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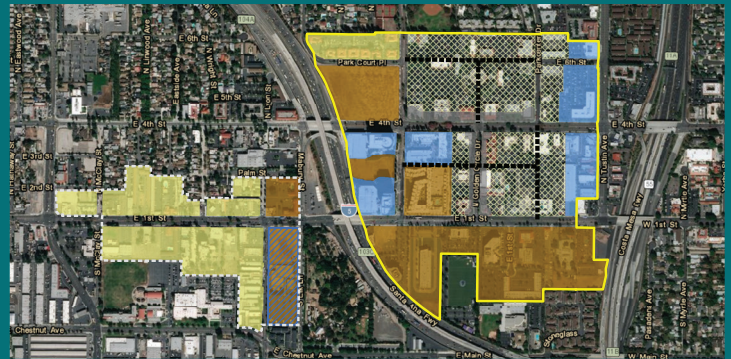
Environmental Impact Report

Metro East
Mixed-Use Overlay District Expansion
and Elan Development Projects

June 2018

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**METRO EAST MIXED-USE OVERLAY DISTRICT
EXPANSION AND ELAN DEVELOPMENT
PROJECTS SUBSEQUENT ENVIRONMENTAL
IMPACT REPORT**

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Acronyms and Abbreviations

µg/m ³	micrograms per cubic meter
AB 52	Assembly Bill 52
ACMs	asbestos containing materials
ADT	average daily traffic
AQMP	Air Quality Management Plan
Basin Plan	Water Quality Control Plan
BMP	Best Management Plans
BP	before present
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	Code of Regulations
CEQA	California Environmental Quality Act
City	City of Santa Ana
CMP	Congestion Management Program
CNEL	community noise equivalent level
CO	carbon monoxide
CO Protocol	Transportation Project-level Carbon Monoxide Protocol
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency's
CWA	Clean Water Act
DAMP	Drainage Area Master Plan
dB	decibels
dBA	A-weighted decibels
DC	District Center
DCV	design capture volumes
DMAs	Drainage Management Areas
DPM	diesel particulates

DTSC	Department of Toxic Substances Control
du/ac	dwelling units per acre
EIR	Environmental Impact Report
Elan Project	Lyon and First Street
EMFAC	EMission FACTors
EPA	U.S. Environmental Protection Agency
ESA	environmental site assessment
FAA	Federal Aviation Administration
FAR	floor area ratio
FTA	Federal Transit Administration
g/L	grams/liter
g/m ³	micrograms per cubic meter
GC	General Commercial
Gsf	gross square feet
HABS	Historic American Building Survey
HRA	Health Risk Assessment
HVAC	heating, ventilation, and air conditioning
I-	Interstate
ICU	intersection capacity utilization
IPCC	Intergovernmental Panel on Climate Change
LBP	lead based paint
LCF	low-carbon fuel standard
LID	low impact development
LIP	Local Implementation Plan
LOS	level of service
LSTs	localized significance thresholds
LUST	Leaking Underground Storage Tank
M-1	Light Industrial
MDA	Major Development Area
MEMU	Metro East Mixed Use
MEMU EIR	City of San Ana Metro East Mixed-Use Overlay Zone Environmental Impact Report

MTBE	methyl-tert butyl ether
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NB	northbound
NO	nitric oxide
NO ₂	nitrogen dioxide
NO _x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O	Open Space
OCFCD	Orange County Flood Control District
OCTA	Orange County Transportation Authority
OEHHA	Office of Environmental Health Hazard Assessment
OSHA	Occupational Safety and Health Administration
OZ-1	Metro East Mixed Use Overlay District
PAO	Professional and Administrative Offices
Pb	lead
Phase I ESA	Phase I Environmental Site Assessment Report
PM	particulate matter
PM 2.5	particulate matter less than or equal to 2.5 microns in diameter
PM10	particulate matter less than or equal to 10 microns in diameter
ppm	parts per million
PRC	Public Resources Code
Preserve	Preserve Orange County
PWQMP	Preliminary Water Quality Management Plan
RCP	Regional Comprehensive Plan
RCPG	Regional Comprehensive Plan and Guide
RCRA	Resource Conservation and Recovery Act
RMS	root mean square
ROG	reactive organic gas
RTP	Regional Transportation Plan

