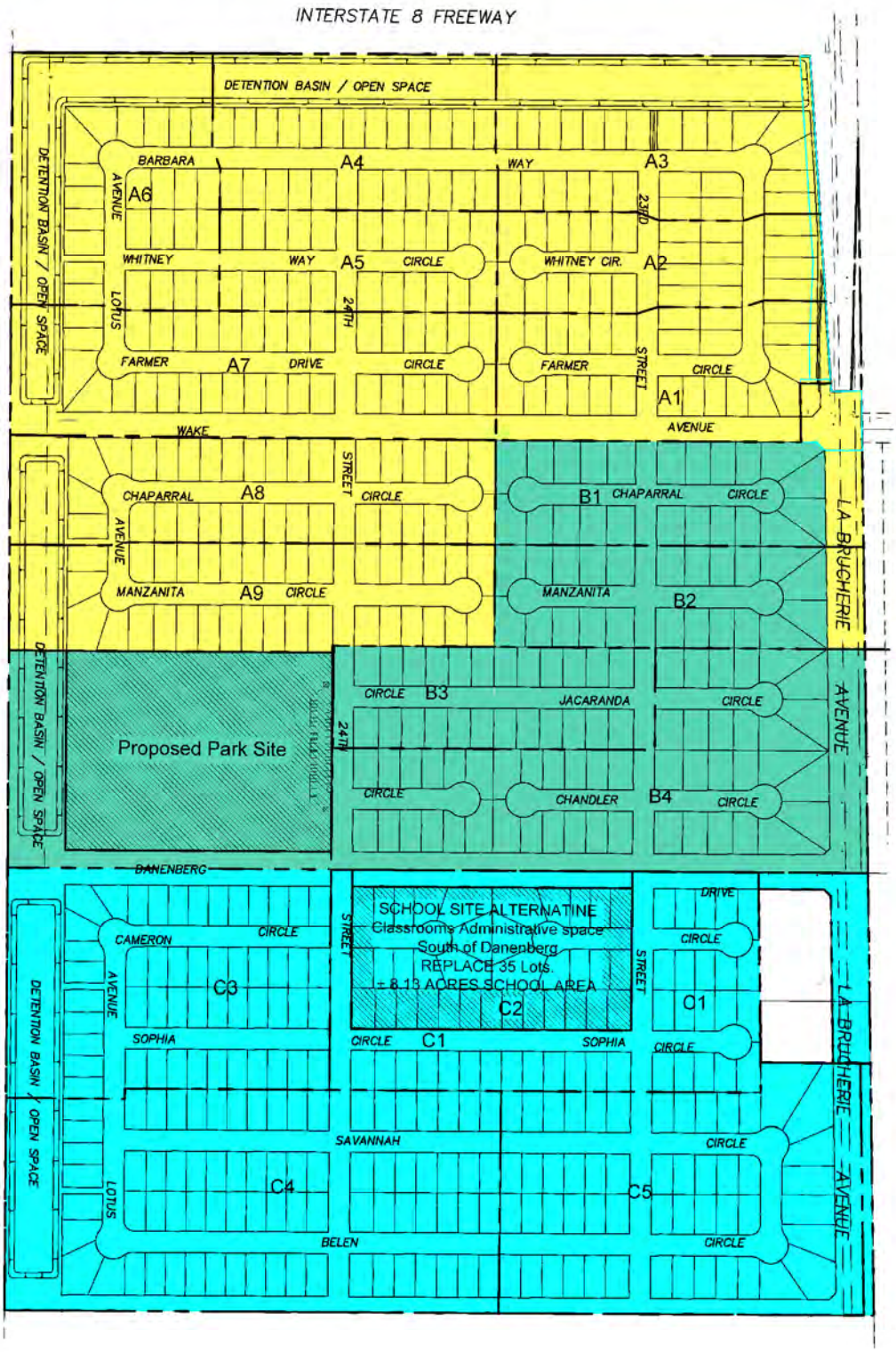
Dynamic CONSULTING ENGINEERS

PHASE A DATA TABLE	
PHASING UNIT	NO. OF LOTS
A1	25
A2	24
A3	25
A4	24
A5	22
A6	24
A7	35
A8	34
A9	34
TOTAL PHASE A = 247 LOTS	

PHASE B DATA TABLE	
PHASING UNIT	NO. OF LOTS
B1	22
B2	22
B3	24
B4	48
TOTAL PHASE B = 116 LOTS	

PHASE C DATA TABLE	
PHASING UNIT	NO. OF LOTS
C1	33
C2	35
C3	50
C4	76
C5	52
TOTAL PHASE C = 246 LOTS	



N:\Planning\17463 Lotus Ranch EIR\GIS\17463_Figure_2-4_PhasingMap.mxd

Source: G-MAC Development

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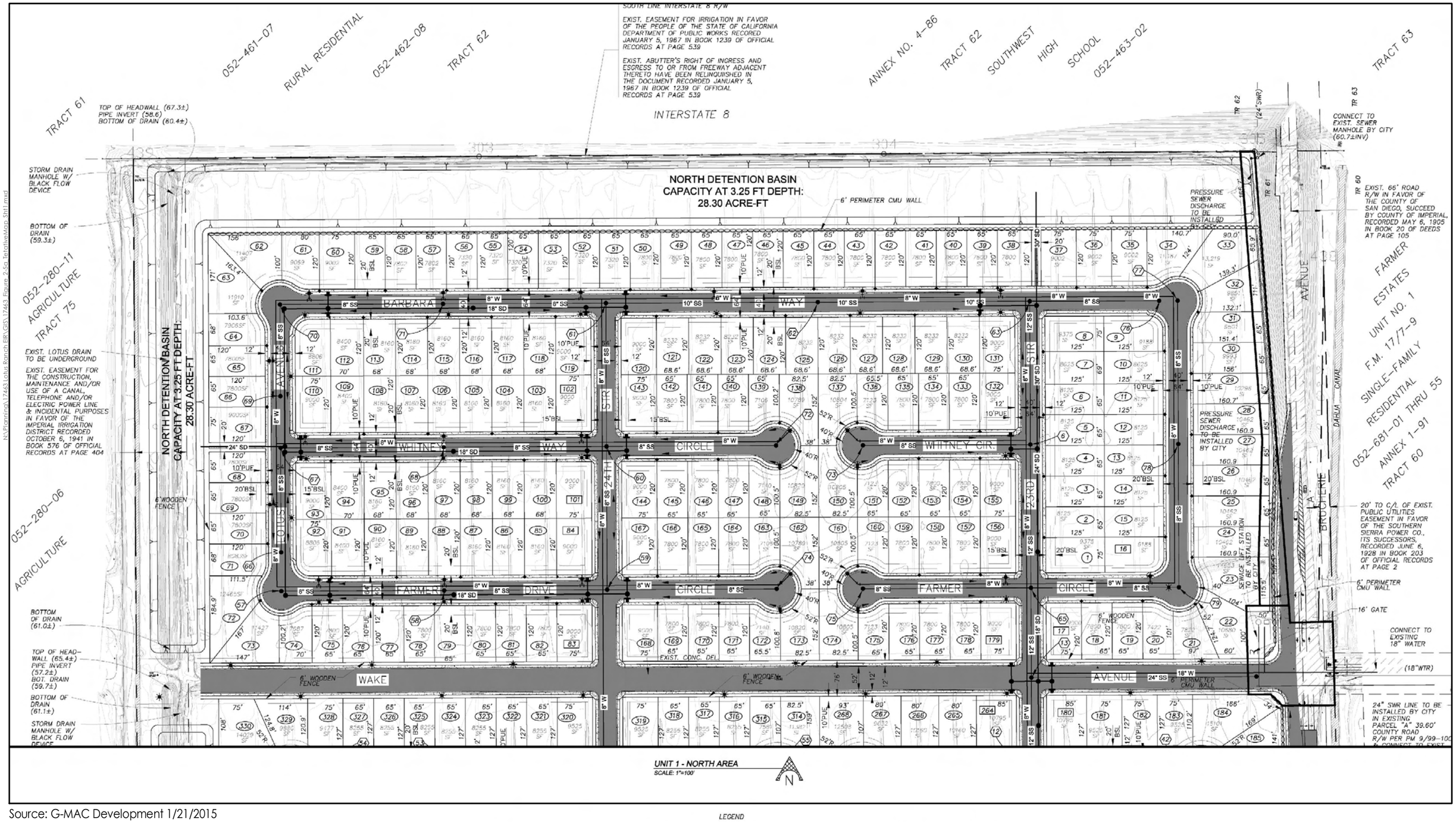
Phasing Map

Figure 2-4



Source: G-MAC Development 1/21/2015

LEGEND

- SUBDIVISION BOUNDARY
- LOTLINE
- RIGHT-OF-WAY LINE
- ASPHALT CONCRETE PAVING
- CONCRETE SIDEWALK
- CONCRETE CURB AND GUTTER
- BSL — BUILDING SETBACK LINE
- PUE — PUBLIC UTILITY EASEMENT
- WTR — WATER LINE (8" MIN.)
- SWR — SEWER LINE (8" MIN.)
- SD — STORM DRAIN LINE (12" MIN.)
- MANHOLE (48" MIN.)
- STORM DRAIN INLET (48" MIN.)
- STREET LIGHT (70 WATT HPS MIN.)
- FIRE HYDRANT (6" MIN.)
- (XXX) LOT NUMBER
- CONCRETE ACCESSIBILITY RAMP
- PWR., TELE., T.V. SERVICE POINT
- DIRECTION OF FLOW
- EXISTING SURFACE CONTOUR
- EXISTING ASPHALT CONC. PAVING
- —WTR— EXISTING WATER LINE
- —SWR— EXISTING SEWER LINE
- EXISTING CONC. CURB & GUTTER

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Tentative Subdivision Map, Sheet 1

Figure 2-5a

N:\Planning\17463.Lotus Ranch EIR\GIS\17463_Figure_2-5b_TentativeMap_Sht2.mxd

WAKE

AVENUE

CHAPARRAL

CIRCLE

MANZANITA

JACARANDA

CHANDLER

SOPHIA

CAMERON

DANENBERG

DRIVE

LOTUS AVENUE

STR

LA BRUCHERIE AVENUE

6' WOODEN FENCE

6' PERIMETER CMU WALL

CENTRAL DETENTION BASIN
CAPACITY AT 3.25 FT DEPTH:
9.82 ACRE-FT

PARK STORM DRAIN
(OVERFLOW 100 YR-EVENT)
CAPACITY AT 1 FT DEPTH:
7.00 ACRE-FT
±10.8 ACRES PARK AREA

052-380-03
AGRICULTURE
TRACT 75

EXIST. EASEMENT FOR THE CONSTRUCTION, MAINTENANCE AND/OR USE OF A CANAL, TELEPHONE AND/OR ELECTRIC POWER LINE & INCIDENTAL PURPOSES IN FAVOR OF THE IMPERIAL IRRIGATION DISTRICT RECORDED OCTOBER 6, 1941 IN BOOK 576 OF OFFICIAL RECORDS AT PAGE 404

EXIST. LOTUS DRAIN TO BE UNDERGROUND

BOTTOM OF DRAIN (61.1±)

STORM DRAIN MANHOLE W/ BLACK FLOW DEVICE

BOTTOM OF DRAIN (61.8±)

STORM WATER PUMP STATION

TOP OF FIELD BOX (64.0±)
PIPE INVERT (60.5±)
BOT. DRAIN (59.8±)

EXIST. 50' ROAD RIGHT-OF-WAY IN FAVOR OF COUNTY OF IMPERIAL PER P.M. 8-20 RECORDED MAR. 8, 1990

EXIST. FIELD ROAD

EXIST. CONC. DEL.

24" SWR LINE TO BE INSTALLED BY CITY IN EXISTING PARCEL "A" 39.60' COUNTY ROAD R/W PER PM 9/99-100 & CONNECT TO EXIST. SWR AT IMPERIAL AVE.

052-280-14
AGRICULTURE

EXISTING PARCEL "B" 60.00' COUNTY ROAD R/W PER PM 9/99-100

P.M. 9/99-100

EXIST. 66' ROAD R/W IN FAVOR OF THE COUNTY OF SAN DIEGO, SUCCEED BY COUNTY OF IMPERIAL RECORDED MAY 6, 1905 IN BOOK 20 OF DEEDS AT PAGE 105

EXIST. CONCRETE DELIVERY No. 25

AGRICULTURE
052-280-15

20' TO C/L OF EXIST. PUBLIC UTILITIES EASEMENT IN FAVOR OF THE SOUTHERN SIERRA POWER CO., ITS SUCCESSORS, RECORDED JUNE 6, 1928 IN BOOK 203 OF OFFICIAL RECORDS PAGE 2

052-280-16
RESIDENCES
TRACT 60

052-380-28

UNIT 1 - NORTH AREA
SCALE: 1"=100'

LEGEND

- SUBDIVISION BOUNDARY
- LOTLINE
- RIGHT-OF-WAY LINE
- ASPHALT CONCRETE PAVING
- CONCRETE SIDEWALK
- CONCRETE CURB AND GUTTER
- BSL — BUILDING SETBACK LINE
- PUE — PUBLIC UTILITY EASEMENT
- WTR — WATER LINE (8" MIN.)
- SWR — SEWER LINE (8" MIN.)
- SD — STORM DRAIN LINE (12" MIN.)
- MANHOLE (48" MIN.)
- STORM DRAIN INLET (48" MIN.)
- STREET LIGHT (70 WATT HPS MIN.)
- FIRE HYDRANT (6" MIN.)
- XXX — LOT NUMBER
- CONCRETE ACCESSIBILITY RAMP
- PWR., TELE., T.V. SERVICE POINT
- DIRECTION OF FLOW
- EXISTING SURFACE CONTOUR
- EXISTING ASPHALT CONC. PAVING
- WTR — EXISTING WATER LINE
- SWR — EXISTING SEWER LINE
- EXISTING CONC. CURB & GUTTER

Source: G-MAC Development 1/21/2015

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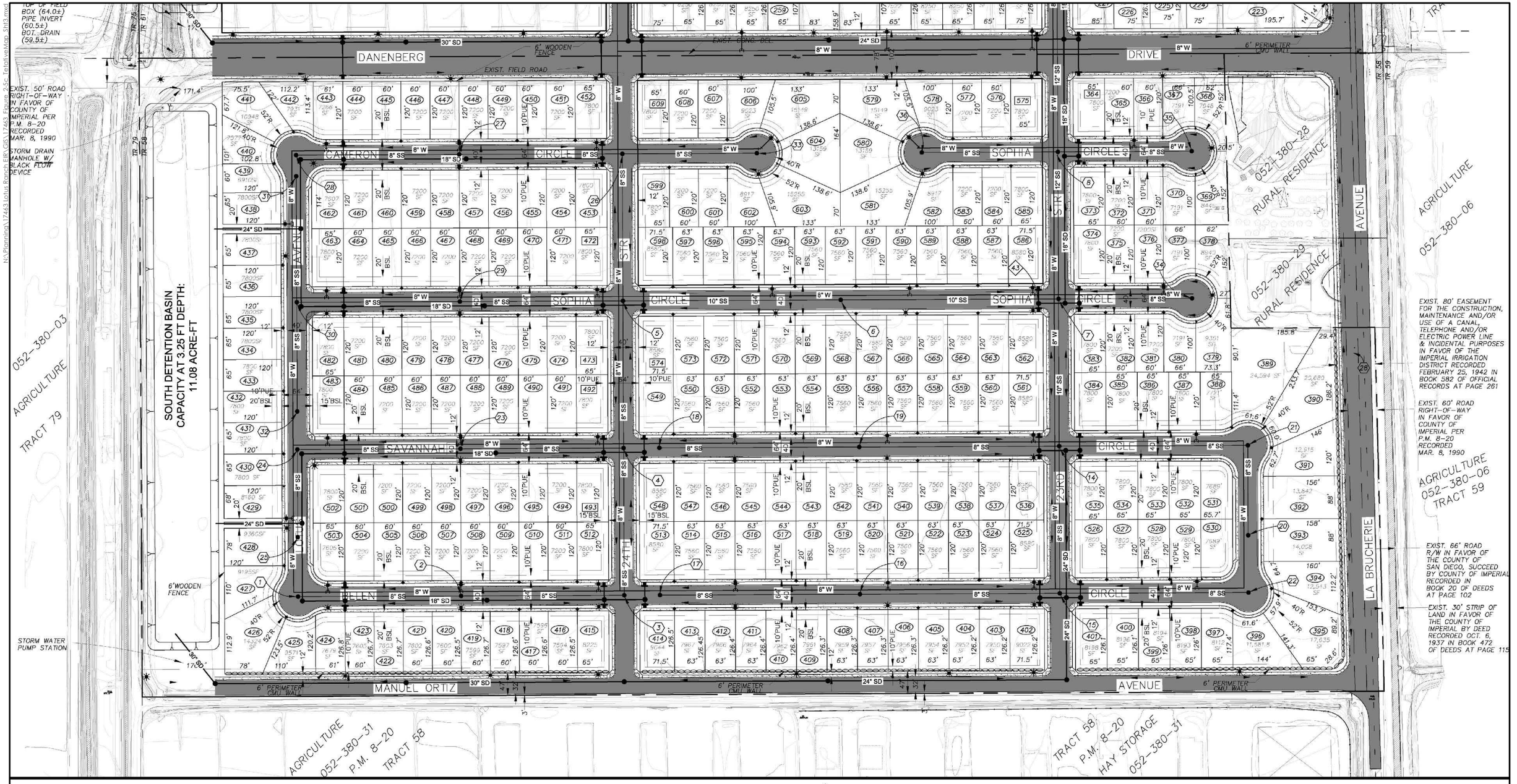
Tentative Subdivision Map, Sheet 2

Figure 2-5b



UNIT 1 - NORTH AREA
SCALE: 1"=100'

Source: G-MAC Development 1/21/2015

LEGEND

- SUBDIVISION BOUNDARY
- LOTLINE
- RIGHT-OF-WAY LINE
- ASPHALT CONCRETE PAVING
- CONCRETE SIDEWALK
- CONCRETE CURB AND GUTTER
- BSL — BUILDING SETBACK LINE
- PUE — PUBLIC UTILITY EASEMENT
- WTR — WATER LINE (8" MIN.)
- SWR — SEWER LINE (8" MIN.)
- SD — STORM DRAIN LINE (12" MIN.)
- MANHOLE (48" MIN.)
- STORM DRAIN INLET (48" MIN.)
- STREET LIGHT (70 WATT HPS MIN.)
- FIRE HYDRANT (6" MIN.)
- XXX — LOT NUMBER
- CONCRETE ACCESSIBILITY RAMP
- PWR., TELE., T.V. SERVICE POINT
- DIRECTION OF FLOW
- EXISTING SURFACE CONTOUR
- EXISTING ASPHALT CONC. PAVING
- WTR — EXISTING WATER LINE
- SWR — EXISTING SEWER LINE
- EXISTING CONC. CURB & GUTTER

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Tentative Subdivision Map, Sheet 3

Figure 2-5c

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SECTION 3
ENVIRONMENTAL SETTING

The site is located in unincorporated land in the south-central portion of the County of Imperial (County), which comprises the southeastern corner of the State of California (State). Imperial County extends over 4,597 square miles, bordering on Mexico to the south, Riverside County to the north, San Diego County to the west, and the State of Arizona to the east. Imperial County is roughly superimposed over the Imperial Valley, which has a relatively level floor surrounded by the Chocolate Mountains to the east and the Laguna Mountains to the west. The international border with Mexico is located approximately 13 miles south of the site. The region experiences an arid desert climate, with temperatures ranging from lows in the mid-30s in January to highs of over 100 degrees in July and August, with little moisture (average annual rainfall: 2.92 inches). Suitable soil and an extensive canal irrigation system make agriculture the largest industry in the region, accounting for 48 percent of all employment within the County.

Within Imperial County are three main urban areas: the incorporated cities of El Centro, Brawley, and Calexico. The project site is adjacent to the incorporated boundaries of the City of El Centro (City), which is the largest of these three in terms of population and area, at an estimated 43,856 residents and approximately 11 square miles. The City is surrounded by thousands of acres of farmland, reflecting the historic importance of agricultural to its economy. The United States Navy has a military installation west of the City. There are two international border crossings nearby for commercial and noncommercial vehicles. The project site abuts the southern incorporated boundary of the City and is within the City's adopted Sphere of Influence boundaries.

As shown in Figure 2-2, the project site is a rectangular parcel of approximately 213 acres. It is comprised of flat agriculture land. On-site elevations range from approximately 67 to 72 feet above mean sea level (excluding the bottom of the Lotus Drain, which runs to approximately 59 feet above mean sea level). The agricultural land is currently fallowed but previously consisted of broccoli and alfalfa production.

Three east-west dirt paths traverse the project site along the would-be alignments of Wake Avenue, Danenberg Drive, and Manuel Ortiz Avenue. ~~One rural, single-family residence and several associated structures, all of which are related to the past agricultural operations on the site, are located near the site's eastern boundary and north of the northern dirt road (Wake Avenue). These structures are within the project boundaries and are to be demolished as part of the project.~~ Two ~~additional~~ rural, single-family residences are located along the site's eastern boundary and south of the southern dirt road (Danenberg Drive). These two residences are on separate parcels from the project site, are not a part of the project site, and are not planned for demolition as part of the project. However, these two residences are expected to be annexed into the City of El Centro as part of the project and LAFCO process. The northern of these two residences is surrounded by several structures related to agricultural operations. Two such structures located west of the residence are within the project boundaries and would be demolished as part of the project.

The site is bordered by I-8 to the north, the Lotus Canal and Lotus Drain to the west, the Dahlia Canal and La Brucherie Avenue to the east, and active agricultural land to the south. The future extension of Manuel Ortiz Avenue (to be built as part of the project) provides the site's southern boundary. Land uses surrounding the site include Southwest High School and single-family residences to the north across I-8, agricultural land to the west across the operational Lotus Canal and Drain, existing single-family residences and agricultural land to the east across La Brucherie Avenue, and an active hay storage and feed lot area to the south. Surrounding land is also flat, although I-8 and the adjacent canals sit on higher elevations with engineered embankments.

