5
Max Q Clear Time (g_c+I1), s	3.3	23.4		13.6	3.7	9.4		12.2
Green Ext Time (p_c), s	0.0	17.9		1.5	0.0	24.7		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	7	11	9	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	12	9	11	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	46	13	16	0	-	0
Stage 1	13	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	964	1067	1602	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	989	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	956	1067	1602	-	-	-
Mov Cap-2 Maneuver	956	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	981	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1602	-	1067	-	-
HCM Lane V/C Ratio	0.007	-	0.007	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-