RWQCB	Regional Water Quality Control Board
Santa Ana Regional Board	Santa Ana Regional Water Quality Control Board
SARB	the Santa Ana River Basin
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCS	Sustainable Communities Strategy
SEIR	Subsequent EIR
sf	square feet
SO ₂	sulfur dioxide
SR-	State Route
SR-55	State Route 55
SRAs	source receptor areas
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board's
TAC	toxic air contaminant
TIA	Transportation Impact Analysis
TIS	Transportation Impact Analysis
TOG	total organic gases
TPH-g	total petroleum hydrocarbons – gasoline
UN	Urban Neighborhood
USTs	underground storage tanks
VOCs	volatile organic compounds
WQMP	Water Quality Management Plan
µin/s	microinch per second

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ES.1 Purpose of the Summary

This Subsequent Environmental Impact Report (SEIR) will be used to evaluate the impacts associated with the City of Santa Ana's (City's) proposed expansion of the Metro East Mixed-Use (MEMU) Overlay Zone, including the Elan Project. Use of a Subsequent EIR provides the City, as lead agency, with the opportunity to consider any new environmental impacts that could occur with implementation of the proposed project and project alternatives, and mitigation measures that can reduce project impacts to the extent possible or to below a level of significance.

This summary includes a brief description of the proposed project, California Environmental Quality Act (CEQA) requirements, project objectives, alternatives, and an impact summary table with mitigation measures.

CEQA Requirements

An SEIR is prepared when an EIR has been certified or a negative declaration adopted for a project and the lead agency determines, on the basis of substantial evidence, that one or more of the criteria listed under Section 15162 and 15163 of the State CEQA Guidelines are met. The City, as lead agency, has determined in accordance to California Code of Regulations, Title 14, Division 6, Chapter 3, Article 11 that an SEIR is the most appropriate environmental document due to the characterization of the proposed changes to the project that was previously approved with the certified Final Environmental Impact Report (EIR) for the MEMU Overlay Zone (SCH No. 2006031041) in 2007. This SEIR has been prepared pursuant to the requirements of CEQA. It discloses the environmental impacts associated with implementing the proposed project and includes mitigation measures that can reduce potential impacts to the extent possible or to below a level of significance.

ES.2 Project Location

The proposed MEMU Overlay Zone expansion area would add 33.52 acres or approximately 48 parcels to the project area. The additional project area extends west primarily along First Street, generally bound by the Santa Ana (I-5) Freeway to the east, Grand Avenue to the west, East Chestnut Avenue to the south, and Fourth Street to the north. The existing parcels are currently developed with a variety of commercial and residential land uses or are vacant, undeveloped, or abandoned. The properties affected have frontage primarily on First Street, while others are oriented toward local collectors or Grand Avenue.

The proposed Elan Project is located on an approximately 6.4-acre site at 1660 E. First Street fronting First Street between Lyon Avenue and Elk Lane, within the proposed MEMU Overlay Zone expansion area.

ES.3 Project Objectives

The overall objectives of the Overlay Zone are to encourage a more active commercial and residential community, provide an expanded economic base, maximize property sales tax revenues, improve the jobs/housing balance within the City, and provide for a range of housing options identified in the 2014 Housing Element. Expansion of this Overlay Zone would extend the same objectives into the new area.

ES.4 Project Description

The proposed project includes expansion of the boundaries of the MEMU Overlay Zone, modification of development standards, development of a mixed-use multi-family residential and commercial project, an amendment to the existing General Plan, and an amendment to the existing Zoning Code. Each of these is described further below.