Land immediately north of the site across I-8 is variably within and outside the incorporated limits of the City. The western border of Southwest High School represents the present western City boundary, and the existing single-family residential neighborhood west of the school (bound by Ross Road in the north, I-8 in the south, Southwest High School and residential development in the east, and Road 8017 in the west) is within unincorporated County land.

View of Agricultural Land (Fallow) along the Southern Boundary of the Project Area, Looking East. Photo Date: 10/20/2014

View of Agricultural Land (Fallow) within the Project Area, Looking Northwest. Photo Date: 10/20/2014

N:\Planning\17463 Lotus Ranch EIR\GIS\17463_Figure_3-1_SitePhotosAg.mxd

Source: RECON (2015)

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View of Site

Figure 3-1

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SECTION 4
ENVIRONMENTAL ANALYSIS

The following section presents analysis of the environmental issues identified through the DEIR process as having potentially significant direct impacts (i.e., resultant of the project itself, as opposed to cumulative impacts) and the mitigation measures that have been identified to avoid or reduce the impacts. Subsections are dedicated to the following issues: agriculture, air quality, biological resources, geology / soils, greenhouse gas emissions, hydrology / water quality, noise, transportation / traffic, and public services. All direct impacts can be avoided or reduced to less-than-significant levels by the mitigation measures discussed herein. Issue areas for which the project's direct impacts were determined to be less than significant (either through the Initial Study scoping process or the DEIR process) are discussed in Section 9 of this DEIR. Cumulative impacts are discussed in Section 7 of this DEIR.

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4.1 AGRICULTURAL RESOURCES

The purpose of the Agriculture Resources section is to determine whether implementation of a project would result in significant environmental impacts to agricultural resources. The analysis identifies the status of agricultural land that would be converted to non-agricultural use by implementation of the project.

Imperial County contains one of the most productive and important agricultural areas in the state of California, with an annual crop production of over $1.9 billion. This accomplishment is due to several environmental factors including rich soils, the availability of adequate water transported from the Colorado River by a complex canal system, extensive areas committed to agricultural production, a gently sloping topography, and a climate that is well-suited for growing crops and raising livestock. According to the California Department of Conservation, out of the County's total land area of 2,942,080 acres, approximately 500,000 acres is agricultural land. The County's economy has historically been dependent upon agricultural production, and this dependency will exist in the foreseeable future, with 498,565 acres designated as Prime Farmland or Farmland of Statewide Importance. However, it is also important to recognize that there will be some net losses of existing important farmland with continuing population growth and a commitment to developing large-scale renewable energy projects. Proper zoning and land use designations can accommodate both the natural growth and opportunities for renewable energy development with the needs of the agricultural industry and prevent "leapfrog development."

4.1.1 Existing Conditions

The project site is generally flat agricultural land that was used to cultivate broccoli and alfalfa but is currently not in an agricultural operation. ~~Two~~ Three east-west dirt paths traverse the project site along the would-be alignments of Wake Avenue, Danenberg Drive, and Manuel Ortiz Avenue. ~~One rural, single-family residence and several associated structures, all of which are related to past agricultural operations on the site, are located near the site's eastern boundary and north of the northern dirt road (Wake Avenue alignment). These structures are within the project boundaries and are to be demolished as part of the project.~~ Two ~~additional~~ rural, single-family residences are located along the site's eastern boundary and south of the southern dirt road (Danenberg Drive). These two residences are on separate APNs from the project site, are not a part of the project site, and are not planned for demolition as part of the project. However, these two residences are expected to be annexed into the City of El Centro as part of this project. Directly north of the site is Interstate 8, Southwest High School, and rural single family homes adjacent to the school. Southwest High School serves more than 2,300 students in grades nine through twelve, with a staff of 91 to support the students.

To the south is El Toro Export, an agricultural business operating at 1469 S. La Brucherie Avenue. The El Toro Export facility is open 24 hours a day and houses three operations: a Compress Operation, Truck Operation, and feed lot. In addition, El Toro Export neighbors and shares space with a farming operation, La Brucherie Produce, LLC. A total 149 employees report daily with the potential for more as the business grows.

To the east is the Dahlia Canal and the Farmer Estates Subdivision, which includes one-story single-family homes, as well as agricultural lands immediately south. To the west is agricultural crop land.

Applicable Regulations, Plans, and Policies

4.1.2 Impact Significance Criteria

Appendix G of the State CEQA Guidelines provides guidance that a project would have a significant environmental impact if it would:

- 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 nonagricultural use;

- Conflict with existing zoning for agricultural use, or a Williamson Act contract;

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

4.1.3 Impact Analysis

The project proposes annexation of an approximately 213-acre area from the County to the City, subdivision of the existing lots, and construction and occupation on those lots of a 609-unit single-family residential development and one park consisting of ±10.8 acres. According to the state of California's Farmland Mapping and Monitoring Program (FMMP) the project site is designated as approximately 30 percent Prime Farmland and 70 percent Farmland of Statewide Importance (see Figure 4.1-1, Imperial County Important Farmlands Map) and this proposed project would result in the conversion of agricultural land to non-agricultural use. However, the County of Imperial designated the project site as an Urban Area in the Land Use Element of the Imperial County General Plan and the City of El Centro has designated the land Low Density Residential. The County anticipates these urban areas will eventually be annexed or incorporated as the population increases (See Figure 4.1-2, Imperial County Land Use Map, 2007). The Agricultural Element of the Imperial County General Plan specifically states: "Recognizing that population growth will occur, it is obvious that there will be some net losses of existing important farmland." The Local Agency Formation Commission (LAFCO) established spheres of influence that include the Urban Area designation for the project site. In addition, the loss of Prime Farmland and Farmland of Statewide Importance represents less than 1 percent of the County's total 498,565 acres. Therefore, the project will not have a significant impact on the loss of prime and statewide-important agricultural resources.

The proposed annexation by the City would change the zoning of the site from the current A2U (General Agriculture – Urban) designation under the County to the City's R-1 (Single-Family Residential). Although the proposed project's use conflicts with the existing zoning for agricultural use, the proposed zoning is consistent with the City and County's future growth plans as

previously stated. In addition, the Land Use Element of the El Centro General Plan identifies an Urban Development Program that delineates specific geographic areas for new development.

The placement of residences adjacent to agricultural lands has the potential to create land use conflicts and impacts, particularly from the El Toro Export immediately south, and from agricultural properties to the west. ~~These impacts~~Impacts to the residential area include noise from heavy machinery and equipment, odor from the cattle feed lot, dust from the movement of machinery, light/glare/noise from nighttime operations, traffic from trucks/tractors, and fire risk from the hay storage. Impacts to agricultural operations to the west could include reduced access La Brucherie Avenue. It should further be noted that CEQA focuses on a proposed project's impact to the environment and not necessarily the environment's impact on a proposed project. The project site is not party to a Williamson Act contract.

In order to preserve agricultural lands and reduce those potential land use conflicts, the County adopted the "Right-to-Farm" Ordinance (Ordinance No. 1031) on August 7, 1990. The ordinance advises purchasers and users of properties adjacent to and within ¼ of a mile of agricultural lands about the potential problems and inconveniences associated with agricultural operations. The ordinance also establishes a "County Agricultural Grievance Committee" to settle disputes between agriculturalists and adjacent property owners.

To eliminate health effects on residents resulting from agricultural use, the Imperial County Agricultural Commission adopted Pesticide Use Policies that restrict the aerial ~~and ground~~ applications of pesticides. This policy prohibits the use of aerial applications within ~~½ mile~~100 feet of residential areas (defined as three or more contiguous and inhabited properties).~~, and ground applications within ¼ mile of residential areas.~~ Therefore, a 100 foot buffer zone must be maintained by aerial applicators of pesticides on the western agricultural field adjacent to the project site, due to proximity of the field to the residential development. ~~would be prohibited from both ground and aerial applications given its location within both the ¼ and ½ mile distance requirements.~~

4.1.4 Significant Impacts

AGR 1 The proposed project could potentially create land use conflicts with the adjacent agricultural properties; particularly the cattle feed lot immediately south.

4.1.5 Mitigation Measures

AGR 1.1 The layout of the project site is designed to reduce potential land use conflicts between the proposed single-family homes and adjacent agricultural lands by creating a "buffer zone" between the homes and the farmland. This buffer zone consists of stormwater detention basins located on the west side of the site that also serve as open space for the residents. To the south, Manuel Ortiz buffers the residences from El Toro Export.

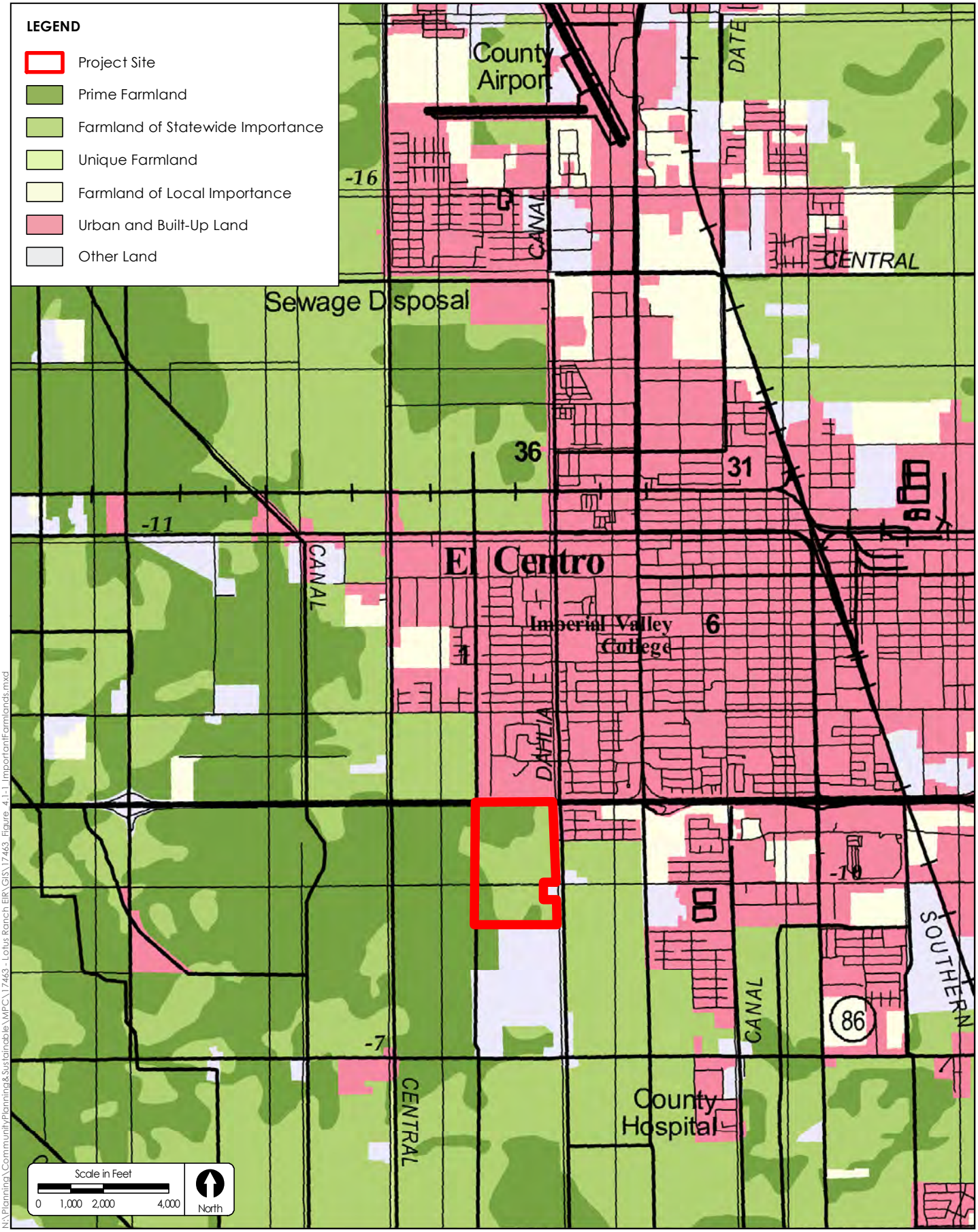
AGR 1.2 The development shall include the construction of a six (6) foot barrier fence or wall to further separate the southern-most residences from Manuel Ortiz Avenue and the El Toro Export facilities to the south.

AGR 1.3 To reduce the risk of fires on the hay storage facility immediately south, the City should enact an ordinance prohibiting the use of fireworks and open fires on the project site.

AGR 1.4 To reduce potential conflicts with future residents and existing agricultural operations, and to advise future residents of potential agricultural impacts (traffic, odor, noise, etc.), the Applicant will be required to comply with the "Right to Farm Ordinance" and include an advisory notice on the Title for future purchasers.

4.1.6 Level of Significance after Mitigation

With mitigation measures, impacts to agricultural resources would be less than significant.



Date of Exhibit: 4/22/2015
Source: Imperial County Important Farmlands Map 2014

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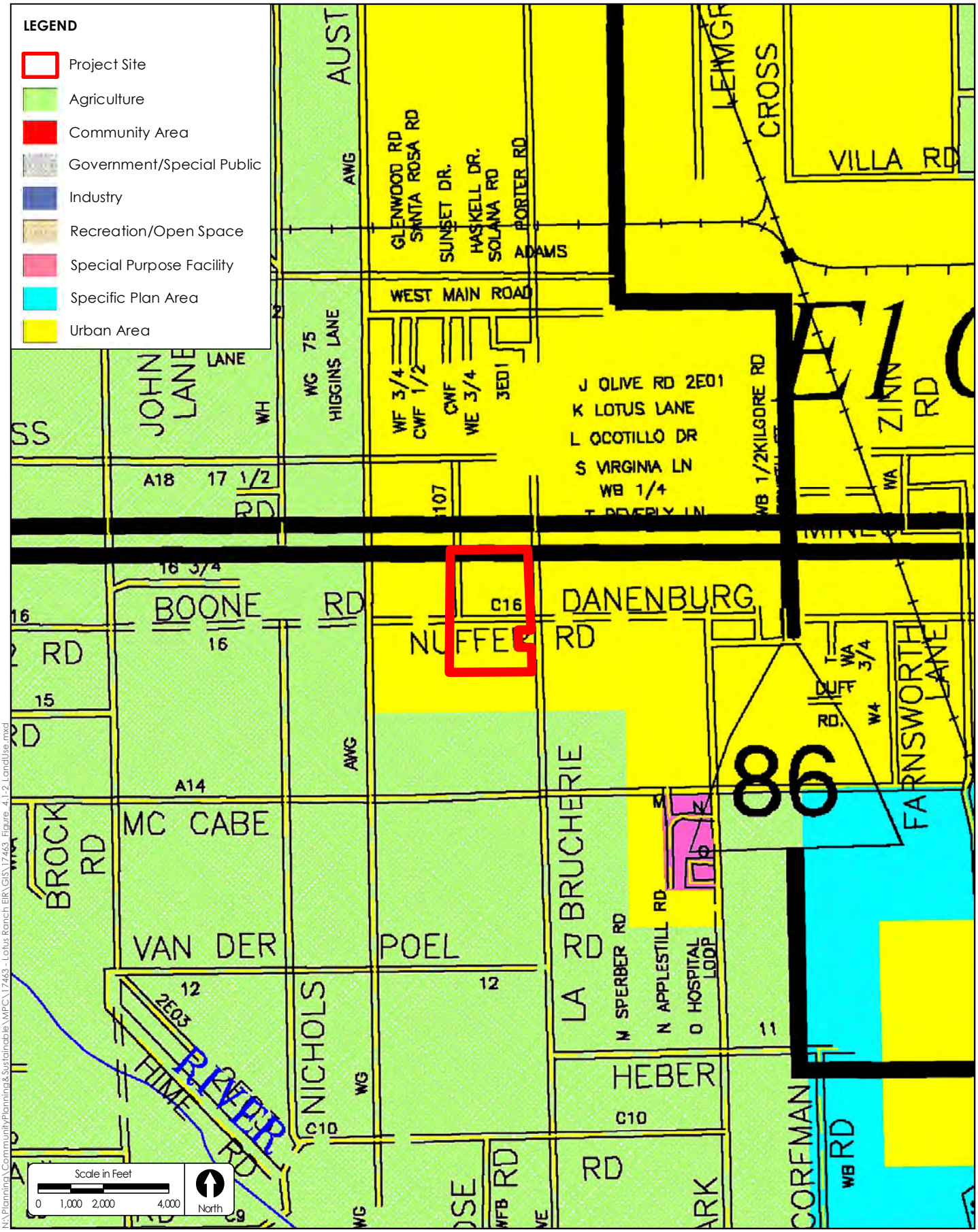
Imperial County Important Farmlands

Figure 4.1-1



N:\Planning\CommunityPlanning&Sustainable\MPC\17463 - Lotus Ranch EIR\GIS\17463_Figure_4.1-2_LandUse.mxd

Date of Exhibit: 4/22/2015
Source: Imperial County Land Use Map 2014

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Imperial County Land Use Map

Figure 4.1-2

4.2 AIR QUALITY

This section discusses the potential air quality impacts associated with the project. RECON Environmental Inc. prepared an Air Quality Analysis that discusses the impacts related to construction and operation emissions. Construction-related air emission estimates were developed based on the proposed construction activities and equipment. Operation-related emissions were based on vehicle trips as well as the area sources planned for the project. The air quality model outputs reflect the most recent project description and are included as Appendix A to this DEIR.

4.2.1 Existing Conditions

4.2.1.1 Geographic Setting

The project is located in the City of El Centro, within Imperial County and ~~in~~ the Salton Sea Air Basin (SSAB). Imperial County is bordered on the south by Mexico, on the east by Arizona, on the west by the ~~Coyote and Fish Creek Mountains~~ County of San Diego, and on the north by Riverside County. The elevation in Imperial County ranges from approximately 230 feet below sea level at the Salton Sea to the north to more than 2,800 feet in the mountains to the east (CARB 2010).

4.2.1.2 Climate and Meteorology

Air quality is a function of both the rate and location of pollutant emissions and how meteorological conditions and topographic features influence these pollutants. Atmospheric conditions such as wind speed, direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, and consequently affect air quality.

The desert region of Imperial County in the area of El Centro is one of the hottest and driest parts of California, with a climate characterized by hot, dry summers and relatively mild winters. In El Centro, the normal maximum temperature in the winter is 71 degrees Fahrenheit (ºF); the normal minimum temperature is 41ºF, and the average temperature is 56ºF. In the summer, the normal maximum temperature is 106ºF, the normal minimum temperature is 73ºF, and the average temperature is 90 ºF. Normal annual precipitation in El Centro is 2.64 inches (Western Regional Climate Center 2014).

During the summer, the Pacific High Pressure Zone is well-developed to the west of California and a thermal trough overlies California's southeast desert region. The intensity and orientation of the trough varies from day to day. Although the rugged mountainous country surrounding the Imperial Valley inhibits circulation, the influence of the trough does permit some inter-basin exchange of air with more westerly coastal locations through the mountain passes.

Relative humidity in summer is very low, averaging 30 to 50 percent in the early morning and 10 to 20 percent in the afternoon. During the hottest part of the day, a relative humidity below 10 percent is common, although the effect of extensive agricultural operations in the Imperial

Valley tends to raise the humidity locally. The prevailing weather conditions promote intense heating during the day in summer with marked cooling at night. During all seasons, the prevailing wind direction is from the south and west.

4.2.1.3 Applicable Regulations, Plans, and Policies

Air quality in the United States is governed by the Federal Clean Air Act (CAA). In addition to being subject to requirements of the CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). At the federal level, the CAA is administered by the United States Environmental Protection Agency (EPA). In California, the CCAA is administered by the California Air Resources Board (CARB) at the state level and by the Imperial County Air Pollution Control District (ICAPCD) at the regional and local levels.

Federal Regulations

Ambient air quality standards (AAQS) represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. The federal Clean Air Act (CAA) was enacted in 1970 and amended in 1977 and 1990 [42 United States Code (U.S.C.) 7401] for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity. In 1971, in order to achieve the purposes of Section 109 of the federal CAA [42 U.S.C. 7409], the U.S. EPA developed primary and secondary national ambient air quality standards (NAAQS).

Six criteria pollutants of primary concern have been designated: ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), and particulate matter. Particulate matter is divided into two sizes; "respirable" particulate matter has a diameter of 10 micrometers or less (PM_{10}) and "fine" particulate matter has a diameter of 2.5 micrometers or less ($PM_{2.5}$). Primary NAAQS ". . . in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health . . . " and secondary standards ". . . protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air" [42 U.S.C. 7409(b)(2)]. The NAAQS are presented in Table 1 of Appendix A.

Specific geographic areas are classified as either "attainment" or "nonattainment" areas for each pollutant based on the comparison of measured data with the NAAQS. If an area is non-attainment for ozone, the area is classified as a non-attainment marginal, moderate, serious, severe, or extreme area. If an area is redesignated from nonattainment to attainment for any criteria pollutant, the area is termed a "maintenance area" for 10 years following redesignation. The federal CAA requires maintenance areas to prepare a maintenance plan to demonstrate how the air quality standard will be maintained for a 10-year period with a requirement to demonstrate attainment over a 20-year period.

The SSAB is designated a non-attainment area for the federal 8-hour ozone standard, a non-attainment area for the federal PM10 standard, and a non-attainment area for the federal PM2.5 standard. It is a designated attainment for all other the NAAQS.

The SSAB is designated a non-attainment area for the federal 8-hour ozone standard, a non-attainment area for the federal PM_{10} standard, and a non-attainment area for the federal $PM_{2.5}$ standard. It is a designated attainment for all other the NAAQS.

State Regulations

The federal CAA requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The SIP is a collection of documents that set forth the state's strategies for achieving the air quality standards. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. U.S. EPA must review all state SIPs to determine whether they conform to the mandates of the federal CAA, and to determine whether implementing them will achieve air quality goals. The ICAPCD is responsible for preparing and implementing the portion of the SIP applicable to the Imperial County portion of the SSAB. CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California, and for implementing the California CAA. The California CAA, which was adopted in 1988, required CARB to establish the California Ambient Air Quality Standards (CAAQS) (Table 1 of Appendix A). California generally has set stricter standards for the six criteria pollutants. In addition to the criteria pollutants regulated in the federal CAA, CAAQS also specify standards for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride (see Table 1 of Appendix A). Similar to the federal CAA, the state classifies specific geographic areas as either "attainment" or "nonattainment" areas for each pollutant based on the comparison of measured data with the CAAQS. The SSAB is a nonattainment area for the state ozone, $PM_{10,}$ and $PM_{2.5}$ standards. It is in attainment of the state's standards for all of the other criteria air pollutants.