Modifications to MEMU Boundaries

An overlay zone is generally defined as a zone or district created for the purpose of conserving natural resources or promoting certain types of development. It is imposed over existing zoning districts and contains provisions that are applicable in addition to those contained in the underlying zoning district. The overall objectives of the MEMU Overlay Zone are to encourage a more active commercial and residential community, provide an expanded economic base, maximize property sales tax revenues, improve the jobs/housing balance within the City, and provide for a range of housing options. Creation of the MEMU Overlay Zone was also envisioned to allow the City to consider subsequent actions consistent with these updates in the General Plan and Land Use designations.

The proposed MEMU Overlay Zone expansion would add an additional 33.52 acres or approximately 48 parcels to the project area. The additional project area is shown in Figure 2-2.

Development Capacity

The original (2007) MEMU Overlay Zone project included the following primary elements:

- A potential increase in City population of 11,102 residents.
- A potential increase in the number of available residences within City limits by 5,551 units.
- The potential development of 1,275,440 gross square feet (gsf) of commercial (retail and service) space, as well as 3,410,507 gsf of office space. This corresponds to a potential net increase of approximately 963,000 square feet (sf) of commercial space and 690,000 sf of office space.

No modifications to the MEMU Overlay Zone development capacity are proposed under the proposed project. Under the proposed project, the development capacity would remain the same; however, with expansion of the MEMU Overlay Zone boundaries, the developable area would be extended to include the expanded Overlay Zone area. The expansion of the MEMU Overlay district is expected to produce up to 1,888 residential units (3,776 residents) in the expansion area, a maximum of approximately 2,835,000 sf of building area, which includes 944,500 sf of non-

residential square footage. The proposed project would create additional housing development opportunities that are consistent with opportunity sites identified in the City's 2014–2021 Housing Element.

Modification to Land Use Districts

The MEMU expansion project includes updating the allowable land uses to create additional housing opportunities. The existing MEMU Overlay Zone allows development to occur in accordance with four separate district designations, as described below and shown on Figure 2-5 (Existing Overlay Zone Land Use Districts). The proposed addition to the MEMU area would apply the same district concepts, using only the Neighborhood Transitional and Active Urban districts. Also, the project proposes to change a portion of the Neighborhood Transitional District located in the northern portion of the existing MEMU Overlay Zone area between Cabrillo Park Drive and Park Center Drive to Village Center District. Figure 2-6 (Proposed Overlay Zone Land Use Districts) shows all of the proposed land use districts in the existing MEMU Overlay Zone area and expansion area.

Neighborhood Transitional District

The Neighborhood Transitional District is intended to continue to provide opportunities for development and act as a transition between the single-family residential to the north and the adjacent high-intensity Active Urban District. Designated for the lowest scale and the lowest intensity of uses in the Overlay Zone, this district limits development to residential, live/work, or office uses. These uses may combine office on the ground floor with residential above or in freestanding single-use buildings on the same site at between two and four stories in height. New development in this area would be designed to provide an appropriate interface with high levels of landscaping and design features that would minimize impacts on the adjacent single-family residential area to the north.

Active Urban

The Active Urban District is intended to continue to serve as the location for well-designed, high-rise, mixed-use developments in a highly urbanized environment that capitalizes on the exposure and access provided by two adjacent freeways, I-5 and the Costa Mesa (SR-55) Freeway, and two major arterials (First Street, Fourth Street, and Tustin Avenue), as well as its proximity to the Santa Ana Regional Transportation Center. Development in this district is envisioned to reflect signature architecture that reinforces the identity and character of Metro East as a vibrant urban village that serves as a regional employment and activity center. The Active Urban District would include major office, residential, commercial, hotel, and entertainment opportunities that are more intensive in scale and design than the adjacent Village Center. Developments in this district may combine office, commercial, and residential uses within one vertical mixed-use building with commercial on the ground floor and office or residential on the upper floors, or a mix of uses within freestanding buildings on the same site. Developments would be designed to showcase an amenity-enhanced environment that provides numerous open space opportunities within this urban environment for the enjoyment of residents, employees, and visitors, and to promote pedestrian connections between this district and the Village Center as well as Cabrillo Park located north of the Overlay Zone.