The California CAA requires that districts assess their progress triennially and report to CARB as part of the triennial plan revisions. The act also specifies that local air districts should focus particular attention on reducing the emissions from transportation and area wide emission sources, and the Act provides districts with the authority to regulate indirect sources. Through statewide programs to encourage cleaner cars and cleaner fuels, California has reduced smog-forming emissions from motor vehicles by 15 percent since 1996 and the cancer risk from exposure to motor vehicle air toxics by 40 percent.

The public's exposure to toxic air contaminants (TACs) is a significant public health issue in California. Diesel-exhaust particulate matter emissions have been established as TACs. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health (Assembly Bill [AB] 1807: Health and Safety Code Sections 39650–39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

The California Air Toxics Program establishes the process for the identification and control of TACs and includes provisions to make the public aware of significant toxic exposures and for reducing risk. Additionally, the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly Bill) was enacted in 1987. The act requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of the Air Toxics "Hot

Spots" Act are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels. The Children's Environmental Health Protection Act, California Senate Bill 25 (Chapter 731, Escutia, Statutes of 1999), focuses on children's exposure to air pollutants. The act requires CARB to review its air quality standards from a children's health perspective, evaluate the statewide air quality monitoring network, and develop any additional air toxic control measures needed to protect children's health.

Diesel-exhaust particulate matter was established as a TAC in 1998, and is estimated to represent a majority of the cancer risk from TACs statewide (based on the statewide average). Diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB and are listed as carcinogens either under the state's Proposition 65 or under the federal Hazardous Air Pollutants program.

As an ongoing process, CARB continues to establish new programs and regulations for the control of diesel-particulate and other air-toxics emissions as appropriate. The continued development and implementation of these programs and policies will ensure that the public's exposure to diesel particulate matter will continue to decline.

Imperial County Air Pollution Control District (ICAPCD)

The ICAPCD is the agency that regulates air quality in the SSAB. The ICAPCD provides guidance to mitigate adverse impacts to air quality from development projects within Imperial County. The ICAPCD has prepared guidelines for the implementation of the California Environmental Quality Act (CEQA) in their "CEQA Air Quality Handbook" (2007). The document is intended to develop and adopt protocol for addressing air quality impacts in the SSAB. The ICAPCD has also established a set of rules and regulations initially adopted on October 15, 1979, that are periodically reviewed and updated.

4.2.1.4 Existing Air Quality

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

Air quality is commonly expressed as the number of days in which air pollution levels exceed state standards set by the CARB or federal standards set by the EPA. The ICAPCD maintains air quality monitoring stations throughout Imperial County. Air pollutant concentrations and meteorological information are continuously recorded at these stations. Measurements are then used by scientists to help forecast daily air pollution levels. The El Centro–Ninth Street monitoring station, located approximately 1.5 miles northeast of the project site, is the nearest station to the project area. Ozone, carbon monoxide, nitrogen dioxide, PM_{10}, and $PM_{2.5}$ are monitored at the Ninth Street monitoring station.

The following is a summary of the current air quality conditions in the SSAB and City of El Centro.

Ozone

O_3 is a colorless toxic gas, which is the chief component of urban smog. It enters the blood stream and interferes with the transfer of oxygen, depriving sensitive tissues in the heart and brain of oxygen. It also damages vegetation by inhibiting their growth. Although O_3 is not directly emitted, it forms in the atmosphere through a chemical reaction between reactive organic gas (ROG) and NO_X under sunlight. The damaging effects of photochemical smog are generally related to the concentration of O_3. Meteorology and terrain play major roles in O_3 formation. Ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. The greatest source of smog-producing gases is the automobile.

Nitrogen oxides (NOX) and hydrocarbons (known as volatile organic compounds [VOC] or reactive organic gases [ROG]) are known as the chief "precursors" of ozone. These compounds react in the presence of sunlight to produce ozone, which is the primary air pollution problem in the SSAB. Because sunlight plays such an important role in its formation, ozone pollution, or smog, is mainly a concern during the daytime in summer months. The SSAB is currently designated a federal and state non-attainment area for ozone.

In order to address adverse health effects due to prolonged exposure, the U.S. EPA phased out the national 1-hour ozone standard and replaced it with the more protective 8-hour ozone standard. The SSAB is designated a nonattainment area for the national 8-hour standard of 0.075 parts per million (ppm).

In the SSAB overall, during the five-year period of 2010 to 2014, the national 8-hour standard of 0.075 was exceeded 63 days in 2010, 59 days in 2011, 58 days in 2012, 53 days in 2013, and 38 days in 2014. The stricter state 8-hour ozone standard of 0.07 ppm was exceeded 94 days in 2010, 81 days in 2011, 93 days in 2012, 89 days in 2013, and 71 days in 2014.

Also during the five-year period of 2010 to 2014, the state 1-hour standard (0.09 ppm) was exceeded 24 days in 2010, 29 days in 2011, 27 days in 2012, 20 days in 2013, and 14 days in 2014.

At the Ninth Street monitoring station, the national 8-hour standard was exceeded 10 days in 2010, 12 days in 2011, 14 days in 2012, 11 days in 2013, and 5 days in 2014. The state 8-hour standard was exceeded 29 days in 2010, 21 days in 2011, 26 days in 2012, 23 days in 2013, and 13 days in 2014. The state 1-hour standard was exceeded 3 days in 2010, 5 days in 2011, 9 days in 2012, 7 days in 2013, and 2 days in 2014.

Carbon Monoxide

CO is a colorless and odorless gas, which can interfere with the transfer of oxygen to the brain. It can cause dizziness and fatigue, and can impair central nervous system functions. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. In urban areas, CO is emitted by motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. Automobile exhausts release most of the CO in urban areas. CO is a non-reactive air pollutant that dissipates relatively quickly, so ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions; primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest CO concentrations measured in Imperial County are typically recorded during the winter.

The SSAB is classified as a state and federal attainment area for carbon monoxide. CO levels did not exceed state or federal standards during the period from 2010 to 2014 in the SSAB.

Small-scale, localized concentrations of carbon monoxide above the state and national standards have the potential to occur at intersections with stagnation points, such as those that occur on major highways and heavily traveled and congested roadways. Localized high concentrations of CO are referred to as "CO hot spots," and are a concern at congested intersections when automobile engines burn fuel less efficiently and their exhaust contains more CO.

PM_{10}

PM_{10} is particulate matter with an aerodynamic diameter of 10 microns or less. Ten microns is about one-seventh of the diameter of a human hair. Particulate matter is a complex mixture of very tiny solid or liquid particles composed of chemicals, soot, and dust. Sources of PM_{10} emissions in the SSAB consist mainly of urban activities, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere.

Under typical conditions (i.e., no wildfires) particles classified under the PM_{10} category are mainly emitted directly from activities that disturb the soil including travel on roads and construction, mining, or agricultural operations. Other sources include windblown dust, salts, brake dust, and tire wear.

The SSAB is designated as a federal and state nonattainment area for PM_{10}. Overall in the SSAB, measured PM_{10} levels exceeded the state standard 43 days in 2010, 93 days in 2011, 103 days in 2012, 144 days in 2013, and 190 days in 2014. Measured PM_{10} levels exceeded the federal standard 2 days in 2011, 2 days in 2012, 3 days in 2013, and 3 days in 2014.

At the Ninth Street monitoring station, measured PM_{10} levels did not exceed the federal 24-hour PM_{10} in 2010 through 2014. Measured PM_{10} levels exceeded the stricter state 24-hour PM_{10} standard 5 days in 2010, 9 days in 2011, 6 days in 2012, 10 days in 2013, and 15 days in 2014.

$PM_{2.5}$

Airborne, inhalable particles with aerodynamic diameters of 2.5 microns or less have been recognized as an air quality concern requiring regular monitoring. Federal $PM_{2.5}$ standards established in 1997 include an annual arithmetic mean of 15 µg/m3 and a 24-hour concentration of 65 µg/m3. As discussed above, the 24-hour $PM_{2.5}$ standard has been changed to 35 µg/m3. State $PM_{2.5}$ standards established in 2002 are an annual arithmetic mean of 12 µg/m3.

The SSAB is designated as a federal nonattainment area for $PM_{2.5}$. Overall in the SSAB, measured $PM_{2.5}$ levels exceeded the federal standard 2 days in 2010, 3 days in 2011, 2 days in 2012, 1 day in 2013, and 9 days in 2014. The federal standard was exceeded for 2 days in 2011 at the Ninth Street monitoring station.

Other Criteria Pollutants

The national and state standards for NO_2, oxides of sulfur (SOx), and previous standard for lead are being met in the SSAB, and the latest pollutant trends suggest that these standards will not be exceeded in the foreseeable future. New standards for these pollutants have been adopted, and new designations for the SSAB will be determined in the future. The SSAB is also in attainment of the state standards for hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. Air pollutants are recognized to have a variety of health effects on humans. Research by the California Air Resources Board shows that exposure to high concentrations of air pollutants can trigger respiratory diseases, such as asthma, bronchitis, and other respiratory ailments; and cardiovascular diseases. A healthy person exposed to high concentrations of air pollutants may be become nauseated or dizzy, may develop a headache or cough, or may experience eye irritation and/or a burning sensation in the chest. When air pollutants levels are high, a common occurrence in southern California, children, elderly, and people with respiratory problems are advised to remain indoors. Outdoor exercise also is discouraged because strenuous activity may cause shortness of breath and chest pains.

Table 4.2-1
Health Effects Summary of the Major Criteria Air Pollutants

Pollutants	Sources	Primary Effects	Attainment Status
Ozone	Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	Aggravation of respiratory and cardiovascular diseases. Irritation of eyes. Impairment of cardiopulmonary function. Plant leaf injury.	Federal and state non-attainment
Nitrogen Dioxide (NO_2)	Motor vehicle exhaust. High temperature stationary combustion. Atmospheric reactions.	Aggravation of respiratory illness. Reduced visibility. Reduced plant growth. Formation of acid rain.	Attainment
Carbon Monoxide (CO)	Incomplete combustion of fuels and other carbon containing substances, such as motor exhaust. Natural events, such as decomposition of organic matter.	Reduced tolerance for exercise. Impairment of mental function. Impairment of fetal development. Death at high levels of exposure. Aggravation of some heart diseases (angina).	Attainment
Particulate Matter ($PM_{2.5}$ and PM_{10})	Stationary combustion of solid fuels. Construction activities. Industrial processes. Atmospheric chemical reactions.	Reduced lung function. Aggravation of the effects of gaseous pollutants. Aggravation of respiratory and cardiorespiratory diseases. Increased cough and chest discomfort. Soiling. Reduced visibility.	PM_{10} federal and state non-attainment $PM_{2.5}$ federal non-attainment
Sulfur Dioxide (SO_2)	Combustion of sulfur-containing fossil fuels. Smelting of sulfur bearing metal ores. Industrial processes.	Aggravation of respiratory diseases (asthma, emphysema). Reduced lung function. Irritation of eyes. Reduced visibility. Plant injury. Deterioration of metals, textiles, leather, finishes, coatings, etc.	Attainment
Lead (Pb)	Contaminated soil.	Impairment of blood function and nerve construction. Behavioral and hearing problems in children.	Attainment

Source: California Air Resources Board 2014.

4.2.2 Impact Significance Criteria

Appendix G of the State CEQA Guidelines provides guidance that a project would have a significant environmental impact if it would:

- Conflict or obstruct the implementation of the applicable AQMP or applicable portions of the SIP;
- Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of PM_{10} or exceed quantitative thresholds for O_3 precursors, NO_X, and reactive organic compounds (ROCs);
- Expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, or day-care centers) to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

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

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

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

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

Construction Significance Criteria

The ICAPCD has also established thresholds of significance for project construction. Table 4.2-2 provides general guidelines for determining significance of impacts based on the total emissions that are expected from project construction.

Regardless of project size, the standard mitigation measures specified by the ICAPCD for construction equipment and fugitive PM_{10} control for construction activities should be implemented at all construction sites. Control measures for fugitive PM_{10} construction emissions in Imperial County are found in ICAPCD Regulation VIII and in the Imperial County CEQA Air Quality Handbook and are discussed below. The implementation of discretionary mitigation measures specified by the ICAPCD applies to construction sites which are five acres or more for non-residential developments or ten acres or more for residential developments.

Table 4.2-2
Thresholds of Significance for Construction Activities

Criteria Pollutant	Pounds Per Day
PM_{10}	150
ROG	75
NO_X	100
SO_X	150
CO	550
Source: ICAPCD 2007	

Operations Significance Criteria

Table 4.2-3 provides general guidelines for determining the significance of impacts based on the total emissions that are expected from project operation established by the ICAPCD. Tier I projects are required to implement all standard mitigation measures specified by the ICAPCD. Tier II projects are required to implement all standard mitigation measures as well as all feasible discretionary mitigation measures specified by the ICAPCD.

Table 4.2-3 Thresholds of Significance for Project Operations		
Criteria Pollutant	**Tier I (Pounds per day)**	**Tier II (Pounds per day**
PM_{10}	Less than 150	150 and Greater
NO_x	Less than 55	55 and Greater
SO_X	Less than 150	150 and Greater
CO	Less than 550	550 and Greater
ROGs	Less than 55	55 and Greater
Source: ICAPCD 2007 CEQA Air Quality Handbook		

4.2.3 Impact Analysis

Section 15125(B) of the CEQA Guidelines contains specific reference to the need to evaluate any inconsistencies between the proposed project and the applicable air quality management plans. The current Clean Air Plans in the project area include the ozone Air Quality Attainment Plan (AQAP), PM_{10} SIP, and $PM_{2.5}$ SIP. The ICAPCD CEQA Air Quality Handbook states that a "consistency analysis with the Clean Air Plans is required for large residential developments and large commercial developments which are required to develop an EIR and/or a Comprehensive Air Quality Analysis Report." The basis for the Clean Air Plans is the distribution of population in the region, which is based in part on the land uses established by the General Plan. The City of El Centro has designated the property as Low Density Residential in the General Plan. In addition, Imperial County has designated the project site as an Urban Area. The project would be consistent with these designations, and therefore, the project would be consistent with the population distribution assumptions in the Clean Air Plans. Additionally, the project would be required to implement standard and discretionary measures that would reduce emissions to below the significance thresholds for all criteria pollutants. As such, the project is consistent with the Clean Air Plans.

Construction Impacts

Construction-related activities are temporary, short-term sources of air emissions. Sources of construction-related air emissions include fugitive dust from grading activities; construction equipment exhaust; and construction-related trips by workers, delivery trucks, and material-hauling trucks. Table 4.2-4 shows the projected maximum daily emissions from construction.

Table 4.2-4 Summary of Maximum Daily Construction Emissions (pounds per day)				
Phase	**ROG**	**NO_X**	**CO**	**PM_{10}**
Land Clearing/Grubbing	2.5	26.6	12.8	1.5
Grading/Excavation	6.0	70.6	40.6	4.4
Fine Grading	2.8	31.7	16.9	1.5
Drainage/Utilities	5.0	54.4	31.5	2.6
Paving	2.9	30.7	15.1	1.6
Building Construction/Architectural Coatings	20.4	61.3	82.0	7.4
Maximum Daily	20.4	70.6	82.0	7.4
Significance Threshold	75	100	550	150
Exceed Threshold?	No	No	No	No
Source: ICAPCD 2007 CEQA Air Quality Handbook				

When construction emissions are below these thresholds, the project must comply with ICAPCD Regulation VIII and apply standard mitigation measures for construction emissions and fugitive PM_{10} control, regardless of project size. For projects that exceed the thresholds of significance, the ICAPCD requires an additional analysis of localized and, under certain circumstances, regional impacts.

As shown, maximum daily construction emissions would not exceed ICAPCD construction thresholds. ICAPCD requires that standard mitigation measures for construction equipment and fugitive PM_{10} control be implemented at all construction sites, as appropriate and feasible, regardless of the size of construction. In addition, since the project site exceeds ten acres, the project proponent must implement the discretionary mitigation measures for fugitive PM_{10}.

Operational Impacts

Mobile source emissions would originate from traffic generated by the project. Area source emissions would result from activities such as the use of architectural coatings, consumer products, fireplaces, and landscaping equipment.

As discussed previously, the project would be constructed in three phases. Phase 1 would construct 247 single-family residential units, Phase 2 would construct 116 single-family residential units and a ±10.8-acre, and Phase 3 would construct 246 single-family residential units. Total emissions were calculated for the completion of Phase 1, the completion of Phase 2, and total buildout at the completion of Phase 3.

If emissions fall below the significance thresholds, the project is classified as a Tier 1 project, and if emissions exceed the significance thresholds, the project is classified as a Tier 2 project. Tier 1 projects are required to implement all standard mitigation measures specified by the ICAPCD. Tier 2 projects are required to implement all standard mitigation measures as well as all feasible discretionary mitigation measures specified by the ICAPCD.

Operational emissions are projected to be less than the applicable thresholds for all pollutants except ROG after construction of Phase 2 and total buildout. Emissions of ROG are due to mobile sources, the use of fireplaces, and the use of consumer products associated with the project. Impacts would be potentially significant.

Table 4.2-5
Summary of Maximum Daily Operational Emissions (Full Buildout Conditions)

	Maximum Daily Emissions (pounds)				
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**
Summer					
Mobile Sources	24.3	34.3	216.4	0.3	21.4
Area Sources	104.4	1.4	132.9	0.0	12.2
Total Emissions	**128.8**	35.8	349.3	0.3	33.6
Significance Criteria	55	55	550	150	150
Exceed Threshold	Yes	No	No	No	No
Winter					
Mobile Sources	20.0	37.4	223.9	0.3	21.4
Area Sources	104.4	1.4	132.9	0.0	12.2
Total Emissions	**124.4**	38.8	356.8	0.3	33.6
Significance Criteria	55	55	550	150	150
Exceed Threshold?	**Yes**	No	No	No	No

Odor Impacts

The project would not create objectionable odors that would affect a substantial number of people. The project does not include any land uses typically associated with odor complaints. During construction, diesel equipment may generate some nuisance odors; however, due to the distance of sensitive receptors from the project site, odors associated with project construction would not be significant.

The project is located north of an extensive agricultural operation that includes a hay storage site, and further south, ~~including~~a cattle yard collectively known as El Toro Export that could create objectionable odors. However, these odors are typical of the agricultural operations in the region and do not reach the level of significant adverse impacts as defined by CEQA, nor are there any practicable methods to scientifically and objectively measure odor to determine impacts. CEQA focuses on a proposed project's impacts *to* the environment, not necessarily the environment's impacts to a proposed project. In addition, State of California Health and Safety Code Sections 41700 and 41705 and ICAPCD Rule 407 do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

In order to help reduce future complaints from residents and potential conflicts with existing agricultural operations, the County "Right-to-Farm" Ordinance notifies homebuyers of potential odor conditions. Although this Ordinance will not reduce odor impacts themselves, it will foster communication and enable understanding, thus adequately reducing potential conflicts.

4.2.4 Significant Impacts

AQ 1 - Construction Impacts

Construction-related activities are temporary, short-term sources of air emissions that include fugitive dust from grading activities; construction equipment exhaust; and construction-related trips by workers, delivery trucks, and material-hauling trucks that will have a potentially significant impact on the environment.

AQ 2 - Operational Impacts

Operational emissions are projected to be less than the applicable thresholds for all pollutants except ROG after construction of Phase 2 and total buildout. Emissions of ROG are due to mobile sources, the use of fireplaces, and the use of consumer products associated with the project. Impacts would be potentially significant.

4.2.5 Mitigation Measures

AQ 1 - Mitigation Measures for Construction

Although maximum daily construction emissions would not generate a significant impact, ICAPCD requires that standard mitigation measures for construction equipment and fugitive PM_{10} control be implemented at all construction sites, as appropriate and feasible, regardless of the size of construction. In addition, since the project site exceeds ten acres, the project proponent must implement the discretionary mitigation measures for fugitive PM_{10}. In accordance with the CEQA Air Quality Handbook, the short-term construction impacts would be less than significant upon implementation of the following mitigation measures:

AQ 1.1 - Standard Mitigation Measures for Construction Equipment

- Maintain all construction equipment in proper tune according to manufacturer's specifications.
- Fuel all off-road and portable diesel powered equipment, including but not limited to bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors, auxiliary power units, with ARB certified motor vehicle diesel fuel.
- Maximize to the extent feasible, the use of diesel construction equipment meeting the ARB's 1996 or newer certification standard for off-road heavy duty diesel engines.
- Install diesel oxidation catalyst (DOC), catalyzed diesel particulate, or other District-approved emission reduction retrofit devices.

AQ 1.2 - Standard Mitigation Measures for Fugitive PM_{10} Control

- The entire site shall be pre-watered for 48 hours prior to clearing and grubbing.
- Reduce the amount of disturbed area where possible.
- Water at least twice daily or otherwise stabilize all active construction areas.
- All dirt stockpile areas should be sprayed daily as needed.
- Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Haul trucks shall cover loads or maintain at least 6 inches of freeboard when traveling on public roads.
- Pre-moisten, prior to transport, import and export materials that have a silt content of 5 percent or greater. Water all materials with a silt content of 5 percent or greater with a spray bar or cover trucks hauling dirt, sand, or loose materials. Empty trucks and trucks carrying asphalt material are excluded from this requirement.
- Sweep streets at the end of each day if visible soil material is carried onto streets, or wash off truck and equipment leaving site.

AQ 1.3 - Discretionary Mitigation Measures for Fugitive PM_{10} Control

- Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. When wind speeds exceed 15 mph the operators shall increase watering frequency.
- Apply chemical soil stabilizers or apply water to form and maintain a crust on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Apply non-toxic binders (e.g. latex acrylic copolymer) to exposed areas after cut and fill operations and hydro-seeded areas.
- Plant vegetative ground cover in disturbed areas as soon as possible and where feasible.
- Cover or apply water or chemical suppressants to form and maintain a crust on inactive storage piles.