Village Center

The Village Center District is intended to continue to serve as the focal point and central gathering place within the Overlay Zone in well-designed, highly connected development sites and public spaces. This district would provide a high level of neighborhood identity and activity through its central location and its emphasis on creating a vibrant, attractive, and highly interconnected pedestrian environment. Opportunities would be provided for shopping, dining, recreation, entertainment, and services accessed by extensively landscaped, wide sidewalks that would allow free flow between jobs, housing, and commercial services, or opportunities for leisure walking within the Village Center. This district would provide commercial, office, and residential uses in the same building or on the same site in mid-rise buildings of between four and ten stories in settings that would provide open spaces, niches, and areas for gatherings and activities along streets, paseos, and interconnecting walkways that would link the Village Center to adjacent districts and nearby public parks north of the district.

Office

The Office District contains existing low- to high-rise office development along Tustin Avenue and adjacent to I-5. These properties were in place prior to establishment of the Overlay Zone and will retain their exclusive office zoning in order to promote and maintain a healthy balance between office, commercial, and residential land uses within the Overlay Zone.

Modification to MEMU Development Standards

The MEMU expansion project includes updating the development standards within the existing document. The current document allows residential land uses in the Neighborhood Transitional and Active Urban land use districts. Multiple-family residential and live/work developments are prohibited in the Office District, while live/work is the only residential land use permitted in the Village Center District. The project would update the MEMU document to remove these restrictions in order to allow residential developments in each of the four land use districts.

The existing MEMU document also contains form-based design standards and design guidelines for new developments seeking to activate and build to the Metro East Mixed Use Overlay District (OZ-1) standards. The MEMU expansion project will undertake a comprehensive review of these development standards and design guidelines to identify components that require updating. Moreover, the project would update one or more of the land use districts, or create a fifth land use district, to facilitate the expansion of the OZ-1 designation in the westward MEMU expansion area along the First Street corridor. These updates are intended to facilitate infill development or redevelopment opportunities in the expansion area on First Street and to ensure that such developments are compatible with the surrounding land uses and existing development patterns. These updates would also incorporate changes to development, market demands, housing needs, and construction technology in the post–Great Recession market.

The draft MEMU Overlay Zone modifications are included in totality in Appendix A. Table ES-1 provides a summary of the proposed changes.

Table ES-1. Proposed Modifications to MEMU Overlay Zone

Current MEMU Standards	Proposed MEMU Standards
<p>Three stories maximum in Neighborhood Transitional District.</p>	<p>Four stories maximum in Neighborhood Transitional District.</p>
<p>Private/common open space required at 100 square feet per unit (sf/unit) in the Neighborhood Transitional, Village Center, and Active Urban districts.</p>	<p>Private/common open space required at 90 sf/unit in the Neighborhood Transitional, Village Center, and Active Urban districts.</p>
<p>Multiple-family residential uses are prohibited within the Village Center District.</p>	<p>Multiple-family residential uses are permitted by right within the Village Center District.</p>
<p>Churches are not currently identified as an allowable non-residential use in any district.</p>	<p>Churches uses will be identified as an allowable non-residential use in all districts, subject to a Conditional Use Permit.</p>
<p>Front building setbacks are identified for each district.</p>	<p>Clarification of front building setback distance from a public or private street.</p>
<p>Parking requirements for stand-alone residential uses within the Neighborhood Transitional District are as required at 2.25 spaces per residential unit, inclusive of guest parking.</p>	<p>Parking requirements for stand-alone residential uses within the Neighborhood Transitional District are as required at 2.0 spaces per residential unit, inclusive of guest parking.</p>
<p>Parking requirements within the Village Center District for mixed-use developments with less than 10 percent of the gross floor area devoted to a commercial activity are required to provide a minimum of 2.0 spaces per residential or live/work unit inclusive of guest parking and any nonresidential uses.</p>	<p>Parking requirements for mixed-use developments with less than 10 percent of the gross floor area devoted to a commercial activity are required to provide a minimum of 1.8 spaces per residential or live/work unit inclusive of guest parking and any nonresidential uses.</p>
<p>Parking requirements within the Active Urban District for mixed-use developments with less than 10 percent of the gross floor area devoted to a commercial activity are required to provide a minimum of 2.0 spaces per residential or live/work unit inclusive of guest parking and any nonresidential uses.</p>	<p>Parking requirements for mixed-use developments with less than 10 percent of the gross floor area devoted to a commercial activity are required to provide a minimum of 1.8 spaces per residential or live/work unit inclusive of guest parking and any nonresidential uses.*</p>
<p>Parking requirements within the Office District for office or other non-residential uses are as required by Division 3, of Article 15, Off-Street Parking Requirements, SAMC.</p>	<p>Parking requirements within the Office District for office or other non-residential uses will be 1 space/400 sf.</p>
<p>*This modification is still under consideration by the City.</p>	

Elan Mixed-Use Development

The proposed project includes redevelopment of the old Elks Club site into two mixed-use (residential and commercial) structures: one seven-story “wrap” building and one five-story building with two levels of underground parking. A site plan is shown in Figure 2-7, and architectural elevations are shown in Figures 2-8a through 2-8c.

The project includes 603 residential units and approximately 8,500 sf of commercial uses at the ground floor, and it would include pools, spas, courtyards, public open space, fitness rooms, and other amenities for the residents. The project would result in a residential density of 93.75 du/ac, and the proposed development would be within the capacity established by the MEMU Overlay Zone. Underground parking would include 1,209 parking spaces with two access points from Elk Lane and two access points from Lyon Street. Construction would occur generally in a single phase, with completion of one building proceeding the other by a few months to facilitate staging.

Required Discretionary Actions

General Plan Amendment

The General Plan will be amended concurrent with adoption of the expanded Overlay Zone to replace the existing General Plan land use designations with the MEMU land use designation. A General Plan amendment is needed to accomplish two primary objectives of the Overlay Zone: (1) to facilitate mixed-use development within the expanded area, and (2) to increase the development intensity within the expanded area as permitted within the Overlay Zone. Specifically, the Land Use Element Policy Plan, which includes the Land Use Map and Development Intensity Standards, will be amended to include the MEMU designation within the expanded area. The General Plan land use designations for the properties located in the expansion area will be changed to UN (Urban Neighborhood) and DC (District Center), the latter being more appropriate for properties located away from existing single-family land uses and closer to I-5.

In addition, a couple of properties along the western boundary within the existing MEMU boundary are proposed for a General Plan Amendment. These include the area in the northwest bounded by Mabury Street, East Sixth Street, East Park Court Place, and North Cabrillo Drive currently designated as District Center and the area located between I-5, Cabrillo Drive, East First Street, and East Fourth Street. Both of these areas are proposed to change their designations to Urban Neighborhood and District Center, respectively.

Additionally, this SEIR is being used to correct the General Plan land use designations for three residential properties outside the expansion area boundaries that are currently designated as General Commercial. These include two residences at the end of Linwood Avenue and a residence outside the expansion area's northern boundary at Wright Street. All three of these properties are proposed to change to Low Density Residential (LR-7).

Figure 2-9 shows the proposed changes to the General Plan land use designations. The District Center land use designation has been described previously; the Urban Neighborhood land use designation is described as follows:

- **Urban Neighborhood (UN):** applies to primarily residential areas with pedestrian-oriented commercial uses, schools, and small parks. The Urban Neighborhood allows for a mix of residential uses and housing types, such as mid- to low-rise multiple facility, townhouses, and single-family dwellings, with some opportunities for live/work, neighborhood-serving retail and service, public spaces and use, and other amenities. Either vertical or horizontal integration of uses is permitted based on zoning standards, with an emphasis on typing together the uses with pedestrian linkages and street frontages. Street connectivity is desirable, allowing for a high degree of walkability, transit options, and other forms of transportation, including pedestrian and bicycle travel. The intensity standard for the Urban Neighborhood ranges from a floor area

ratio (FAR) of 0.5 to 3.0, with residential density based on a combination of FAR and zoning development standards.