- All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.

- Install wheel washers, rumble gates, provide a gravel pad, or pave the area where vehicles enter and exit unpaved roads onto streets; or wash off trucks and equipment leaving the site.

AQ 2 - Mitigation Measures for Operation

ICAPCD requires Tier 1 projects to implement all standard mitigation measures. Tier 2 projects are required to implement all standard mitigation measures as well as feasible discretionary mitigation measures.

AQ 2.1 - Standard Site Design Measures

- Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. When wind speeds exceed 15 mph the operators shall increase watering frequency.

- Link cul-de-sacs and dead-end streets to encourage pedestrian and bicycle travel.

- Allocate easements or land dedications for bikeways and pedestrian walkways.

- Provide continuous sidewalks separated from the roadway by landscaping and on-street parking. Adequate lighting for sidewalks must be provided, along with crosswalks at intersections.

- Incorporate energy efficiency measures which meet mandatory, prescriptive and/or performances measures as required by Title 24

AQ 2.2 - Discretionary Measures

- If the project design includes fireplaces, no wood-burning fireplaces shall be installed; rather, all fireplaces shall be natural gas.

4.2.6 Level of Significance after Mitigation

AQ 1 - Construction

With implementation of the standard and discretionary mitigation measures, construction-related air quality impacts would be less than significant.

AQ 2 - Operation

With implementation of this measure and standard and discretionary mitigation measures, operational-related air quality impacts would be less than significant.

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4.3 BIOLOGICAL RESOURCES

The following section incorporates information from a burrowing owl survey letter report prepared for the project by RECON Environmental, Inc. (RECON) in January 2015. The letter report is included as Appendix B to this DEIR.

4.3.1 Existing Conditions

The project site comprises two adjacent agricultural parcels that sit at approximately 70 feet above mean sea level. The site is disturbed, fallowed agricultural land. As a result, a detailed vegetation survey was not conducted on the site and according to a 2005 report by Jones & Stokes biologists, no sensitive plant species occur on the site.

Fallowed agricultural fields and peripheral dirt areas (such as canal banks or trails) are known throughout the region to serve as habitat for the burrowing owl (*Athene cunicularia hypugaea*), which is currently recognized as a Species of Special Concern by the California Department of Fish and Wildlife (CDFW). The burrowing owl is considered a significant biological resource pursuant to CEQA and has been evaluated as such. Because of the general presence of suitable conditions, RECON biologists conducted a habitat assessment and four non-breeding season burrowing owl surveys pursuant to CDFG's 2012 *Burrowing Owl Survey Protocol and Mitigation Guidelines*. For the purposes of the report, the "survey area" includes the project's proposed ground disturbance footprint (project area) and a 150-meter buffer. Meandering transects were walked through all suitable habitat identified within the project area with focused attention on where burrowing owls were detected within the project area in 2005. The 150-meter buffer was surveyed using binoculars, as access onto private property was not granted. All wildlife species observed during the surveys were noted.

Suitable habitat was evaluated within the survey area during the habitat assessment. The fallow agricultural fields are not considered suitable nesting burrowing owl habitat due to the density of vegetation that included the dried thatch from the previous year, and no burrows of any size were detected within the fields. Suitable foraging habitat may be present during the times of year when the vegetation within the fields has died back. Within the buffer, dirt roads surrounding the agricultural lots within the project area, neighboring (active) agricultural lots, residential and heavy agricultural development exist. The dirt roads and earthen, unvegetated berms adjacent to the dry irrigation canals within the survey area provide suitable burrowing habitat, although no burrows were detected. All surrounding active agricultural fields and residential development can be excluded due to the lack of suitable nesting habitat. As these neighboring fields are receiving supplemental water, this eliminates the potential for these areas to be suitable nesting habitat. The heavy agricultural development south of the southern parcel (El Toro Export) supports several massive, covered haystacks, which the two detected burrowing owls have been observed perching on top and outside of.

Burrowing owl signs (white wash and feathers) were detected within several culverts (Culverts A-E) associated with a dry, earthen irrigation canal along the southern border of the project area. Also, signs known as decoration (cardboard trash) were detected within Culvert E. Additionally, two burrowing owl individuals (presumably a pair) were observed flying from two separate culverts during the habitat assessment on October 20, 2014 and later perched on top of a covered haystack south of the project area.

Other species seen or detected during the survey include the avian species common ground-dove (Columbina passerina pallescens), Say's phoebe (Sayornis saya), American kestrel (Falco sparverius sparverius), northern harrier (Circus cyaneus hudsonius), and great egret (Ardea alba).

4.3.2 Impact Significance Criteria

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

- Has 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 or U.S. Fish and Wildlife Service.

The *Burrowing Owl Survey Protocol and Mitigation Guidelines* define an impact to the burrowing owl as either 1) Disturbance or harassment within 50 meters (approx. 160 feet) of occupied burrows; 2) Destruction of burrows and burrow entrances; or 3) Degradation of foraging habitat adjacent to occupied burrows.

4.3.3 Impact Analysis

The project would entail clearing of the site and construction of 609 residences, one public park, and related infrastructure, which would disturb the site and remove its present uses.

One sensitive biological resource was identified on the site. Burrowing owl individuals were detected within the project area and/or directly adjacent to the southern project boundary during the habitat assessment and two focused surveys. The burrowing owl pair was only observed together during the habitat assessment. These observations are recorded on California Native Species Field Survey Forms and will be submitted to California Natural Diversity Database (CNDDB). With the sign detected, it is apparent that one or more of the burrowing owls is using the culverts along the southern boundary of the southern parcel intermittently as "satellite" or non-nesting burrows.

No other rare or endangered plant or animal species occur on the project site, and the site does not support sensitive habitats or wildlife movement corridors. Therefore, the project's biological resources impacts are limited to those involving burrowing owls, as described.

4.3.4 Significant Impacts

Due to the presence of burrowing owls and non-nesting burrows along the southern edge of the project site, the project presents potential significant impacts to the burrowing owl unless mitigation is incorporated. Avoidance measures per the CDFW 2012 Guidelines are required, such as the avoidance of impacting burrows occupied during the non-breeding season by migratory or non-migratory resident burrowing owls. In addition, should burrows be established on or near the site prior to construction, project implementation would present a significant impact to this sensitive resource. Therefore, the following significant impact is identified:

BIO 1 The project would have a substantial adverse effect through habitat modifications on the burrowing owl.

4.3.5 Mitigation Measures

BIO 1.1 Take-Avoidance (Pre-Construction) Surveys. Pre-construction surveys will be required at least 14 days prior to ground disturbance to detect the presence of burrowing owls and inform necessary take avoidance actions. These surveys will include all areas where suitable habitat is present within the survey area (CDFW 2012).

BIO 1.2 Burrow Exclusion and Closure. The CDFW 2012 guidelines state "Burrow exclusion is a technique of installing one-way doors in burrowing openings during the non-breeding season to temporarily exclude burrowing owls, or permanently exclude burrowing owls and close burrows after verifying burrows are empty by site monitoring and scoping." Although there were no formal burrows being used by the burrowing owls detected on-site, the culverts are being used as burrows. The burrow exclusion and closure technique will apply to these culverts along the southern boundary of the southern parcel.

BIO 1.3 Formal consultation with CDFW will be required in order to develop the appropriate mitigation plans for the Lotus Ranch project. Other mitigation measures such as translocation of burrowing owls, artificial burrow construction, and/or habitat preservation may be required.

4.3.6 Level of Significance after Mitigation

With mitigation measures, impacts would be less than significant.

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Source: RECON (2015)

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Areas of Burrowing Owl Activity

Figure 4.3-1

View of Unvegetated Land (Dirt Road) within the Project Area, Looking West.
Photo Date: 10/20/2014

Burrowing Owl Sign (Feathers and White Wash) within Culvert C, Looking South.
Photo Date: 10/30/2014

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Source: RECON (2015)

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Site Photographs

Figure 4.3-2

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4.4 GEOLOGY/SOILS

The Final Environmental Impact Report (FEIR) for Lotus Ranch in 2007 reviewed Geology and Soils with a Geological Hazards Evaluation prepared in November 2005. Due to the fact that geological and soil conditions have remained unchanged since 2005, this current DEIR utilizes the previous FEIR data. Geotechnics, Incorporated conducted a survey of the project site and a review of available literature and maps related to geologic hazards known to occur within the region and the area surrounding the project site, then prepared a Geologic Hazards Evaluation (Geologic Report) to present their findings. The following section summarizes information presented in that report.

4.4.1 Existing Conditions

The site is within the south-central portion of the Salton Trough, a topographic and geologic structural depression bound to the north by the Coachella Valley and to the south by the Gulf of California. The trough was created by complex rifting and strike slip faulting associated with the separation of Baja California from mainland Mexico, the same process that was responsible for creating the Gulf of California. The upper 3,000 feet of the Salton Trough is generally underlain by Pleistocene and Holocene-age deposits originating from lake sediment. The project site itself is underlain by lake deposits.

The lake deposits underlying the site typically consist of fat and lean clays, silts, clayey sand, silty sand, and poorly graded sand. The sands and silts are generally non plastic; the clays can be of low- to high-plasticity. The sands and silts can range from very loose to very dense; the clays can range from soft to very stiff.

Groundwater is known to occur in the surrounding area at depths ranging from approximately 4.5 to 15 feet below grade. Groundwater levels are known to vary due to rainfall, irrigation, site drainage, or broken water pipes.

Faults and Seismicity

The project site is located within a seismically active area of Southern California and, resultantly, is subject to ground shaking conditions common to the region. The site is not within an Alquist-Priolo Earthquake Fault Zone, but is located in the vicinity of several active faults. The closest faults are the Superstition Hills Fault, located approximately seven km west of the site; and the Imperial Fault, located approximately 10 km east of the site. These sites are estimated to be able to produce earthquakes of magnitude 6.6 and 7.0, respectively. No evidence of active or potentially active faulting was found during the site investigation; therefore, the project site is not considered subject to significant ground rupture conditions.

Liquefaction

Liquefaction is a process in which soil grains in saturated sand or silt deposits lose contact due to earthquakes or other sources of ground shaking, causing the soil to temporarily behave as a liquid. Liquefaction typically occurs in saturated sands and silts with poor cohesion and loose-

to medium density. In order to liquefy, soils must be subjected to ground shaking of sufficient magnitude and duration.

The site is located in an area previously subject to widespread liquefaction conditions during quakes along the Imperial Fault, which runs northwest to southeast approximately 10 km east of the site. The site is likely to be subject to similar conditions.

Subsidence

Soil subsidence occurs when subsurface soil compacts and the surface collapses as a result of fluid extraction/removal (related to geothermal purposes, for example) or seismic events. The site is not within an area known for fluid extraction and the site would not be subject to associated subsidence conditions. It is possible, however, that due to the density of underlying soil the site may be subject to seismically-induced subsidence.

Landslides and Lateral Spreading

Landslides are ground failures occurring on slopes that can be triggered by earthquakes or heavy rains. Historically, earthquake-induced landslides have occurred along the banks of canals and drains within 10 km of the ground rupture site.

Lateral spreading results from liquefaction or plastic deformation of soil occurring on gently sloping ground during an earthquake. The conditions occur when blocks of mostly intact surficial soil are displaced down slope along a sheer zone that has formed within liquefied sediment.

Due to the site's flat topography, there are no slopes on the site that would be subject to landslide or lateral spreading conditions. However, the engineered eastern bank of the Lotus Canal parallels the site's western boundary. A failure on this slope could affect the project site. The banks are small, low-lying, and properly engineered to preclude major landslide or lateral spreading conditions.

Expansive Soils

Certain clays and other soils can expand when saturated with water. Soil types known to occur in the vicinity of the site and that may occur on the site have very high expansion potentials. Therefore, the site may be subject to expansive soil conditions.

Tsunamis and Flooding

A tsunami in the Pacific Ocean would not affect the site due to the site's distance from the coast. The site is not within a 100-year flood zone, as delineated by the Federal Emergency Management Agency; therefore, the site would not be subject to hazardous flooding conditions.

4.4.2 Impact Significance Criteria

A significant geologic impact would occur if:

- Development of any portion of the project site will be in violation of State Alquist-Priolo Act restrictions for designated zones;
- Proposed uses will result in unacceptable risks of injury, loss of life, destruction of property and disruption of services due to seismic activity;
- Development will occur in the vicinity of geothermal extraction/injection activities and be subject to elevation changes;
- Areas of construction are underlain by expansive soils (high shrink-swell potential); and
- The project site is subject to landslides or liquefaction in areas proposed for development.

4.4.3 Impact Analysis

The project would construct new single-family residences, one public park, and associated infrastructure on land currently used for agriculture and residential purposes. The Lotus Drain would be placed underground. The site is predominantly flat, but a minimal amount of grading would be required to create individual building pads and to underground the Lotus Drain. Subsurface earthwork would also be required to place water, wastewater, and storm drain infrastructure underground. Project grading may require import or export of earth material. The site would have no other off-site geologic impacts. No geothermal extraction or injection activities occur within the surrounding area that would affect the project site. The following subsections discuss the project's potential for geologic hazards.

Faults and Seismicity

Due to the site's proximity to several active faults, the project would be subject to seismic ground shaking similar to conditions experienced throughout much of Southern California. Project foundations and structures would be constructed to the appropriate standards dictated by the Universal Building Code to limit hazards associated with such seismic conditions. This impact is less than significant. The site is not within an Alquist-Priolo Earthquake Fault Zone. No evidence of active or potentially active faulting was found during the site investigation; therefore, there would be no impact with respect to hazards from ground rupture conditions.

Liquefaction

Soil underlying the site may be subject to liquefaction in the event of major seismic ground shaking. A major episode of liquefaction on the site could compromise the integrity of the project's foundations. After determining specific areas of the site subject to liquefaction, the project's foundations and structures would be constructed in accordance with applicable

regulations set forth in the Uniform Building Code to accommodate settlement related to liquefaction. The presence of potentially liquefiable soil is a significant impact that warrants mitigation.

Subsidence

The site is not within a fluid extraction area, and the project would not be subject to associated subsidence conditions. It is possible, however, that due to the density of underlying soil the project may be subject to seismically-induced subsidence. Such conditions would compromise the integrity of foundations and infrastructure. After determining specific areas of the site subject to subsidence, the project's foundations and structures would be constructed in accordance with applicable regulations set forth in the Uniform Building Code to accommodate settlement related to subsidence. The presence of potentially subsiding soil is a significant impact that warrants mitigation.

Landslides and Lateral Spreading

Major landslide conditions are not likely to affect the project due to the lack of slopes on the site and the small size of the adjacent banks of the Lotus Canal. The slopes have been properly engineered and are not likely to be subject to hazardous landslide or lateral spreading conditions. Furthermore, if such conditions did arise, the detention basin / park areas proposed for development over the undergrounded Lotus Drain would provide ample buffer to adjacent residences, thereby avoiding impact. This impact is less than significant.

Expansive Soils

The site is in an area generally known to contain soils that have very high expansion potential. Therefore, the project may be subject to expansive soil conditions. Major soil expansion could compromise the integrity of foundations and infrastructure. This potential hazard is a significant impact warranting mitigation.

Tsunamis and Flooding

The project would not be affected by a tsunami on the Pacific coast due to the site's inland location. The site is not within a 100-year flood zone, as delineated by the Federal Emergency Management Agency; therefore, the project would not be subject to hazardous flooding conditions. There are no nearby dams or water tanks whose failure would inundate the project site. The Lotus Canal abuts the project site; failure of this feature as a result of a seismic event, which is unlikely due to its proper engineering and maintenance, could lead to minor flooding of the site, but nothing that would present hazardous conditions. This impact is less than significant.

4.4.4 Significant Impacts

GEO 1 Soil underlying the site may be subject to seismically-induced liquefaction, which could present hazardous conditions.

GEO 2 Soil underlying the site may be subject to seismically-induced subsidence, which could present hazardous conditions.

GEO 3 Soil underlying the site may possess expansive qualities, which could present hazardous conditions on the site.

4.4.5 Mitigation Measures

GEO 1 A site-specific geotechnical investigation shall be prepared to locate and evaluate on-site soils with the potential for liquefaction. Such investigation would detail the design requirements to account for any potential liquefaction conditions.

GEO 2 A site-specific geotechnical investigation shall be prepared to locate and evaluate on-site soils with the potential for subsidence. Such investigation would detail the design requirements to account for any potential subsidence conditions.

GEO 3 A site-specific geotechnical investigation shall be prepared to locate and evaluate on-site expansive soils. Such investigation would detail the design requirements to account for any potential expansive conditions.

4.4.6 Level of Significance after Mitigation

Implementation of the mitigation measures listed above would reduce the level of the geologic hazards impacts to a less than significant level.

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4.5 GREENHOUSE GAS EMISSIONS

RECON Environmental, Inc. prepared a Greenhouse Gas Emission Analysis to assess greenhouse gas emissions impacts associated with the construction and operation of the Lotus Ranch project (January 2015). The following gives a summary of the potential impacts and the mitigation measures that would address these impacts. The Technical Study is included in its entirety as Appendix C of the DEIR.

4.5.1 Existing Conditions

4.5.1.1 Environmental Setting

The California Air Resources Board (CARB) performs statewide GHG inventories. The inventory is divided into nine broad sectors of economic activity: agriculture, commercial, electricity generation, forestry, high global warming-potential emitters, industrial, recycling and waste, residential, and transportation. Emissions are quantified in million metric tons of CO_2 equivalent ($MMTCO_2E$).

Statewide GHG source emissions totaled 427 $MMTCO_2E$ in 1990, 483 $MMTCO_2E$ in 2008, and 448 $MMTCO_2E$ in 2011. Many factors affect year-to-year changes in GHG emissions, including economic activity, demographic influences, environmental conditions such as drought, and the impact of regulatory efforts to control GHG emissions. While CARB has adopted multiple GHG emission reduction measures, the effect of those reductions will not be seen until around 2015. According to CARB, most of the reductions since 2008 have been driven by economic factors (recession), previous energy efficiency actions, and the renewable portfolio standard (CARB 2013). Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

The project site is currently undeveloped and is not a source of GHG emissions.

4.5.1.2 Regulatory Background

4.5.1.2.1 Federal

Environmental Protection Agency

The U.S. EPA has many federal level programs and projects to reduce GHG emissions. The U.S. EPA provides technical expertise and encourages voluntary reductions from the private sector. One of the voluntary programs applicable to the proposed project is the Energy Star program.

Energy Star is a joint program of U.S. EPA and the U.S. Department of Energy, which promotes energy-efficient products and practices. Tools and initiatives include the Energy Star Portfolio Manager, which helps track and assess energy and water consumption across an entire portfolio of buildings, and the Energy Star Most Efficient 2013, which provides information on exceptional products that represent the leading edge in energy-efficient products in the year 2013.

The U.S. EPA also partners with the public sector, including states, tribes, localities, and resource managers, to encourage smart growth, sustainability preparation, and renewable energy and climate change preparation. These initiatives include the Clean Energy–Environment State Partnership Program, the Climate Ready Water Utilities Initiative, the Climate Ready Estuaries Program, and the Sustainable Communities Partnership.

Corporate Average Fuel Economy Standards

The federal Corporate Average Fuel Economy (CAFE) standards determine the fuel efficiency of certain vehicle classes in the U.S. While the standards had not changed since 1990, as part of the Energy and Security Act of 2007, the CAFE standards were increased in 2007 for new light-duty vehicles to 35 miles per gallon (mpg) by 2020. In May 2009, plans were announced to further increase CAFE standards to require light-duty vehicles to meet an average fuel economy of 35.5 mpg by 2016. In August 2012, fuel economy standards were further increased to 54.5 mpg for cars and light-duty trucks by Model Year 2025. This will nearly double the fuel efficiency of those vehicles compared to new vehicles currently on our roads. With improved gas mileage, fewer gallons of transportation fuel would be combusted to travel the same distance, thereby reducing nationwide GHG emissions associated with vehicle travel.

4.5.1.2.2 State

Executive Order S-3-05 – Statewide GHG Emission Targets

Executive Order (EO) S-3-05 established the following GHG emission reduction targets for the State of California:

- by 2010, reduce GHG emissions to 2000 levels;
- by 2020, reduce GHG emissions to 1990 levels;
- by 2050, reduce GHG emissions to 80 percent below 1990 levels.

This EO also directs the Secretary of the California EPA to oversee the efforts made to reach these targets, and to prepare biannual reports on the progress made toward meeting the targets and on the impacts to California related to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. With regard to impacts, the report shall also prepare and report on mitigation and adaptation plans to combat the impacts. The first Climate Action Team Assessment Report was produced in March 2006 and has been updated every two years.

Assembly Bill 32 – California Global Warming Solutions Act

In response to EO S-3-05, the California legislature passed Assembly Bill (AB) 32 (Nuñez), the "California Global Warming Solutions Act of 2006." AB 32 codified the 2020 emission reduction target from EO S-3-05 and required CARB to adopt rules and regulations that would reduce GHG emissions to 1990 levels by 2020. CARB is also required to publish a list of discrete GHG emission reduction measures.

Climate Change Scoping Plan

The CARB Scoping Plan was originally developed in December 2008 in response to AB 32. The plan outlines measures to reduce statewide GHG emissions to 1990 levels by 2020. This reduction was estimated to equate to a 28.3 percent reduction from the Business As Usual (BAU) 2020 emission levels. The key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewable energy mix of 33 percent.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions.
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- Adopt and implement measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard ("LCFS").
- Creating targeted fees, including a public goods charge on water use; fees on high global warming potential gases; and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

Approved in May 2014, the First Update to the Scoping Plan (CARB 2014) defines CARB's priorities for the next five years and sets the groundwork to reach long-term goals set forth in EO S-3-05. A stated goal of the update is to lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050. The update revises 2020 BAU forecasts from 596 $MMTCO_2E$ to 509 $MMTCO_2E$, based on economic downturn. This, in turn, changes the BAU reduction target from 28.3 percent to 16.1 percent. The update describes advancements in climate science such as the quantification of the impacts of temperature change, further understanding of the mechanisms of climate pollutants (black carbon, methane, and hydro fluorocarbons), and improvements to GHG monitoring. The First Update also describes progress made since the original Scoping Plan including implementation of a more comprehensive Cap-and-Trade Program, LCFS, a 33 percent Renewable Portfolio Standard, and Advanced Clean Cars program, which has been adopted at the federal level.