Zone Change

The Zoning Code and Zoning Map will be amended concurrent with the adoption of the expanded Overlay Zone to include the MEMU Overlay Zone to be offered in addition to the existing zoning for the expanded area. The MEMU expansion project proposes to apply the OZ-1 designation to the targeted properties along the First Street corridor until Grand Avenue. Changing the underlying zoning district designations of these properties is not proposed at this time. The extension of the OZ-1 designation west along First Street is intended to facilitate additional infill housing and mixed-use development opportunities, as referenced in the City's 2014–2021 Housing Element. Any issue not specifically covered in the Overlay Zone shall be subject to the provisions of the underlying zoning district specified in Chapter 41 of the Santa Ana Municipal Code. Interpretations may be made by the applicable review authority if not specifically covered in the City's existing regulations. As proposed, property owners shall have the option to develop to the provisions of the Overlay Zone at their discretion. They may also choose to develop to the existing underlying zone.

ES.5 Project Impacts and Mitigation Measures

Summary of Project Impacts

The proposed project impacts are summarized in Table ES-2 (presented at the end of this summary). Potential environmental impacts have been classified in the following categories:

- **Less-Than-Significant (LTS)**—Results in no substantial adverse change to existing environmental conditions either with or without the implementation of mitigation measures.
- **Potentially Significant (PS)**—Constitutes a substantial adverse change to existing environmental conditions that can be mitigated to less-than-significant levels by implementation of feasible mitigation measures or by the selection of an environmentally superior project alternative.
- **Significant and Unavoidable (SU)**—Constitutes a substantial adverse change to existing environmental conditions that cannot be fully mitigated by implementation of all feasible mitigation measures or by the selection of an environmentally superior project alternative.

For potentially significant impacts, mitigation measures are identified, where feasible, to reduce the impact on environmental resources to a less-than-significant level. Where applicable, mitigation measures from the 2007 Final MEMU EIR were carried forward into this SEIR, and, for some impacts, new mitigation measures were developed. Mitigation measures carried forward from the 2007 Final MEMU EIR maintained their original numbering and naming convention from the MEMU EIR and begin with "MM-OZ" in this SEIR. Refer to Chapter 4, *Environmental Analysis*, for a detailed discussion of proposed project impacts and detailed descriptions of the mitigation measures.

Significant and Unavoidable Impacts

State CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects of a project, including those that can be mitigated but not reduced to a level of

insignificance. While the City has evaluated a range of potential mitigation measures to reduce significant project impacts—and will implement all feasible mitigation measures—construction and operation of the MEMU Overlay Zone would result in the following significant and unavoidable impacts:

Air Quality

- Short-term construction impacts resulting from peak daily emissions of volatile organic compounds (VOC) and nitrogen oxides (NO_x).
- Operational impacts resulting from peak daily emissions of particulate matter less than 10 microns in diameter (PM₁₀), carbon monoxide (CO), VOC, and NO_x.
- A cumulatively considerable net increase of criteria pollutants for which the proposed project region is in nonattainment under an applicable federal or state ambient air quality standard resulting from construction and operation.

Noise

- Short-term construction impacts resulting from groundborne vibration or groundborne noise levels.
- Operational impacts resulting from an increase in ambient noise levels due to increased vehicular trips.

Transportation/Traffic

- Operational impacts resulting from an exceedance of the applicable level of service (LOS) criteria for vehicle trips.
- Operational impacts resulting from an exceedance of an applicable Congestion Management Program (CMP) level of service standard.

The proposed project would be consistent with the prior findings, and significant and unavoidable environmental impacts disclosed in the MEMU EIR would remain for air quality, noise, and transportation/traffic.

The impact analysis presented in Chapter 4 has identified that the proposed project would result in the following impact that is new or substantially more severe than what was identified in the Final EIR certified in 2007:

Cultural

- Development of the Elan Project would result in a substantial adverse change to an eligible historical resource.

Because the proposed Elan Project would demolish the Santa Ana Elks Lodge, it would result in a substantial adverse change to an eligible historical resource. Mitigation measures **MM-CUL-2** through **MM-CUL-4** would reduce impacts, but not to a less-than-significant level.

All other physical, project-specific environmental impacts (project-specific and cumulative) are either less than significant or can be mitigated to a less-than-significant level. Cumulative impacts are discussed in Chapter 5.

ES.6 Alternatives

The MEMU EIR examined the following three alternatives:

- **Alternative 1—No Project/Reasonably Foreseeable Development (Continuation of Existing General Plan):** Under this alternative, development in the project area would occur under the existing General Plan and zoning designations.
- **Alternative 2—Higher Intensity Commercial Project:** This alternative would permit a higher intensity of commercial development and a corresponding decrease in residential density for projects proposed within the Overlay Zone relative to the proposed overlay plan. In general, this alternative would reduce the number of residences and increase employment opportunities as a result of more commercial/office uses in the area.
- **Alternative 3—Reduced Project:** This alternative would allow development at a maximum FAR of 1.25 for each developable parcel within the Overlay Zone without a consideration of the residential density (dwelling units per acre [du/ac]). The anticipated mix of commercial, office, and residential land uses would be identical to the proposed project; however, a maximum FAR would be established that would limit development potential. Under this alternative, there would be no differentiation between different areas (districts) of the Overlay Zone.

Each of these alternatives was dismissed upon approval of the 2007 Final EIR. These alternatives identified and analyzed are applicable to the modification of the project in this SEIR, and no additional alternatives were considered for the modification of the MEMU Overlay Zone.

In addition, the following alternatives are considered in this SEIR to attempt to reduce significant cultural resources impacts resulting from the Elan Project:

- **Alternative E1: No Project/No Development:** Under the No Project/No Development Alternative, development of the Elan Project would not occur. The existing site would remain in its current state—the northern one-third of the property would remain vacant and undeveloped, and the Elks Lodge building would remain intact on site.
- **Alternative E2: Alternative Site:** This alternative would involve development of the Elan Project on an alternative site within the MEMU Overlay Zone expansion area.
- **Alternative E3: Reduced Project/Reduced Site:** Because the Elks Lodge building and parking lot occupies approximately two-thirds of the site, this alternative would involve development of the northern one-third of the site (approximately 2 acres), thereby avoiding demolition of the Elks Lodge building. Therefore, this alternative would essentially reduce the project by two-thirds, yielding a potential development of approximately 200 residential units and approximately 2,800 sf of commercial uses on the ground floor.

ES.7 Potential Areas of Controversy/Issues to Be Resolved

Based on the discussion in Section ES.5 above, the proposed project would be consistent with the prior findings, and significant and unavoidable environmental impacts disclosed in the MEMU EIR would remain for air quality, noise, and transportation/traffic. However, the impact analysis presented in Chapter 4, *Environmental Analysis*, has identified that the proposed project would

result in new or substantially more severe impacts than those identified in the Final EIR certified in 2007. Therefore, potential areas of controversy/issues to be resolve include the following:

- Development of the Elan Project would result in a substantial adverse change to a historical resource.