AB 1493 – Pavley GHG Vehicle Standards

AB 1493 (Pavley) directed CARB to adopt vehicle standards that lowered GHG emissions from passenger vehicles and light-duty trucks to the maximum extent technologically feasible, beginning with the 2009 model year. CARB has adopted amendments to its regulations that would enforce AB 1493 but provide vehicle manufacturers with new compliance flexibility. Pavley standards are currently divided into two phases. Standards that regulate vehicles model years 2009 through 2016 are termed "Pavley I", standards for model years 2017 through 2025 were originally termed "Pavley II".

With these actions, it is expected that Pavley I and Advanced Clean Cars will reduce GHG emissions from California passenger vehicles by a total of 31.5 MMTCO2E (or 22 percent, including 2.7 percent from Advanced Clean Cars) counted toward the total pre-economic downturn statewide reduction target on the capped sector of 146.7 MMTCO2E (CARB 2012). CARB adopted a second phase of the Pavley regulations, termed "Pavley II," which are now called the Low Emission Vehicle III (LEV III) Standards. LEV III covers model years 2017 to 2025. These reductions are to come from improved vehicle technologies such as small engines with superchargers, continuously variable transmissions, and hybrid electric drives.

EO S-01-07 – Low Carbon Fuel Standard

EO S-01-07 directed that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through a LCFS. CARB adopted the LCFS as a discrete early action measure pursuant to AB 32 and includes the LCFS as a reduction measure in its Scoping Plan.

The LCFS is a performance standard with flexible compliance mechanisms intended to incentivize the development of a diverse set of clean low-carbon transportation fuel options. Its aim is to accelerate the availability and diversity of low-carbon fuels such as biofuels, electricity, and hydrogen by taking into consideration the full life cycle of GHG emissions.

Regional Transportation-related GHG Targets

The Regional Transportation-related GHG Targets measure included in the Scoping Plan identifies policies to reduce transportation emissions through changes in future land use patterns and community design, as well as through improvements in public transportation that reduce vehicle miles traveled. Improved planning and the resulting development are seen as essential for meeting the 2050 emissions target (CARB 2008). CARB expects that this measure will reduce transportation-related GHG emissions by about 5 $MMTCO_2E$, or 4 percent of the total statewide reductions attributed to the capped sectors.

Senate Bill 375 – Regional Emissions Targets

Senate Bill 375 requires CARB to set regional targets for reducing passenger vehicle GHG emissions in accordance with the Scoping Plan measure described above. Its purpose is to align regional transportation planning efforts, regional GHG reduction targets, and land use and

housing allocation to reduce GHG emissions by promoting high-density mixed-use developments around mass transit hubs.

Renewables Portfolio Standard

The Renewable Portfolio Standard (RPS) promotes diversification of the state's electricity supply. Originally adopted with a goal to achieve a 20 percent renewable energy mix by 2020, the goal has been accelerated and increased to a goal of 33 percent by 2020. Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. Its purpose is to achieve a 33 percent renewable energy mix statewide, providing 33 percent of the state's electricity needs met by renewable resources by 2020 (CARB 2008). The RPS is included in CARB's Scoping Plan list of reduction measures. Increasing the RPS to 33 percent accelerates the transformation of the electricity sector, including investment in the transmission infrastructure and systems changes to allow integration of large quantities of intermittent wind and solar generation. Increased use of renewables would decrease California's reliance on fossil fuels, thus reducing emissions of GHGs from the electricity sector. As part of the 2008 Scoping Plan original estimates, CARB estimated that full achievement of the RPS would decrease statewide GHG emissions by 21.3 $MMTCO_2E$ (CARB 2008).

California Code of Regulations, Title 24, Part 6 – California Energy Code

New construction and major renovations must demonstrate compliance with the current Energy Code through increases in energy efficiency given selection of various heating, ventilation, and air conditioning; sealing; window glazing; insulation; and other components related to the building envelope. The most recent amendments to the Energy Code became effective January 1, 2014. The 2013 Energy Code provides mandatory energy-efficiency measures as well as voluntary tiers for increased energy efficiency. The 2013 Energy Code is anticipated to result in 25 to 30 percent energy savings over the 2008 Title 24 standards (California Energy Commission [CEC] 2013).

California Code of Regulations, Title 24, Part 11 – California Green Building Standards

California Green Building Standards (CalGreen) institutes mandatory minimum environmental performance standards for all ground-up new construction of commercial and low-rise residential buildings, state-owned buildings, schools, and hospitals. These mandatory standards include reduction of indoor water use by 20 percent, diversion of 50 percent of all construction/demolition waste, inspection of energy systems to ensure optimal working efficiency, and requirements for low-pollutant emitting finish materials.

CalGreen also includes voluntary tiers (I and II) with stricter environmental performance standards. Local jurisdictions must enforce the minimum mandatory requirements and may adopt CalGreen with amendments for stricter requirements. The 2013 revisions to CalGreen clarify existing regulation.

4.5.1.2.3 Local

The City of El Centro General Plan includes several climate change-related policies aimed at reducing GHG emissions from future development and City operations (City of El Centro, 2004). GHG policies are related to public outreach, land use patterns, alternative modes of transportation, energy efficiency, and water conservation. The use of other modes of transportation such as public transit, walking, bicycling, and ridesharing are promoted to reduce the demand for transportation system improvements and to improve air quality. The Conservation/Open Space Element discusses reducing pollutant levels through stationary source, mobile source, transportation and land use control, and energy conservation measures.

Applicable Regulations, Plans, and Policies

4.5.2 Impact Significance Criteria

The California Environmental Quality Act (CEQA) Guidelines, Appendix G Environmental Checklist, includes the following two questions regarding assessment of GHG emissions:

1) Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

2) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of GHGs?

As stated in the CEQA Guidelines, these questions are "intended to encourage thoughtful assessment of impacts and do not necessarily represent thresholds of significance" (Title 14, Division 6, Chapter 3 Guidelines for Implementation of the CEQA, Appendix G, VII Greenhouse Gas Emissions).

The CEQA Guidelines require Lead Agencies to adopt GHG thresholds of significance. When adopting these thresholds, the amended Guidelines allow Lead Agencies to consider thresholds of significance adopted or recommended by other public agencies, or recommended by experts, provided that the thresholds are supported by substantial evidence, and/or to develop their own significance threshold.

As discussed in Section 3.2.2.3, in the Scoping Plan, CARB determined that achieving the 1990 emission level in 2020 would require a reduction in GHG emissions of approximately 28.3 percent in the absence of new laws and regulations (referred to as BAU or "No action taken" ["NAT"]). The First Update to the Scoping Plan revises 2020 BAU forecasts from 596 $MMTCO_2E$ to 509 $MMTCO_2E$, based on economic downturn. This, in turn changes the BAU reduction target from 28.3 percent to 16.1 percent.

The City has not adopted thresholds for evaluating the significance of GHG impacts. This analysis assesses the significance of the project's GHG emissions based on consistency with AB 32 by comparing the project's GHG emissions as proposed to the project's GHG emissions if it

were built using a BAU or NAT approach in terms of design, methodology, and technology. If the difference between the project's emissions as proposed and the project's emissions under a CARB 2020 NAT scenario is at least the difference that has been determined by CARB as necessary to meet AB 32's goals in the Scoping Plan, then the project can be determined to be consistent with AB 32 and thus not significant for purposes of CEQA. This analysis conservatively utilizes the original 28.3 percent reduction from a CARB 2020 NAT scenario, as identified in the 2008 Scoping Plan, as the point of comparison for purposes of assessing the project's significance under the BAU methodology; even though CARB subsequently determined that a lower reduction from BAU may be sufficient for purposes of achieving the mandates of AB 32.

4.5.3 Impact Analysis

4.5.3.1 Methodology

Construction Emissions

Construction activities emit GHGs primarily though combustion of fuels (mostly diesel) in the engines of off-road construction equipment and through combustion of diesel and gasoline in on-road construction vehicles and the commute vehicles of the construction workers. Smaller amounts of GHGs are also emitted through the energy use embodied in water use for fugitive dust control. Every phase of the construction process, including demolition, grading, paving, and building, emits GHGs in volumes proportional to the quantity and type of construction equipment used.

Construction schedules and equipment required to grade and prepare the project site for the construction of single-family homes and park was provided by the project engineer. The project site is vacant and flat, and would require minimal earthwork. It is anticipated that land clearing/grubbing would take 2 days, grading/excavation would take 14 days, fine grading would take 7 days, drainage/utilities would take 30 days, and paving would take 3 days. Single-family residential would then be constructed in phases. At this time, the amount of time required to construct the units is unknown. For modeling purposes, and to be conservative, building construction was modeled over a period of 5 years and the architectural coatings phase of construction would occur simultaneous with building construction. Park construction would occur during Phase 2.

Vehicle Emissions

Transportation-related GHG emissions comprise the largest sector contributing to inventoried statewide GHG emissions, accounting for 38 percent of the total statewide emissions in 2011 (CARB 2013). GHG emissions from vehicles come from the combustion of fossil fuels in vehicle engines. The vehicle emissions are calculated based on the vehicle type and the trip rate for each land use.

Trip generation rates were obtained from the traffic report prepared for the project (Linscott, Law, and Greenspan [LLG] 2014). The single-family residential uses would generate 10 trips per dwelling unit and the park space would generate 1.89 trips per acre, for a total of 6,192 average daily trips.

Energy Use Emissions

GHGs are emitted as a result of activities in buildings for which electricity and natural gas are used as energy sources. GHGs are generated during the generation of electricity from fossil fuels off-site in power plants. These emissions are considered indirect but are calculated in CalEEMod as associated with a building's operation. Electric power generation accounts for the second largest sector contributing to both inventoried and projected statewide GHG emissions, comprising 23 percent of the projected total 2020 statewide BAU emissions from the 2008 Scoping Plan forecast (CARB 2008). Combustion of fossil fuel emits criteria pollutants and GHGs directly into the atmosphere. When this occurs in a building, it is considered a direct emissions source associated with that building. When these emissions are generated at another location, it is considered indirect emissions.

CalEEMod default energy values are based on the CEC-sponsored California Commercial End Use Survey and Residential Appliance Saturation Survey studies, which identify energy use by building type and climate zone. Because these studies are based on older buildings, adjustments have been made in CalEEMod to account for changes to Title 24 building codes. The default adjustment is to the 2008 Title 24 energy code (part 6 of the building code). Adjustments to simulate the 2005 Title 24 energy code are available in CalEEMod.

Energy emissions associated with BAU were estimated assuming construction in accordance with the 2005 Title 24 energy code. Energy emissions associated with the project were estimated assuming the project would be constructed in accordance with the 2013 Title 24 energy code, which is 25 percent more energy efficient than the previous 2008 Title 24 energy code (CEC 2013; Imperial Valley Economic Development Corporation 2013). The increase in energy efficiency can be achieved by using better building components such as more insulation, higher efficiency windows, house wrap, radiant barriers, and higher-efficiency heating, cooling, and water heating equipment.

The project would also reduce energy emissions through the installation of energy-efficient appliances in the residential units. The energy-efficient appliances include clothes washers (a 30 percent improvement), dishwashers (a 15 percent improvement), fans (a 50 percent improvement), and refrigerators (a 15 percent improvement).

Area Source Emissions

Area sources include GHG emissions that would occur from the use of fireplaces and landscaping equipment, as well as from the use of consumer products and architectural coatings. The use of fireplaces directly emits CO2 from the combustion of natural gas, wood, or biomass, some of which are classified as biogenic. Additionally, the use of landscape equipment emits GHGs associated with the equipment's fuel combustion. The landscaping equipment values were

derived from the 2011 In-Use Off-Road Equipment Inventory Model (CARB 2011). Area source emissions were calculated using default values for both the project and the BAU scenario.

Water and Wastewater Emissions

GHG emissions associated with supplying and treating the water and wastewater are calculated for this project based on the indoor and outdoor water use consumption data for each land use subtype, which comes from the Pacific Institute's Waste Not, Want Not: The Potential for Urban Water Conservation in California 2003 (as cited in CAPCOA 2013). Based on that report, a percentage of total water consumption was dedicated to landscape irrigation. This percentage was used to determine outdoor water use. Wastewater generation was similarly based on a reported percentage of total indoor water use (CAPCOA 2013). BAU water use calculations do not consider any reduction in water use from these estimates. However, the project will be subject to 2013 Title 24 Part 11 standards, also known as the California Green Building Standards. Thus, in order to demonstrate compliance with the 2013 Title 24 Part 11 standards, a 20 percent increase in water use efficiency was included in the water consumption calculations for the project. It should be noted that compliance with drought regulations is a priority.

The electricity intensity values for various phases of supplying and treating water are derived from the CEC's 2006 Refining Estimates of Water-related Energy Use in California. The water/wastewater emissions for the analysis were calculated by multiplying the total projected water/wastewater demand by the applicable water electricity intensities and the utility intensity GHG factors.

The disposal of solid waste produces GHG emissions from anaerobic decomposition in landfills, incineration, and transportation of waste. To calculate the GHG emissions generated by disposing of solid waste for the project, the total volume of solid waste was calculated using waste disposal rates identified by California Department of Resources Recycling and Recovery. The methods for quantifying GHG emissions from solid waste are based on the Intergovernmental Panel on Climate Change method, using the degradable organic content of waste. GHG emissions associated with the project's waste disposal were calculated using these parameters. BAU and project GHG emissions associated with waste disposal were both calculated using CalEEMod's default parameters.

4.5.3.2 Project GHG Emissions

Based on the methodology summarized in Section 4.2 of the Technical Report, the primary sources of direct and indirect GHG emissions due to the project have been calculated and are summarized in Table 4.5-1. CalEEMod output is provided in the technical report. As shown, the project would generate 8,087 MTCO2E annually. A majority of the GHG emissions would be due to vehicle and energy use sources.

Table 4.5-1 Project (2020) GHG Emissions ($MTCO_2E$ per year)	
Emission Source	Project GHG Emissions
Vehicles	3,111
Energy Use	3,455
Area Sources	472
Water Use	474
Solid Waste Disposal	372
Construction	201
Total Project Emissions:	**8,087**

Source: CalEEMod Version 2013.2.2
Note: Totals may vary due to independent rounding

4.5.3.3 BAU GHG Emissions

BAU emissions are those that would occur in the absence of project design features and new laws and regulations aimed at reducing GHG emissions. BAU emissions in 2020 were calculated using the methodology discussed in Section 4.2 of the technical report. BAU emissions are summarized in Table 4.5-2 CalEEMod output is provided in the technical report. As shown, the BAU scenario would generate 11,396 MTCO2E annually.

Table 4.5-2 BAU (2020) GHG Emissions ($MTCO_2E$ per year)	
Emission Source	Project GHG Emissions
Vehicles	5,687
Energy Use	4,060
Area Sources	472
Water Use	604
Solid Waste Disposal	372
Construction	201
Total Project Emissions:	**11,396**

Source: CalEEMod Version 2013.2.2
Note: Totals may vary due to independent rounding

4.5.4 Significant Impacts

Table 4.5-3 provides a summary of the project emissions relative to BAU emissions and provides the percentage reductions for comparison with the 28.3 percent reduction relative to BAU goal. BAU emissions would total approximately 11,396 MTCO2E annually. Proposed project emissions with GHG reductions would total 8,087 MTCO2E per year. This is an approximate 29.0 percent reduction over BAU. Therefore, the level of impacts associated with contribution of GHGs to cumulative statewide emissions would be less than significant.

Table 4.5-3 Estimated Project and BAU GHG Emissions and Reductions in 2020 ($MTCO_2E$)			
Emission Source	BAU Emissions	Project Emissions	Percent Reduction
Vehicles	5,687	3,111	45.3%
Energy Use	4,060	3,455	14.9%
Area	472	472	0.0%
Water Use	604	474	21.4%
Solid Waste	372	372	0.0%
Construction	201	201	0.0%
Total:	**11,396**	**8,087**	**29.0%**

4.5.5 Mitigation Measures

The project is shown to provide a 29% reduction relative to BAU emissions, consistent with the overall 28.3% reduction targeted in the Scoping Plan/BAU 2020 Forecast. The project, by providing a 29.0% reduction in GHG emissions compared to BAU, exceeds its fair share in achieving the State's reduction target. The project incorporates energy efficiency reductions are consistent with state GHG reduction goals and climate change adaptation strategies. The project is also consistent with green building strategies recommended in the State Climate Change Scoping Plan. Therefore, no mitigation measures will be required.

4.5.6 Level of Significance after Mitigation

With the project GHG emissions reductions relative to BAU emissions, the impact to GHG emissions is less than significant.

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4.6 HYDROLOGY/WATER QUALITY

The Final Environmental Impact Report (FEIR) for Lotus Ranch in 2007 reviewed Hydrology and Water Quality with a hydrology, water quality, and drainage study prepared in November 2005. Due to the fact that the site's hydrology and water conditions have remained unchanged since 2005, this current FEIR utilizes the previous FEIR data. Jones & Stokes' water resources engineers prepared the Lotus Ranch Hydrology and Water Quality Technical Study and Drainage Study (attached as Appendix D to this DEIR). It involved a review of available documentation and consideration for the project's potential to adversely affect the hydrological and water quality conditions on the project site and the associated hydrological setting. The following section presents a summary of information and analysis presented in the Lotus Ranch Hydrology and Water Quality Technical Study and Drainage Study. For a detailed discussion of the various federal, state, and local laws and regulations pertaining to hydrology, water quality, and drainage that are relevant to the project and/or the project site, see Appendix D.

4.6.1 Existing Conditions

Hydrology

The project site is located within the Imperial Valley area of the Imperial Hydrologic Unit. Major hydrologic features of the region include the New River and Alamo River, located east of the site, and the Central Main ~~Canal~~ Drain, which is located west of the site. These features all flow in a south/north direction toward the Salton Sea. The rivers were formed in the mid to late 1800s when the Colorado River occasionally escaped its natural channel and flowed northward towards the present day Salton Sea. The Central Main ~~Canal~~ Drain is a manmade feature that empties discharged runoff and treated wastewater from the City into the Alamo River. The site is within the Alamo River Watershed. The Alamo River conveys agricultural irrigation drainage water from farmlands, surface runoff, and a minor amount of treated municipal and industrial waste waters from the Imperial Valley to the Salton Sea.

Almost all of the water used for agricultural irrigation in the region originates in the Colorado River and is carried to farms by a system of IID-owned and -operated canals. Agricultural runoff is collected in a system of earthen drains also owned and operated by the IID. The Lotus Canal, located adjacent to the site's western boundary, and the Lotus Drain, which runs parallel to the canal on the eastern side, are part of this system. The Lotus Drain is an open ditch that currently receives surface water runoff from the project site. Excess subsurface water on the site is collected in a system of underground tile drains, which carries the water to the Lotus Drain.

The site's topography is generally flat with a gentle slope from the southwest toward the northeast.

Water Quality

Agricultural activity occurs in the area surrounding the project site and has historically occurred on the site generally contributes pesticides, herbicides, nutrients, and sediment to receiving

waters. Pollutant sources from urban areas include parking lots and streets, rooftops, exposed earth at construction sites, and landscaped areas. Urban runoff from streets and residences is also a common source of sediment, hydrocarbons, metals, pesticides, bacteria, and trash. The project is subject to the El Centro Storm Water Ordinance. Updated requirements regarding MS4 programs for local agencies will require additional storm water quality measures to be incorporated during construction and post-construction. These requirements will be reviewed by the City of El Centro Department of Public Works.

Federal Clean Water Act Section 303(d) establishes the Total Maximum Daily Load (TMDL) process to assist in guiding the application of state water quality standards, requiring states to identify streams in which water quality is impaired (i.e., affected by the presence of pollutants or contaminants) and to establish the TMDL, or the maximum quantity of a particular constituent that a water body can assimilate without experiencing an adverse effect. The Colorado River Basin Regional Water Quality Control Board (Colorado River RWQCB) 2012 List Of Water Quality Limited Segments list identifies the Salton Sea as "impaired" for chloride, low-dissolved oxygen, nitrogen ammonia, and toxicity; and identifies the Alamo River and Imperial Valley Agricultural Drains system (which includes the Lotus Drain) as "impaired" for chloride, malathion, and toxicity.

Groundwater

The project is located within the Imperial Valley Groundwater Basin sub basin. The basin has two major aquifers, an upper and a lower, separated by a semi-permeable aquatard averaging 60 feet in thickness. Recharge to the aquifer is primarily from deep percolation of applied irrigation water and irrigation return flows. Other recharge sources are deep percolation of rainfall and surface runoff, underflow into the basin, and seepage from unlined canals that traverse the valley. Groundwater within the basin generally flows toward the axis of the valley and then northwestward towards the Salton Sea. Groundwater levels vary widely within the basin due to differing hydraulic heads and the localized confining clay beds in the area.

Groundwater quality varies extensively throughout the basin. Total dissolved solids (TDS) content ranges from 498 to 7,280 milligrams per liter (mg/L) in the basin. Department of Health Services data from five public supply wells show an average TDS concentration of 712 mg/L and a range from 662 to 817 mg/L. Groundwater in areas of the basin has higher than recommended levels of fluoride and boron.

Approximately 7,000 acre-feet per year (AFY) of groundwater recharge comes from the New River, which drains the Mexicali Valley. This groundwater is related to surface flow in the highly polluted New River and negatively affects groundwater quality in the basin. The New River is listed as impaired under the Clean Water Act section 303(d) for bacteria, dissolved oxygen, nutrients, pesticides, sedimentation/siltation, trash, and volatile organic compounds.

There are no groundwater wells located within the project site or surrounding the project site.

Flooding

Flooding occurs in varying degrees throughout Imperial County. Floodwaters rise either from sudden downpours or as a result of slow, heavy precipitation. Surface levels of the Salton Sea fluctuate yearly but have recently decreased, ~~surface elevations are~~ causing serious drainage problems in adjacent areas. Most of the flat irrigated valley, with its low-lying canal/drain systems, is subject to minor, shallow flooding and ponding due to the lack of local topographic relief, occasional intense storm events, and low soil infiltration rates that produce rapid runoff flows. Development in the valley increases the amount of impervious surfaces and adds to the runoff that can result in downstream flooding. The IID currently limits the capacity of its drainage system in order to reduce downstream flooding potential from combined agricultural and storm runoff, and is in the process of preparing a Preliminary Master Drainage Plan.

The project site and surrounding area is not within a 100-Year Flood Area, as delineated by the Federal Emergency Management Agency.

4.6.2 Impact Significance Criteria

A project will normally have a significant effect if it will:

- cause substantial flooding, erosion, or siltation (CEQA Guidelines, Appendix H) or intensify the potential for property damage and risk to lives from flooding;
- fail to comply with adopted City and IID standards to provide needed improvements to drainage infrastructure;
- 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;
- create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provides substantial additional sources of polluted runoff;
- place housing within a 100-year flood hazard area structures which would impede or redirect flood flows; or
- 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.

4.6.3 Impact Analysis

Hydrology

The project would entail earthwork and construction activity on the site during the project's temporary construction phase. Earthwork could cause soil erosion and sedimentation to the

Lotus Drain, which is part of the Imperial Valley Agricultural Drains system and which will be undergrounded as part of the project. Potential erosion and sedimentation to this system is a significant impact warranting mitigation.

The project would alter the hydrology of the site during the permanent occupational phase of the project by increasing impervious surface (e.g., asphalt, concrete, etc.) on the currently undeveloped site and by placing the Lotus Drain underground. Increased impervious surfaces on the site would mean that less surface water would be absorbed by the on-site soil and that more surface water would flow into the Lotus Drain. This is a significant impact warranting mitigation.

Undergrounding the Lotus Drain would be conducted pursuant to IID standards and the drain would function properly after project implementation.

Surface water from the site would be collected in surface gutter drains that would feed into a series of detention basins proposed for the western and northern portions of the site. The detention basins would be designed to accommodate all runoff from the site, as well as runoff entering the site from adjacent off-site parcels. Outflows from the basins would be slowly released to underground drainpipes, conveyed through a storm water treatment system, and then released into the Lotus Drain. Pursuant to the City of El Centro Retention Basin Standards, the storm drains would be constructed to handle the intensity of a one inch/hour storm event (Lotus Ranch Drainage Study, Appendix D). Additionally, the detention basins would be designed to capture three inches of rain across the entire site, with a drawdown time of no more than 72 hours. This period of storm water detention would decrease the peak flow in the IID system, reduce the discharge of pollutants, and prevent standing water from collecting on the site.

Water Quality

As discussed above, grading and construction activities would potentially lead to soil erosion and sedimentation of the Lotus Drain and the associated regional drainage system. This is not only a hydrological concern but also one of water quality. Grading and construction activity would also potentially lead to pollution of the drainage system from hazardous substances (e.g., oil and gasoline) due to leaking vehicles or improperly used/stored substances. Such pollution would affect surface water and ground water. These impacts are potentially significant and warrant mitigation.

The project would entail trenching and excavation work during the construction phase that may reach a depth below the groundwater table, which would expose an immediate and direct path to the groundwater basin for contaminants. Primary construction-related contaminants that could reach groundwater would include sediment, oil and grease, and construction-related hazardous substances. In addition, discharge of construction-related dewatering effluent could result in the release of contaminants to surface or groundwater. These impacts are considered potentially significant and warrant mitigation.

Permanent impacts include the use of fertilizers and general household pesticides/chemicals during the occupational phase of the project. Residential land uses are potential contributors of

oil, grease, metals, and trash to surface waters and storm water drainage facilities. These impacts to storm drainage capacity and storm water quality are potentially significant and warrant mitigation.

The project would entail the permanent installation of infrastructure such as water supply and wastewater pipelines and storage tanks. The possibility of a pipeline rupturing due to exceedances of pipeline or tank capacity, improper design, installation, maintenance, seismic activity, or other catastrophic events could pose a negative impact on water quality resulting from increased erosion and sediment, as well as discharge of any contaminants contained in the water released from the pipeline (e.g., sewage from influent pipelines). The infrastructure systems would be designed and engineered with sufficient capacity to accommodate anticipated peak flows, minimizing the potential for upset conditions. In addition, infrastructure would be designed to relevant seismic and other standards to minimize the potential for upset from seismic activity or other geologic hazards. Because all facilities would be adequately sized, and designed and constructed to current standards which are considered adequately protective (i.e., the Uniform Building Code), including standards related to seismic safety and geologic hazards, impacts are considered less than significant.

Groundwater

The increased impervious surface on the site would reduce the amount of direct percolation of water into the groundwater table. This would not significantly deplete the groundwater supply in the region. Furthermore, the proposed project will not use groundwater as a water supply source. Therefore, the impact is less than significant.

As discussed above, project construction and operation has the potential to pollute groundwater by accidental spills or leaks of hazardous chemicals. This is a significant impact warranting mitigation.

Flooding

The project site is not within a 100-year flood zone or in an area that could be subject to inundation by levee or dam failure. The project would also not contribute to any flooding issues on adjacent properties. This impact is less than significant, and no mitigation is necessary.

4.6.4 Significant Impacts

HYD 1 Impacts to surface water quality and groundwater quality due to construction related earth disturbing activities and construction-related hazardous substances, as well as post-construction impacts.

HYD 2 Water quality impacts from construction activity occurring below the water table.

HYD 3 Increased amount of surface runoff and associated impacts to drainage facilities.

4.6.5 Mitigation Measures

HYD 1.1 Comply with National Pollutant Discharge Elimination System (NPDES) General Construction Permit and City's Stormwater Program.

To reduce or eliminate construction-related water quality impacts, before onset of any construction activities, the City shall require that construction contractors shall obtain coverage under the NPDES General Construction Permit and comply with the construction requirements of the City's Stormwater Program. The City will be responsible for ensuring that construction activities comply with the conditions in the permit and program, which will require development of a stormwater pollution prevention plan (SWPPP), implementation of BMPs identified in the SWPPP, and monitoring to ensure that effects on water quality are minimized.

As part of this process, the City will require the implementation of multiple erosion and sediment control BMPs in areas with potential to drain to surface water. These BMPs will be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. BMPs to be implemented as part of this mitigation measure may include, but are not limited to, the following measures:

- Temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) will be employed to control erosion from disturbed areas.

- Drainage facilities in downstream offsite areas will be protected from sediment using BMPs acceptable to the County and the RWQCB.

- Grass or other vegetative cover will be established on the construction site as soon as possible after disturbance.

Final selection of BMPs will be subject to review by the City. The City will verify that a notice of intent (NOI) and a SWPPP have been filed before allowing construction to begin. The City or its agent shall perform routine inspections of the construction area to verify that the BMPs specified in the SWPPP are properly implemented and maintained. The City will notify contractors immediately if there is a noncompliance issue and will require that steps be taken to gain compliance.

HYD 1.2 Implement a Spill Prevention and Control Program

The City will require that development contractors develop and implement a Spill Prevention and Control Program to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities for all contractors. The program shall be completed before any construction activities begin. Implementation of this measure will comply with state and federal water quality regulations and reduce the impact to a less-than-significant level.

The City shall review and approve the spill prevention and control program before onset of construction activities. The City will routinely inspect the construction area to verify that the measures specified in the spill prevention and control program are properly implemented and maintained. The City will notify contractors immediately if there is a noncompliance issue and will require that steps be taken to gain compliance.

The federal reportable spill quantity for petroleum products, as defined in the EPA's CFR (40 CFR 110) is any oil spill that (1) violates applicable water quality standards, (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline, or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

If a spill is reportable, the contractor's superintendent will notify the City and the City will contact the appropriate safety and clean-up crews to ensure the spill prevention plan is followed. A written description of reportable releases must be submitted to the RWQCB. This submittal must include a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases will be documented on a spill report form.

If groundwater quality or surface water quality levels have been degraded in excess of water quality standards, Mitigation Measure HYD 1.3 will be required and will reduce this impact to a less than significant level.

HYD 1.3 Implement measures to maintain groundwater or surface water quality

If an appreciable spill has occurred and results determine that project activities have adversely affected surface or groundwater quality, a detailed analysis will be performed by a Registered Environmental Assessor to identify the likely cause of contamination. This analysis will conform to the American Society for Testing and Material standards, and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Any existing agriculture wells that are abandoned will need to be properly destructed. Prior to destruction of abandoned wells, a sample of the upper most water level column should be sampled for contaminants such as oil. The presence of oil could be an indicator that this lubricating oil was used to maintain the well pump. The oil should be removed from the well prior to placement of fill material for destruction. In addition, the oily water will need to be handled in accordance with federal, state, and local laws. Based on this analysis, the contractors will select and implement any other measures to control contamination, with a performance standard that groundwater quality must be returned to baseline conditions. These measures will be subject to approval by the City before they are implemented.

HYD 2.1 Comply with NPDES General Construction Permit and City's Stormwater Program (See Mitigation Measure HYD 1.1)

HYD 2.2 Implement a Spill Prevention and Control Program (See Mitigation Measure HYD 1.2)

HYD 2.3 Implement measures to maintain groundwater or surface water quality (See Mitigation Measure HYD 1.3)

HYD 2.4 Implement provisions for dewatering as follows:

Before discharging any dewatered effluent to surface water, the City shall require contractors to obtain an NPDES permit and waste discharge requirements from the RWQCB. Depending on the volume and characteristics of the discharge, coverage under the RWQCB's General Construction Permit is possible. As part of the permit, the permittee will design and implement measures as necessary so that the discharge limits are met. As a performance standard, these measures will be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. Implemented measures may include retention of dewatering effluent until particulate matter has settled before it is discharged, use of infiltration areas, and other BMPs. Final selection of water quality control measures will be subject to approval by the City.

The City will verify that coverage under the appropriate NPDES permit has been obtained before allowing dewatering activities to begin. The City or its agent shall perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and maintained. The City will notify contractors immediately if there is a noncompliance issue and will require compliance.

HYD 3~~.1~~ Implement Best Management Practices to maximize storm water quality as follows:

Residential land uses are potential contributors of oil, grease, metals, and trash, as well as contribute some pesticides from lawn and garden maintenance. To reduce or eliminate water quality effects from polluted runoff from the operation of the project's residential development, the developer or applicant shall implement multiple BMPs in areas with potential to drain into storm drainage systems and/or surface waters.

As required by the City and the IID, the project will utilize BMPs in the form of detention basins and end-of-pipe stormwater treatment systems to reduce pollutants in stormwater and dry weather runoff to the maximum extent practicable. The City shall inspect the site following construction to ensure that all identified BMPs have been properly installed. The project shall adopt a regular maintenance and monitoring schedule to ensure that these BMPs function properly during project operations. If necessary, the City shall require that additional BMPs be designed and implemented if those originally constructed do not achieve the identified performance standard.

4.6.6 Level of Significance after Mitigation

Implementation of the mitigation measures listed above will reduce all of the significant impacts to a less-than-significant level.

4.7 TRANSPORTATION AND TRAFFIC

A Traffic Impact Analysis was prepared by Linscott, Law & Greenspan Engineers (LL&G) to assess the traffic impacts associated with the construction of the Lotus Ranch development (July 2015). The following gives a summary of the potential impacts and the mitigation measures that would address these impacts. The Traffic Impact Analysis (herein referred to as the "Technical Report" is included in its entirety as Appendix E of the FEIR.

4.7.1 Existing Conditions

4.7.1.1 Existing Street System

The following is a description of the roadways within the project area.

La Brucherie Avenue/Road is classified as a four-lane arterial in the City of El Centro Circulation Element. It is currently constructed as a three-lane undivided roadway with a two-way left-turn lane between Ross Avenue and Ocotillo Drive and as a two-lane undivided roadway south of Ocotillo Drive. The posted speed limit is between 40-50 mph.

Ross Avenue is classified as a four-lane arterial in the City of El Centro Circulation Element. It is currently constructed as a four-lane undivided roadway. Bike lanes and bus stops are not provided. Curbside parking is provided intermittently along both sides of the roadway. The posted speed limit is 35 mph.

Ocotillo Drive is classified as a two-lane collector in the City of El Centro Circulation Element. It is currently constructed as a four-lane undivided roadway. Bike lanes and bus stops are not provided. Curbside parking is permitted. The posted speed limit is 30 mph.

8th Street Bridge / Clark Road is classified as a six-lane arterial from Ross Avenue to Danenberg Drive and as a four-lane arterial from Danenberg Drive to McCabe Road in the City of El Centro Circulation Element. It is currently constructed as a two-lane undivided roadway from Ross Avenue to Wake Avenue and as a four-lane undivided roadway from Wake Avenue to McCabe Road. Bike lanes and bus stops are not provided. Curbside parking is not permitted. The posted speed limit is 35 mph.

McCabe Road is classified as a six-lane prime arterial in the Imperial County Circulation Element. It is currently constructed as a two-lane undivided roadway. Bike lanes and bus stops are not provided. The posted speed limit is 50 mph.

Imperial Avenue is classified as a six-lane arterial in the City of El Centro Circulation Element. It is planned to extend south from I-8 to McCabe Road in the next few years. (See Section 7.3 of Appendix E for more information).

Wake Avenue is classified as a two-lane collector in the City of El Centro Circulation Element. It is currently constructed as a two-lane undivided roadway but is not yet constructed between Imperial Avenue and 8th Street. (See Section 7.3 of Appendix E for more information).

4.7.1.2 Existing Traffic Volumes

Peak hour intersection-turning traffic counts and segment counts within the project area were conducted in October 2014 when schools were in session. The peak hour counts were conducted between the hours of 7:00-9:00 AM and 4:00-6:00 PM.

Table 4.7-1 is a summary of the average daily traffic volumes (ADTs) conducted by Traffic Data in October 2014. Appendix A of the Technical Report contains the intersection and segment manual count sheets.

Table 4.7-1 Existing Traffic Volumes

Street Segment	ADT[a]	Date	Source
La Brucherie Ave			
Ross Ave to Ocotillo Dr	6,953	10/9/2014	LLG
Ocotillo Dr to Wake Ave	5,130	10/9/2014	LLG
Wake Ave to McCabe Rd	3,512	10/9/2014	LLG
Ross Ave			
La Brucherie Ave to Imperial Ave	7,061	10/9/2014	LLG
8th Street Bridge			
Aurora Dr to Wake Ave	10,360	10/9/2014	LLG
Ocotillo Dr			
La Brucherie to Imperial Ave	6,888	10/9/2014	LLG
McCabe Rd			
La Brucherie Rd to Clark Rd	4,415	10/9/2014	LLG
Clark Rd to SR 86	3,849	10/9/2014	LLG
Clark Road			
Wake Ave to McCabe Rd	8,239	10/9/2014	LLG

a. Average Daily Traffic Volumes

4.7.1.3 Methodology

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

Intersections

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the 2010 Highway Capacity Manual (HCM), with the assistance of the *PTV Vistro* (version 3.0) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). A more detailed explanation of the methodology is attached in Appendix B of the Technical Report.

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapter 19 and Chapter 20 of the 2010 Highway Capacity Manual (HCM), with the assistance of the *PTV Vistro* (version 3.0) computer software. A more detailed explanation of the methodology is attached in Appendix B of the Technical Report.

Street Segments

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of El Centro's and the County of Imperial's Roadway Classification, Level of Service, and ADT Tables. These data provide segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The City of El Centro's and the County of Imperial's Roadway Classification, Level of Service, and ADT Tables are attached in Appendix C of the Technical Report.

4.7.1.4 Analysis of Existing Conditions

The following study intersections are calculated to currently operate at LOS D:

- La Brucherie Avenue/W. Main Street (LOS D during the both AM peak PM peak hours)
- La Brucherie Avenue/Ocotillo Drive (LOS D during the AM peak hour)
- Ocotillo Drive/Imperial Avenue (LOS D during the AM peak hour)
- La Brucherie Avenue/McCabe Road (LOS D during the AM peak hour)

4.7.1.5 Existing Public Transit Systems

Public transit services in El Centro are provided by Imperial Valley Transit (IVT), a privately owned fixed-route bus service. The IVT is administrated and funded by the Imperial County Transportation Commission (ICTC). The IVT provides the City of El Centro with two localized bus routes, the "Blue Line" and "Green Line" through its Inner City Circulator Service. These two routes provide access to various points throughout the City, and average about 3,500 passenger trips per month (the figure also includes passenger trips from the Gold Line located in Brawley). The Green Line serves the portion of the City located North of I-8, while the Blue Line serves areas both north and south of I-8. The closest bus stop to the proposed project site is located north of I-8, at the intersections of Ocotillo Drive and La Brucherie Road, approximately .5 miles from the Wake Avenue entrance to the development.

4.7.2 Impact Significance Criteria

The significance criteria developed by Linscott, Law and Greenspan, Engineers is based upon the City of El Centro and the County of Imperial's goal for intersections and roadway segments to operate at LOS C or better. In general, a LOS C or better that degrades to a LOS D or worse is considered a significant direct impact. A cumulative impact can occur if the intersection or segment level of service is already operating below City / County standards and the project increases the delay by more than 2 seconds or the v/c ratio by more than 0.02.

4.7.3 Impact Analysis

4.7.3.1 Project Trip Generation

The trip generation rates for the project are based on the rates outlined in the City of San Diego's Trip Generation Manual and the ITE Trip Generation Manual (9th Edition). The proposed project is planned to develop 609 single-family dwelling units and ±10.8 acres of public park space. Appendix E of the Technical Report includes the Trip Generation Rate Summary table from the City of San Diego's Trip Generation Manual and the ITE Trip Generation Manual (9th Edition).

The proposed land use summary of each phase is listed below:

Phase 1: 247 single-family dwelling units
Phase 2: 116 single-family dwelling units and a ±10.8-acre city park
Phase 3: 246 single-family dwelling units

Phase 1 of the project is calculated to generate approximately 1,591 ADT with 40 inbound/91 outbound trips during the AM peak hour and 113 inbound/49 outbound trips during the PM peak hour.

Phase 1 + Phase 2 of the project is calculated to generate approximately 3,991 ADT with 98 inbound/225 outbound trips during the AM peak hour and 281 inbound/121 outbound trips during the PM peak hour.

The total project is calculated to generate approximately 6,192 ADT with 152 inbound/350 outbound trips during the AM peak hour and 436 inbound/189 outbound trips during the PM peak hour.

The project traffic was distributed and assigned based on the project's proximity to state highways and arterials, locations of retail, places of employment, schools, and other shopping opportunities.

4.7.3.2 Planned Improvements to the Roadway Network

Two major roadway network improvements within the study area are proposed to be constructed in the next several years. For the purpose of this study and based on discussions with City staff, they were assumed to be constructed and open between project phase 2 and 3.

Imperial Avenue Interchange Bridge and Extension: The I-8/Imperial Avenue interchange is proposed to be reconstructed to realign the westbound exits and entrance ramps to I-8 and reconstruct the eastbound exit and entrance ramps. The Imperial Avenue bridge is proposed to be upgraded to four lanes. Imperial Avenue will be extended from I-8 initially to Wake Avenue and eventually to McCabe Road. Construction of the bridge and extension is expected to be completed by 2018.

Wake Avenue Extension: Wake Avenue is proposed to be connected between La Brucherie Avenue and 8th Street. Construction is expected to follow the Imperial Avenue Extension schedule.

4.7.3.3 Cumulative Projects

Other planned projects within the vicinity of the project could potentially add traffic to the roadways and intersections in the study area. Based on a review of other potential projects within the area, and discussions with the City of El Centro and County of Imperial staff, it was determined that the following nine future cumulative development projects should be included in the traffic analysis. Detailed below is a brief description of these cumulative projects. The existing traffic volumes were increased by 10% to account for general growth in traffic in the near future.

Description of Projects

1. **Imperial Center** is a proposed project to be built in three phases, consisting of 722,000 square feet of commercial space including a gas station and convenience store, a hotel and a shopping center. It is located to the east of SR 111 just north of Heber Road. The project is calculated to generate 25,397 ADT, with 421 inbound and 302 outbound trips during the AM peak hour, and 1,131 inbound and 1,203 outbound trips during the PM peak hour.

2. **Linda Vista** is a proposed 173-unit residential subdivision located south of I-8 and west of SR 86. The project also includes 4.6 acres of commercial land use and a school site. The project is calculated to generate 7,970 ADT, with 270 inbound trips and 246 outbound trips during the AM peak hour and 411 inbound trips and 419 outbound trips during the PM peak hour.

3. **Heber Meadows** is a project that proposes to construct a combination of single-family and multi-family residential units. The development would consist of 222 single-family residential units and a 476-unit apartment complex directly north of the single-family residential subdivision. The site is located on the southwest corner of the future Correll Road/Pitzer Road intersection. It is calculated that the proposed project would generate 5,270 ADT, with 87 inbound and 304 outbound trips during the AM peak hour, and 325 inbound and 175 outbound trips during the PM peak hour.

4. **8th Street** consists of a proposed General Plan Amendment from low-density residential to medium-density residential and general industrial. The project site is

located east of SR 86 along the east side of 8th Street on the southwest corner of 8th Street and Bradshaw Road extension. The project proposes 6.9 acres of multi-family units, which would include a maximum 172 dwelling units and 14.72 acres of General Manufacturing. The project is expected to generate approximately 2,000 ADT with 240 PM peak hour trips.

5. **Citrus Grove** is a proposed project involving the residential development of approximately 50 acres of land east of SR 86 and north of McCabe Road. The project is calculated to generate 1,242 ADT, with 24 inbound and 71 outbound trips during the AM peak hour, and 78 inbound and 46 outbound trips during the PM peak hour.

6. **Courtyard Villas** is a proposed project involving 54 single-family units and a park on 21.5 acres, east of Austin Road and South of Orange Avenue. The project is calculated to generate 596 ADT, with 12 inbound and 36 outbound trips during the AM peak hour, and 38 inbound and 22 outbound trips during the PM peak hour.

7. **Imperial Valley Commons** proposes to construct and operate a commercial/retail center. The project is located in the southeastern portion of the City south of I-8, north of Danenberg Drive, and east of Dogwood Avenue. The project site consists of approximately 780,000 square feet of commercial / retail space divided into individual retail stores varying in size. The project is calculated to generate 25,811 ADT, with 339 inbound and 207 outbound trips during the AM peak hour, and 1139 inbound and 1234 outbound trips during the PM peak hour.

8. **Town Center Village Apartments** consists of the construction of a 256-unit apartment complex on 12.75 acres of land. The proposed project is located 1,000 feet east of North Imperial Avenue situation between Cruickshank Drive and Bradshaw Drive. The project is calculated to generate 1,675 ADT, with 26 inbound and 103 outbound trips during the AM peak hour, and 103 inbound and 55 outbound trips during the PM peak hour.

9. **Monterey Park** is a proposed 152-acre residential subdivision including 589 units. The proposed project is located on the southeast corner of Austin Road and Brewer Road in the City of Imperial. The project is calculated to generate 5,388 ADT, with 106 inbound and 317 outbound trips during the AM peak hour, and 326 inbound and 192 outbound trips during the PM peak hour.

4.7.3.4 Analysis of Near-Term Scenarios

Existing + Phase 1 Project

With the addition of Phase 1 project traffic, the following study intersections are calculated to operate at LOS D or worse:

- La Brucherie Avenue/W. Main Street (LOS D during both the AM peak PM peak hours)
- La Brucherie Avenue/Ocotillo Drive (LOS D during the AM peak hour)
- Imperial Avenue/Ocotillo Drive (LOS D during the AM peak hour)

- La Brucherie Avenue/Wake Avenue (LOS F during the AM peak hour)
- La Brucherie Avenue/McCabe Road (LOS D during the AM peak hour).

For Phase 1 project traffic, all street segments in the study area are calculated to operate at LOS C or better.

Existing + Phase 1 and Phase 2 Project

With the addition of Phase 1 and Phase 2 project traffic, the following study intersections are calculated to operate at LOS D or worse:

- La Brucherie Avenue/W. Main Street (LOS D during both the AM peak PM peak hours)
- La Brucherie Avenue/Ocotillo Drive (LOS D during the AM peak hour)
- Imperial Avenue/Ocotillo Drive (LOS D during the AM peak hour)
- La Brucherie Avenue/Wake Avenue (LOS F during the AM peak hour)
- La Brucherie Avenue/McCabe Road (LOS F during the AM peak hour)

For Phase 1 and Phase 2 project traffic, all street segments in the study area are calculated to operate at LOS C or better.

Existing + Total Project (Phases 1 through 3)

With the addition of total project traffic, the following study intersections are calculated to operate at LOS D or worse:

- La Brucherie Avenue/W. Main Street (LOS D during both the AM peak PM peak hours)
- La Brucherie Avenue/Ocotillo Drive (LOS D during the AM peak hour)
- Imperial Avenue/Ocotillo Drive (LOS D during the AM peak hour)
- La Brucherie Avenue/ Wake Avenue (LOS F during both the AM peak PM peak hours)
- La Brucherie Avenue/ McCabe Road (LOS D during the AM peak hour)

For total project traffic, all street segments in the study area are calculated to operate at LOS C or better with the exception of the Wake Avenue segment between La Brucherie Avenue and 8th Street (LOS D).

Existing + Total Project + Cumulative Projects

With the addition of total project traffic, the following study intersections are calculated to operate at LOS D or worse:

- La Brucherie Avenue/W. Main Street (LOS D during both the AM peak PM peak hours)
- La Brucherie Avenue/Ocotillo Drive (LOS D during the AM peak hour)

- Imperial Avenue/Ocotillo Drive (LOS E during the AM peak hour and LOS D during the PM peak hour)
- La Brucherie Avenue/Wake Avenue (LOS F during both the AM and PM peak hours)
- La Brucherie Avenue/ McCabe Road (LOS F during the AM peak hour)

For total project traffic and cumulative projects, all street segments in the study area are calculated to operate at LOS C or better with the exception of the Wake Avenue segment between La Brucherie Avenue and 8th Street (LOS D).

4.7.3.5 Horizon Year Analysis

The horizon year street segment volumes were obtained from the City of El Centro Traffic Circulation Element (January 2006) and the Imperial County Circulation Element Update (August 2006), depending on the roadway location. Table 4.7.3.5 shows the volume/capacity street segment analyses for the Horizon Year scenario.

Table 4.7-2 – Horizon Year Street Segment Operations

Street Segment	Capacity (LOS E)[a]	Horizon Year		
		ADT[b]	LOS[c]	V/C[d]
La Brucherie Avenue				
Ross Ave to Ocotillo Dr	37,000	28,350	0.766	C
Ocotillo Dr to Wake Ave	37,000	16,670	0.451	B
Wake Ave to McCabe Rd	34,200	22,110	0.646	B
Ross Avenue				
La Brucherie Ave to Imperial Ave	34,200	12,290	0.359	A
Ocotillo Drive				
La Brucherie Ave to Imperial Ave	27,000	10,100	0.374	A
8th Street Bridge / Clark Road				
Aurora Dr to Wake Ave	54,000	31,830	0.589	A
Wake Ave to McCabe Rd	34,200	24,400	0.713	C
McCabe Road				
La Brucherie Ave to Clark Rd	57,000	28,500	0.500	B
Clark Rd to SR 86	57,000	28,500	0.500	B
Imperial Avenue				
I-8 to Wake Ave	27,000	14,570	0.540	A
Wake Ave to McCabe Rd	27,000	14,570	0.540	A

a. Capacity based on County of Imperial/City of El Centro Roadway Classification & LOS table (See Appendix C of the Technical Report)
b. Average Daily Traffic
c. Level of Service
d. Volume to Capacity

Future I-8 / Austin Road Interchange Analysis

A new interchange is planned for I-8 via Austin Road. There is no programmed construction year or identified funding. As explained in Section 7.3 of the Technical Report, construction of the Imperial Avenue bridge and roadway extension to McCabe Road is expected to be completed in the next several years. Due to the proximity of the Imperial Avenue interchange to the project site and the layout of the surrounding street network, it is not likely that project-related traffic would utilize the future Austin Road interchange to access the project. However, an analysis of the Austin Road interchange in the Horizon Year scenario was included in this study per Caltrans' request. Horizon year peak hour intersection volumes were forecasted based on the horizon year ADT volumes found in the County of Imperial Circulation Element Update. Several other traffic engineering principles and factors, such as the peak hour factor and direction factor, were considered. For this analysis, 10% of the project traffic was distributed to the Austin Road interchange. With or without a new interchange, both intersections are calculated to operate at LOS C or better.

4.7.3.6 Public Transit Analysis

The addition of 609 homes (and the population increase associated therewith) to the City of El Centro will result in an increase in the need for and access to public transit services, both to and from the proposed project site.

4.7.4 Significant Impacts

The project would result in significant direct ~~and cumulative impacts to three intersections, one roadway segment, and operational~~ impacts to ~~proper site access, as listed below~~ one intersection and to public transit services, as listed below:

Intersections

T 1 Project traffic would cause a significant increase in delay at the La Brucherie Avenue / Wake Avenue intersection.

Public Transit

T2 The project would cause an increase the need for public transit services to and from the proposed project site.

4.7.5 Mitigation Measures

T 1 The project applicant shall signalize the intersection of La Brucherie Avenue / Wake Avenue and provide the following lane configurations (prior to the construction of ~~30~~ 222 dwelling units):

Northbound: one (1) dedicated left-turn lane

one (1) dedicated thru lane
one (1) dedicated right turn lane

Southbound: **one (1) dedicated left-turn lane**
two (2) dedicated thru lane
one (1) dedicated right turn lane

Westbound: **one (1) dedicated left-turn lane**
one (1) shared thru/right-turn lane
Eastbound: **one (1) dedicated left-turn lane**
one (1) dedicated thru lane
one (1) dedicated right turn lane

T2 The project applicant shall coordinate with the ICTC to establish a bus stop curb pullout and location within and/or surrounding the site.

4.7.6 Level of Significance after Mitigation

With mitigation the proposed project would result in a less than significant impact.

4.8 NOISE

The Final Environmental Impact Report (FEIR) for Lotus Ranch in 2007 reviewed noise impacts with a Noise Assessment Technical Report (Noise Report) prepared in November 2005 and included as Appendix F in this DEIR. Due to the fact that the site's potential for creating noise impacts from project construction and traffic-oriented impacts have remained unchanged since 2005, this current DEIR utilizes the previous FEIR data with additional data collected in July of 2015. The Addendum to the Noise Report (Noise Addendum) was completed by RECON in July 2015 and measured noise impacts from traffic generated from both the project and traffic and machinery from the adjacent El Toro Export Company. It also reviewed potential noise impacts associated with the School Site Alternative. This Noise Addendum is included as Appendix G to this DEIR. The Noise Report considered the on- and off-site noise impacts resulting from construction activity and project operation and estimated the traffic noise levels received by project residences adjacent to busy roadways. Determination of noise impacts is based on the relevant thresholds maintained by the City and published in the City of El Centro General Plan Noise Element and the City's Noise Ordinance (Chapter 17.1 of the Civil Code).

Noise Definitions

Noise is generally defined as unwanted sound. Sound is technically described in terms of the loudness (amplitude) and frequency (pitch) of the sound. The standard unit of measurement for sound is the decibel (dB), which is adjusted for the hearing sensitivity of the human ear by the "A-weighted scale," or "dBA." Human hearing extends from approximately three dBA to 140 dBA. Because decibels are logarithmic units, they cannot be added or subtracted by ordinary arithmetic means. For example, if one automobile produces 70 dB when it passes a receiver, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Sound energy generally must be doubled to produce a 3-dB increase. Additionally, if two sound levels differ by 10 dB or more, the combined level is equal to the higher of the two; the lower sound level would not increase the higher sound level.

People generally perceive a 10-dBA increase in a noise source as a doubling of loudness. For example, an average person would perceive a 70 dBA sound level as being twice as loud as a 60 dBA sound. People generally cannot detect differences of 1 to 2 dBA between noise levels of a similar nature (e.g., an increase in traffic noise compared to existing traffic noise).

Noise in our daily environment fluctuates over time. The noise descriptors Equivalent Sound Level (L_{eq}), Community Noise Equivalent Level (CNEL), Maximum Noise Level, and Percentile Noise Level (L_{nn}) have been developed to describe time-varying noise levels. These are briefly described below. For a more in depth description, please see Appendix G of this EIR.

L_{eq} represents an average of the sound energy that occurs over a specified period. The 1-hour A-weighted equivalent sound level (L_{eq}[h]), is the energy average of the A-weighted sound levels occurring during a 1-hour period and is the basis for noise abatement criteria (NAC) used by Caltrans and the Federal Highway Administration (FHWA).

CNEL is the sound level occurring at a particular location when averaged over the course of a 24-hour day and with consideration for distance, single event duration, single event occurrence, frequency, and time of day. Humans are generally more sensitive to noise during nighttime and early morning hours than they are during regular morning and daytime hours. CNEL accounts for this sensitivity by adding five dBA to sound levels in the evening from 7:00 PM to 10:00 PM, and ten dBA to sound levels between 10:00 PM and 7:00 AM. Because CNEL accounts for human sensitivity to sound, the CNEL 24-hour figure is always a higher number than the actual recorded 24-hour average.

L_{max} approximates the loudest noise occurring over one second during a specified time period. The Lmax is generally used to quantify short-term pass-by noise, such as that caused by traffic and railroad activity.

L_{nn} is the percentile noise level noise level exceeded for "nn" percent of a measurement period. For example, the L_{10} is a relatively loud noise level that is exceeded only 10 percent of the time, while the L_{90} is a relatively quiet noise level exceeded 90 percent of the time.

When sound propagates over a distance, it changes in level and frequency content. Noise from a stationary source generally attenuates at rate of six dBA for each doubling of distance because of the geometric spreading behavior of sound waves. For highways, where the movement of the vehicles results in sound emanating from a linear source rather than a point, noise attenuates at a rate of three dBA per doubling of distance due to spreading of sound waves. Noise attenuation from ground absorption and reflective-wave canceling adds to this attenuation. When combined with the geometric spreading factor, the excess ground attenuation results in an overall drop-off rate of about 4.5 dBA per doubling of distance for a line source and about 7.5 dBA per doubling of distance for a point source. Noise may also be shielded by natural or man-made features standing between the noise source and the noise receptor.

4.8.1 Existing Conditions

The project site and surrounding area experiences noise generated by vehicles traveling along public roads (including I-8), agricultural machinery, and aircraft overflights related to the Naval Air Facility El Centro, which is located approximately four miles west of the site. Vehicle traffic generates the loudest noise levels received on the site. Sensitive receptors near the project site include residences located east and north of the project site and Southwest High School located north of the site across I-8. Other residences located along further from the project site along roadways that would be affected by project traffic have also been considered in the project analysis. The previous FEIR determined that military aircraft do not generate unacceptably high noise levels at the project site.

On-Site Noise Levels

Baseline noise readings were taken on and adjacent to the proposed site on October 31, 2005 and took each noise reading for a 15-minute duration during mid-morning to define the general nature of key noise events. Locations of the monitoring locations are shown in the Noise Report (Appendix F).

Additional noise measurements were taken on July 8 and 9, 2015. RECON conducted a site visit to observe existing conditions and measured noise levels at the proposed Lotus Ranch project site to determine the existing noise levels occurring on-site due to existing operations at the El Toro Export company and to provide information on portions of the proposed site that could affect future residential development. The main purpose of the measurements was to assess traffic noise to determine noise impacts on the proposed Lotus Ranch project site. The short-term measurements were taken with traffic counts to allow for a correction related to potential differences in vehicle volumes and vehicle size classifications.

Traffic Noise Levels

Using forecast traffic volumes produced for this EIR and FHWA noise calculation formulas, Jones & Stokes estimated CNEL traffic noise levels as received by sensitive receptors adjacent to the existing street segments where the proposed project would eventually generate the most vehicular trips. Table 4.8-1 presents the modeled traffic noise levels under existing conditions. Noise levels were only estimated for the row of homes closest to the roadway, as homes beyond the first row would be substantially shielded from traffic noise by the first row of homes.

Table 4.8-1 Existing Roadway Noise Levels

Roadway Segment	Existing Land Use	Existing CNEL
Ross Road		
--Austin – La Brucherie	Residential	58
Ocotillo Drive		
--La Brucherie – Imperial	Residential	58
I-8		
--Imperial-xx	Freeway buffer zone	78
Wake Avenue		
--Clark Road – SR-86	Residential	59
McCabe Road		
--Austin – La Brucherie	Agricultural	56
--La Brucherie – Clark	Agricultural/Residential	59
--Clark – SR-86	Agricultural	57
La Brucherie Avenue		
--McCabe – I-8	Agricultural/Commercial	58
--I-8 to Ocotillo	Residential	60
--North of Ross Road	Residential	64
SR-86		
--Wake – I-8	Agricultural/Commercial	79

Source: Jones & Stokes, 2005; updated October 2006 to reflect revised traffic forecasts (LLG, 2006)

4.8.2 Impact Significance Criteria

Construction

Pursuant to the City of El Centro Municipal Code Section 17.1-8, a significant construction noise impact would occur if noise levels exceed 75 dBA at the receiving property line during construction of the proposed project. This noise limit would apply to existing homes outside the proposed development, and it would apply in the future for newly-occupied homes within the development being impacted by construction of additional homes.

Operation

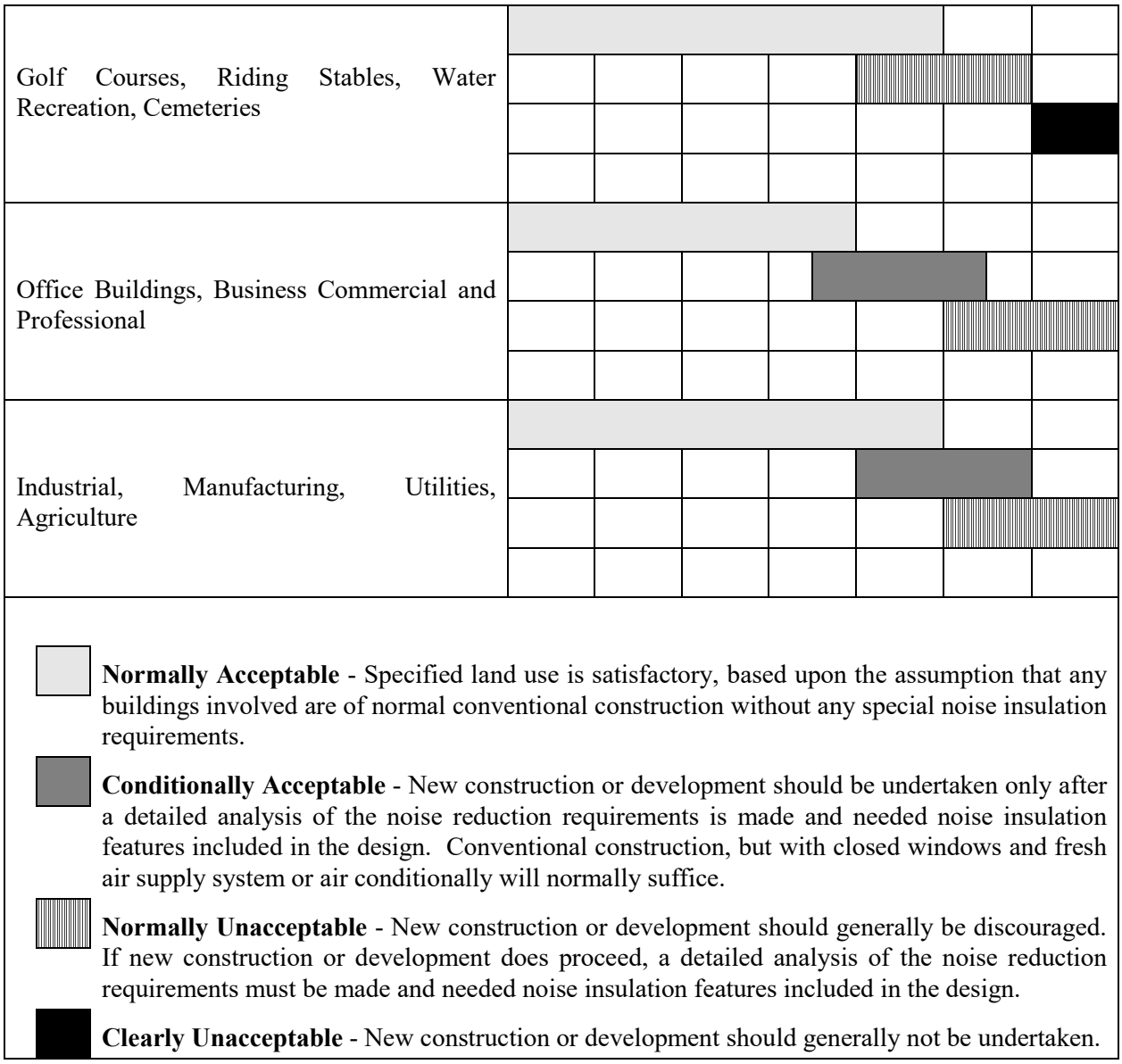
The City General Plan Noise Element sets goals and policies to minimize noise impacts within the City. Key goals and policies that affect the noise analysis for the proposed development include:

- Adoption of the Noise/Land Use Compatibility Matrix developed by the State. The matrix is shown below in Table 4.8-2. The City's matrix also specifies the following compatibility zones: Zone A, Normally Acceptable; Zone B, Conditionally Acceptable; Zone C, Normally Unacceptable; Zone D, Clearly Unacceptable.

- The City requires all new residential construction to include noise insulation to provide an indoor noise level of 45 dBA CNEL in accordance with the Title 24 California Noise Insulation Standards. Title 24 standards apply when the forecast exterior noise level exceeds the Zone B compatibility threshold of 60 dBA CNEL.

Table 4.8-2 Noise/Land Use Compatibility Chart

Land Use Category	Community Noise Exposure (dBA, CNEL)					
	55	60	65	70	75	80
Residential - Low Density Single-Family, Duplex, Mobile Homes						
Residential - Multi-Family						
Transient Lodging - Motels Hotels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Auditoriums, Concert Halls, Amphitheaters						
Sports Arena, Outdoor Spectator Sports						
Playgrounds, Neighborhood Parks						



Source: California Office of Noise Control, Department of Health Services.

A significant noise impact would occur if noise levels exceed the acceptable limits set forth in the Noise Element:

For project residences, a noise impact would occur where

- noise exceeds the Zone B "Conditionally Acceptable" level of 70 dBA CNEL for project residences (triggering the noise insulation requirement to maintain indoor noise level less than 45 dBA CNEL); or

- noise exceeds the Zone C "Normally Unacceptable" level of 75 dBA for project residences

For off-site residences, a noise impact would occur where

- noise exceeds the Zone B "Conditionally Acceptable" level of 70 dBA CNEL and the *project-related* noise increase exceeds five dBA CNEL; or

- noise exceeds the "Normally Unacceptable" level of 75 dBA CNEL and the *project-related* noise increase exceeds three dBA CNEL.

City of El Centro Noise Ordinance

Chapter 17.1 of the City Code specifies allowable daytime and nighttime limits for noise generated by commercial and industrial operations. The allowable limits at the receiving property boundary are listed in Table 4.8-4. These noise limits do not apply to noise generated by vehicles on public roads. However, they do apply to trucks and buses operating in private property (e.g., trucks at commercial loading areas).

Table 4.8-3 Allowable Noise Levels Generated by Commercial and Industrial Activity

Receiving Property Zone	Daytime Limit (1-hour L_{eq})	Nighttime Limit (1-hour L_{eq})
Single-family residential	50	45
Multiple family residential	55	50
Commercial	60	55
Manufacturing	75	70

The City ordinance also specifies that construction operations cannot cause noise levels to exceed 75 dBA (1-hour L_{eq}) for more than eight hours per day. Construction noise exceeding 75 dBA L_{eq} for *less than* 8 hours in a day is allowed. Therefore, a significant impact would occur if project construction generated noise levels in excess of 75 dBA at the receiving property line during construction of the proposed project. This noise limit would apply to existing homes outside the proposed development, and it would apply in the future for newly-occupied homes within the development affected by construction of homes in latter phases of the project.

4.8.3 Impact Analysis

Construction Impacts

Project construction would result in temporary increases in ambient noise levels in the project area on an intermittent basis. Construction noise from machinery, vehicles, and other operations could result in temporary annoyance to residences east of the site across La Brucherie Avenue. Noise levels would fluctuate depending on the construction phase, equipment type and duration of use; distance between the noise source and receptor; and presence or absence of noise attenuation barriers (e.g., existing buildings between the construction site and the noise receiver).

Construction activities require the use of numerous noise-generating equipment, such as jackhammers, pneumatic impact equipment, saws, and tractors. Typical noise levels from various construction phases are shown below in Table 4.8-4. These levels account for simultaneous operation of different types of equipment and the duration of use, as based on surveys conducted by the U.S. Environmental Protection Agency. The surveys were conducted in the early 1970s; since then, regulations have been enforced to improve noise generated by certain types of construction equipment to meet worker noise exposure standards. However, many older pieces of equipment are still in use. Thus, the construction phase noise levels indicated in the table below may be viewed as conservative. As the table shows, the highest noise levels are expected to occur during the grading/excavation and finishing phases of construction.

Table 4.8-4 Typical Outdoor Construction Noise Levels

Construction Phase	Noise Level (L_{eq}, dBA)			
	At 50 feet	At 50 Feet with Mufflers	At 100 feet	At 200 feet
Ground Clearing	84	82	76	70
Grading/Excavation	89	86	80	74
Foundations	78	77	71	65
Structural	85	83	76	70
Finishing	89	86	80	74
Source: EPA, 1971				

The estimated construction noise levels at a distance of 100 feet exceed the 75-dBA L_{eq} significance threshold, but noise levels at a distance of 200 feet would be less than the significance threshold. The projected construction noise level would likely cause localized and temporary noise impacts during some phases of construction, at distances within 100 to 200 feet of the construction site. All off-site residences are located over 100 feet away from the proposed construction activities. Therefore, there would be no significant impact to nearby residences during project construction. However, some project homes may be occupied while latter phases of the project are constructed. A significant impact could result from these on-site residences receiving noise during construction activity.

Operational Impacts

The project would increase vehicular traffic levels on the local circulation system. This would generate an increased amount of traffic noise received by nearby residences located along roadways. Utilizing FHWA noise calculation formulas and project-related trip distribution estimates provided by Linscott Law & Greenspan in the previous EIR, Jones & Stokes modeled the CNEL impacts from project-related traffic volumes, comparing them to the estimates of existing noise conditions discussed above. The analysis was conducted for the year 2010, when the project was originally anticipated to be fully occupied. Table 4.8-5 shows the project's estimated impacts

at the various studied locations. Areas where existing 2010 noise (regardless of project traffic contribution) is expected to exceed relevant thresholds are shown in italicized text.

Table 4.8-5 Project Impacts to Roadway Noise Levels

Roadway Segment	Existing Land Use	Existing CNEL (2010)	Existing + Project	Project-Related Increase
Ross Road				
--Austin – La Brucherie	Residential	58	59	1
Ocotillo Drive				
--La Brucherie – Imperial	Residential	59	61	2
I-8				
	Freeway buffer zone	*79*	*79*	*0*
Wake Avenue				
--Clark Road – SR-86	Residential	60	60	0
McCabe Road				
--Austin – La Brucherie	Agricultural	56	58	2
--La Brucherie – Clark	Agricultural/Residential	59	60	1
--Clark – SR-86	Agricultural	57	58	1
La Brucherie Avenue				
--McCabe – I-8	Agricultural/Commercial	58	60	2
--I-8 to Ocotillo	Residential	61	62	1
--North of Ross Road	Residential	65	65	0
SR-86				
--Wake – I-8	Agricultural/Commercial	79	79	0

Source: Jones & Stokes, 2005; updated October 2006 to reflect revised traffic forecasts (LLG, 2006)

As the table shows, the project is anticipated to increase traffic noise levels by between zero and two decibels. This is a minor increase that would barely be perceptible to the human ear. With project traffic, noise levels are not anticipated to exceed the Zone B "Conditionally Acceptable" level of 70 dBA at residential uses along segments of Ross Avenue, Ocotillo Drive, Wake Avenue, McCabe Road, and La Brucherie Avenue. The project is anticipated to increase vehicular noise by one and zero dBA along these segments, respectively. Because the project would not increase noise levels by five dBA or more at these locations, there is no significant impact. The project is not anticipated to increase noise at the two locations of heavy traffic where vehicle noise is at 79 dBA (I-8 and SR-86); therefore, there is no significant impact.

The project would place new residences adjacent to areas of heavy traffic that experience high volumes of traffic noise. All residences would be constructed to meet the State's Title 24 interior noise standards, in accordance with City policy. Noise generated by I-8 and La Brucherie Avenue would adversely affect new homes nearest to the roadways. With addition of project trips, the traffic along I-8 is anticipated to generate noise at approximately 79 dBA, which is in the Zone D "Clearly Unacceptable" range set forth in the Noise Element. Jones &

Stokes estimated that the noise levels received by the first row of homes facing I-8 would be 78 dBA. This is a significant impact requiring additional mitigation to allow the interior noise levels to meet State Title 24 standards. With addition of project trips, the traffic along La Brucherie Avenue is anticipated to generate noise at approximately 67 dBA, which is at the upper end of the City's "Conditionally Acceptable" noise threshold. This is a significant impact requiring additional mitigation to allow the interior noise levels to meet State Title 24 standards.

Noise generated from current operations of the El Toro Export facility and cattle feed lot immediately south of the project site were found to not exceed the City noise compatibility threshold of 60 dBA CNEL. Therefore, the operations of the El Toro Export facility and cattle feed lot will not have significant noise impacts to future residences in the Lotus Ranch project.

4.8.4 Significant Impacts

N 1 Temporary, localized noise would be received by on-site residences in excess of the acceptable 75-dBA CNEL threshold when project construction occurs within 150 feet of occupied project structures.

N 2 Traffic noise levels at the first row of homes closest to Interstate-8 would be 78 dBA CNEL, which exceeds the City's "Clearly Unacceptable" threshold of 75 dBA CNEL.

N 3 Traffic noise levels at the first row of homes facing La Brucherie Avenue would be 65 dBA CNEL approximately 50 feet from the centerline, which is within the limits of the City's "Conditionally Acceptable" threshold of 70 dBA CNEL.

4.8.5 Mitigation Measures

N 1.1 Construction contracts shall specify that all construction equipment shall be equipped with mufflers and other suitable noise attenuation devices.

N 1.2 All existing residential units located within 200 feet of the construction site shall be sent a notice regarding the construction schedule of the proposed project. Signs, legible at a distance of 50 feet shall also be posted at the construction site. All notices and signs shall indicate the dates and duration of construction activities, as well as provide a telephone number where residents can inquire about the construction process and register complaints.

N 2 Prior to completion of the homes closest to Interstate-8, the developer shall construct a permanent noise barrier to shield the homes from freeway noise. The noise wall should be designed to provide at least eight dBA of noise reduction at the first row of homes. That noise barrier would reduce freeway noise levels at the homes nearest Interstate-8 to the "Conditionally Acceptable" noise compatibility category. The City-wide requirement to meet the Title 24 construction standards for indoor noise would then be adequate to provide a suitable noise environment inside the homes.

N 3 The applicant shall be required to install a noise wall to reduce acoustical impacts to outdoor uses on residences along La Brucherie Avenue. The noise barrier shall be designed to reduce the noise impacts to an acceptable level (60 CNEL) in accordance with the City of El Centro Noise Element of the General Plan.

4.8.6 Level of Significance after Mitigation

Implementation of the mitigation measures listed above would reduce the impacts to less-than-significant levels.

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4.9 PUBLIC SERVICES

This section summarizes the results of research that included documentation and contact to City and County officials to identify the project's impact on local public services. Analysis is provided regarding the project's effect on the provision of water service and availability, sewage treatment capacity, solid waste disposal, fire services, law enforcement, schools, and parks.

The City prepared a Service Area Plan (SAP) in November 2005 and is currently preparing a new SAP. The SAP is a requirement of State law that outlines a jurisdiction's public facilities and services system, including existing conditions, planned improvements and extension to new areas, and a funding program. The SAP is incorporated herein by reference, but is not attached as an appendix to this DEIR due to its large size. A separately bound copy of the SAP and all of its appendices will be available for review at the Community Development Department offices.

4.9.1 Existing Conditions

Water Service

The City owns and operates an extensive water treatment and distribution system that serves residences, businesses, and public land within its boundaries. Included in this system is a water treatment plant that provides clarification, filtration, and disinfection of water from the Colorado River. Untreated water is delivered to the plant via two Imperial Irrigation District (IID) facilities: the All American Canal and the Date Canal, and stored in large tanks adjacent to the plant. The water treatment plant is located at Clark Road (South 8th Street) and Danenberg Drive, ½ mile south of I-8 approximately one mile east of the project site. The City serves water to 9,537 connections with an average day demand (ADD) of approximately 8.6 million gallons per day (mgd). Treated water is stored in four water tanks with a combined capacity of 15.0 million gallons (mg). The water is then pumped from these storage tanks by four 4,000-gallons per minute (gpm) capacity booster pumps to users via a grid of distribution pipelines and water mains. According to the City's Water Master Plan, due to the minor variation in ground elevations, the system does not have any gravity reservoirs and no elevated tanks in service. Thus, all system storage is ground storage, which must be used in combination with booster pumps. The system has two primary locations with storage. The first location is at the Water Treatment Plant (WTP) near the southern end of the City's service area. The City has four~~two~~ raw water ponds and three treated water tanks at the WTP site. This site has about 52 mg of raw water storage that is used to buffer imported water supply and provide supply reliability in case of an interruption of imported water supply. The distribution system is comprised of several main pipelines that extend from the water treatment plant, which range from 18" to 30" in diameter, and a citywide matrix of pipelines that range from 8" to 30" in diameter. An 18" east-west water line is located within Wake Avenue, terminating east of the project site across La Brucherie Avenue, which provides direct service to residences in the area. The most common pipeline diameter is 8 inches, contributing to 58 miles or 39 percent of the City's distribution system.

The existing storage and conveyance capacity of 21 mgd is sufficient for existing daily water demand and peak flow requirements. The system also has adequate capacity to accommodate anticipated near term development. Periodic improvements have been made to modernize the facilities and materials since the system was overhauled in the 1950s, including a major modification of the pumping system in 1994. The system has never faced serious capacity concerns. The system will continue to require periodic improvements in addition to the expansion necessary to accommodate growth in the City and the City's SOI, as discussed below.

Water Supply

Dynamic Consulting Engineers, Inc. prepared a Water Supply Assessment (Appendix H) for the proposed project in September 2015, in accordance with applicable sections of the Public Resources Code and California Water Code as referenced in Senate Bills 610 and 221. The legislation mandates that detailed water availability information, in the form of a water supply assessment as defined in the bill, be provided to city and county decision makers prior to approval of large development projects, including residential projects of 500 or more units. Water services discussion in this section includes information from the Water Supply Assessment.

The IID supplies raw water from the Colorado River to a 6,471 square mile service area, which includes the Imperial Valley and parts of the Coachella Valley. The IID mainly provides water to agricultural users, with only approximately three percent of its water going to urban uses. Since 1942, water has been diverted at Imperial Dam on the Colorado River through the 82-mile-long All-American Canal, all of which the District now operates and maintains. All water distributed by the IID is imported from the Colorado River. The water is transported to the Imperial Valley via the All American Canal, and is then distributed throughout the service area via three main canals. These three canals in turn feed numerous lateral canals, which provide water to the agricultural end user or to municipal treatment plants. The IID is the largest irrigation district in the nation. The City purchases water from IID and treats it in a municipal water treatment facility to provide potable water to municipal and industrial uses within its sphere of influence.

As of the 2010 Census, the population of IID's service area is 174,528. According to the Southern California Association of Governments (SCAG) the City's estimated 2014 population is 43,856 and is expected to expand rapidly in the near future. The IID provides a secure, reliable, and stable water supply that currently exceeds the City's existing demands including for summertime maximum-day demands.

Sewer

The following section of the SAP contains information published in the Sewer Master Plan, which was prepared for the City by Carollo Engineers in March 2008.

The City owns, operates, and maintains a system of approximately 125 miles of wastewater collection pipelines, pump stations, and treatment facilities that serves approximately 8,000 residences, businesses, and public facilities within the City and the City Sphere of Influence

(SOI). Facilities within this system are developed and maintained by the Department of Engineering and the Department of Public Works. Previous master planning efforts include the 2001 Master Plan and a Water and Wastewater Master Plan Amendment by Nolte dated March 2004.

The City owns and operates a sewage treatment plant, which is located at 2255 La Brucherie Avenue just south of the Central Main Drain and approximately three miles north of the project site. The plant has a capacity of 8.0 mgd that provides secondary level treatment of wastewater generated within the service area. Treated wastewater is discharged to the New River. An 18- to 30-inch gravity main runs north-south within La Brucherie Avenue in the vicinity of the project site, conveying sewage from residences to the wastewater treatment plant.

According to the 2008 Sewer Master Plan, current generation from City wastewater customers averages approximately 3.4 mgd, and existing peak flow is approximately 6.0 mgd. The designed treatment capacity of the facility is 8.0 mgd. The existing wastewater treatment and sewer service facilities are adequate to serve existing demands within the service area. In addition, new development outside of the existing wastewater service area is only allowed if the developer or the City provides new wastewater services, primarily trunk sewers.

Solid Waste

On March 20, 2007, the City entered into a Franchise Agreement for integrated solid waste management services with CR&R Incorporated. These services include, but are not limited to, residential automated curbside collection, multi-family and commercial refuse and recyclable bin collection and roll off refuse and recyclable material processing and collection. CR&R commenced these services on July 1, 2007. The Imperial Valley Waste Management Task Force, made up of six participating cities, oversees solid waste disposal throughout the County. The County's Task Force maintains a 50 percent solid waste diversion goal for its member jurisdictions (including the City), meaning that 50 percent of solid waste potentially destined for regional landfills must be recycled, reused, or otherwise diverted from the landfills. According to the County's Task Force, the City has exceeded the 50 percent goal every year since 2000.

The project site is currently served by CR&R Incorporated, a privately owned company that collects and transports solid waste from residences and businesses under a County permit system. CR&R, in conjunction with the City, has incorporated a comprehensive waste reduction program that would limit the amount of solid waste production from City businesses and residents. Additionally, the County's Task Force and the County encourage existing and new developments to participate in recycling programs to help meet or exceed diversion goals.

Under the Agreement between the City of El Centro and CR&R, several landfill disposal sites are available for waste generated from within the City limits. CR&R has the ability to utilize the following sites: Imperial County Regional landfill east of the City of Imperial, South Yuma County Landfill south of the City of Yuma, Arizona, and the Salton Sea Landfill north of the City of Westmorland off of Highway 86. All three sites have excess capacity and will be available for disposal for over 50 years.

Fire/Emergency Medical

The project site is currently within the jurisdiction of the Imperial County Fire Department, but it is within the City Sphere of Influence and is therefore anticipated for annexation into the service area of the El Centro Fire Department (ECFD). ECFD serves land within the city limits, as well as some unincorporated areas adjacent to the City limits. ECFD provides a full range of services related to fire protection, fire prevention, fire response, emergency response, and public safety. ECFD is staffed by one chief, 40 firefighters in operations, and four non-sworn administrative personnel. The City currently operates three fire stations: Fire Station #1, located at 775 State Street (approximately 1.5 miles northeast of the project site), Fire Station #2, located at 900 Dogwood Road (approximately two miles northeast of the project site), and Fire Station #3, located at 1910 North Waterman Avenue. Ten on-duty fire-fighting personnel are available on a 24-hour basis. ECFD also provides services for a significant number of visitors and residents from nearby and distant jurisdictions that are conducting business, accessing public or private services, or just passing through El Centro.

ECFD uses the National Fire Protection Association (NFPA) standard 1710 to measure service delivery. This standard requires that the first engine company responding to a fire arrive at the scene within four minutes of receiving an alarm. The standard further requires the remainder of the first team assignment arrive less than eight minutes after the alarm. ECFD prepares an annual report that reviews personnel and lists response calls for the various services performed throughout the year. Most recently, ECFD logged an average response time of approximately four to eight minutes for emergency calls, consistent with the NFPA standard, and 10 to 15 minutes for non-emergency calls. However, ECFD is not currently capable of effectively responding to calls in the area of the project site within the times set out in the NFPA standard.

ECFD records show that the department responded to an average of 10.5 emergency calls per 24-hour shift. Responding to this volume of calls has placed constraints on existing ECFD resources, making it difficult to effectively respond to simultaneous calls and complete non-emergency duties including training, fire prevention inspections, public education, and fire station apparatus and equipment maintenance.

In addition to the fire/emergency services, the presence of the El Toro Export hay storage operation immediately south could pose potential fire hazards to the residences due to the stacks of hay and the potential for flare-ups. Flare-ups at this facility would threaten nearby residences and the toxicity of the smoke could cause dangers to residents' health.

Law Enforcement

The project area is currently located in the jurisdiction of the Imperial County Sheriff's Department, but it is within the City sphere of influence and is therefore anticipated for annexation into the service area of the El Centro Police Department (ECPD). ECPD is the primary law enforcement agency serving the citizens of the City and the land within the City boundaries. Law enforcement services within the Sphere of Influence are enhanced through mutual aid agreements between ECPD and all local law enforcement agencies, including the Imperial County Sheriff's Department and the California Highway Patrol.

The City operates the El Centro Police Department (ECPD), which is the primary law enforcement agency that serves the residents of the City as well as government, private businesses, and visitors within City boundaries. Sworn officers of the ECPD patrol the City and respond to calls for crimes, emergencies, and other law enforcement services within their jurisdiction. Non-sworn personnel of the ECPD are responsible for various administrative tasks, animal control, and parking enforcement. Volunteer personnel of the ECPD include sworn reserve officers that supplement regular officers, and non-sworn members of the Police Auxiliary (PAX) Team Program that provide assistance in other areas of ECPD service. The ECPD also operates the El Centro Police Athletic League (PAL), an athletic and educational organization for youth development. PAL is funded by donations from businesses, organizations, and individuals. Officers and staff members participating in PAL volunteer their time.

The ECPD station is located approximately 1.5 miles northeast of the project site at 150 North 11th Street. The PAL administrative center is located at 1100 North 4th Street. The City does not pay salaries for volunteers but ECPD supplies volunteers with equipment, uniforms, weapons, vehicles, and communication equipment. ECPD also assumes costs for training volunteers and maintaining acceptable training levels.

The Police Department is currently staffed by 52 sworn officers and 24 non-sworn support personnel, and has 20 patrol vehicles. At any given period throughout the day and night, the ECPD staffing goal is to have a minimum of five police personnel on duty, including four responding officers and one supervising sergeant or officer-in-charge at any given period throughout the day and night.

The ECPD does not maintain response time goals but tracks and reviews response times on an annual basis to determine the adequacy of their service and any possible alterations or improvements to their methods that would reduce response time. The current response time for crimes "in progress" dispatch is generally three to five minutes, the current response time for crimes "just occurred" dispatch is 10 to 11 minutes, and the current response time for crimes "past occurred" dispatch is 15 to 16 minutes.

Schools

The project site is within two public school districts: McCabe Union Elementary School District (MUESD) and Central Union High School District (CUHSD). MUESD serves kindergarten through 8th grade students residing in the areas surrounding the City's boundaries and some areas within the City boundaries. MUESD currently operates two kindergarten through 8th grade facilities with an enrollment of approximately 1,267 students (2012 to 2013 school year). CUHSD is comprised of three high schools: Central Union High School, Southwest High School, and Desert Oasis High School (a continuing education facility) serving approximately 4,052 students (2012 to 2013 school year). Southwest High School is located directly across I-8 from the project site.

Parks and Recreation

The City owns and maintains a series of parks for use by the general public. Parks are managed by the City Community Services Department. As published in the City General Plan and the

SAP, the City maintains a standard for provision of public parkland that calls for five acres per 1,000 City residents. As shown in Table 4.9-1, as of September 2015 there is currently a total of 103.11 acres of public parkland in the City.

Table 4.9-1 Parks and Recreational Facilities

Park	Acres	Address
Adams Park	9.33	Park between 4th & 7th
Bucklin Park	20	1350 S. 8th Street
Carlos Aguilar Park	4.75	1575 Pico Avenue
Countryside Park	2.0	100 Jack Rabbit Drive
Debbie Pittman Park	4.73	1997 Orange Avenue
Farmers Park	1.29	2300 18th Street
Frazier Field	3.55	1150 n. 6th Street
Gomez Park	2.66	901 Hope Street
Leeper Park	3.71	250 S. Lotus Avenue
Legacy Park	1.4	3900 Arthur Hennesey Ct
Lotus Park Basin	3.85	650 S. Lotus Avenue
McGee Park	5.31	375 S. 1st Street
Stark Field	11.44	831 S. 4th Street
Sunflower Park	13	350 N. Lotus Ave.
Swarthout Park	15.49	350 Euclid Ave.
Town Square	0.5	100 S. 7th Street
Total Park Acreage	**103.11**	

The City also has several parks that have been proposed, including Citrus Grove Park (1.5 to 1.64 acres), Fire Station Park (2.72 acres), Wildflower Park (3.62 acres) and Desert Village Park (3.5 acres).

The City's current population is approximately 43,856. Applying the City's parkland-to-population standard to the existing population; a parkland area of 219.28 acres would be required for the City to meet its demand. As this is more than the existing available parkland acreage of 103.11 acres, the City is currently in deficit of approximately 116.17 acres of parkland, not including the recently approved parks listed in the paragraph above.

4.9.2 Impact Significance Criteria

A project would result in a significant public services impact if it would:

- Generate demands for service that exceed the capacity of existing or planned water supply and infrastructure as identified by the City Water and Wastewater Master Plan Amendment;

- Exceed the City's capacity to collect and treat wastewater as identified by the City's Water and Wastewater Master Plan Amendment;