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
Air Quality			
Impact 4.1-1: Construction of the proposed project could violate an air quality standard or contribute to an existing or projected air quality violation.	PS	<p>MM-AQ-1: All applicants proposing development of projects within the MEMU Overlay Zone and expansion area shall require their contractors, as a condition of contract, to further reduce construction-related exhaust emissions by ensuring that all off-road equipment greater than 50 horsepower (hp) and operating for more than 20 total hours over the entire duration of construction activities shall operate on an EPA-approved Tier 4 or newer engine. Exemptions can be made for specialized equipment where Tier 4 engines are not commercially available within 200 miles of the MEMEU Overlay Zone and expansion area. The construction contract must identify these pieces of equipment, document their unavailability, and ensure that they operate on no less than an EPA-approved Tier 3 engine.</p> <p>MM-AQ-2: All applicants proposing development of projects within the MEMU Overlay Zone and expansion area shall require their contractors, as a condition of contract, to use diesel trucks that have 2010 model year or newer engines. In the event that 2010 model year or newer diesel trucks cannot be obtained, the contractor must provide documentation to the City showing that a good faith effort to locate such engines was conducted.</p> <p>MM-AQ-3: All applicants proposing development of projects within the MEMU Overlay Zone and expansion area shall require their contractors, as a condition of contract, to reduce construction-related fugitive VOC emissions by ensuring that low-VOC coatings that have a VOC content of 10 grams/liter (g/L) or less are used during construction. The project applicant will submit evidence of the use of low-VOC coatings to SCAQMD prior to the start of construction.</p>	SU

¹ Original mitigation measures from the 2007 Final MEMU EIR carried forward into this SEIR maintained their original numbering and naming convention and begin with “MM-OZ.”

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<p>MM-OZ 4.2-2: The developer shall require by contract specifications that all diesel-powered equipment used would be retrofitted with after-treatment products (e.g., engine catalysts and other technologies available at the time construction commences) when construction activities commence. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.</p> <p>MM-OZ 4.2-3: The developer shall require by contract specifications that all heavy-duty diesel-powered equipment operating and refueling at the project site would use low-NOx diesel fuel to the extent that it is readily available and cost effective (up to 125 percent of the cost of California Air Resources Board diesel) in the South Coast Air Basin at the time construction activities commence. This requirement shall not apply to diesel-powered trucks traveling to and from the project site. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.</p> <p>MM-OZ 4.2-4: The developer shall require by contract specifications that alternative fuel construction equipment construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline) would be utilized to the extent feasible in the South Coast Air Basin at the time construction activities commence. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.</p> <p>MM-OZ 4.2-5: The developer shall require by contract specifications that construction equipment engines will be maintained in good condition and in proper tune per manufacturer’s specification for the duration of construction. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.</p> <p>MM-OZ 4.2-6: The developer shall require by contract specifications that construction-related equipment, including heavy-duty</p>	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<p>equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.</p> <p>MM-OZ 4.2-7: The developer shall require by contract specifications that construction operations rely on the electricity infrastructure surrounding the construction site rather than electrical generators powered by internal combustion engines to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.</p> <p>MM-OZ 4.2-8: The developer shall require by contract specifications that construction parking be configured to minimize traffic interference during the construction period and, therefore, reduce idling of traffic. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.</p> <p>MM-OZ 4.2-9: The developer shall require by contract specifications that temporary traffic controls are provided, such as a flag person, during all phases of construction to maintain smooth traffic flow. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.</p> <p>MM-OZ 4.2-10: The developer shall require by contract specifications that construction activities that affect traffic flow on the arterial system be scheduled to off-peak hours (10:00 A.M. to 4:00 P.M.). Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.</p> <p>MM-OZ 4.2-11: The developer shall require by contract specifications that dedicated on-site and off-site left-turn lanes on truck hauling routes be</p>	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<p>utilized for movement of construction trucks and equipment on site and off site to the extent feasible during construction activities. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.</p> <p>MM-OZ 4.2-12: Upon issuance of building or grading permits, whichever is issued earliest, notification shall be mailed to owners and occupants of all developed land uses within ¼ mile of the Overlay Zone and the individual projects within the Overlay Zone providing a schedule for major construction activities that will occur through the duration of the construction period. In addition, the notification will include the identification and contact number for a community liaison and designated construction manager that would be available on site to monitor construction activities. The construction manager shall be responsible for complying with all project requirements related to PM10 generation. The construction manager will be located at the on-site construction office during construction hours for the duration of all construction activities. Contract information for the community liaison and construction manager will be located at the construction office, City Hall, the police department, and a sign on site.</p> <p>MM-OZ 4.2-13: As required by South Coast Air Quality Management District Rule 403–Fugitive Dust, all construction activities that are capable of generating fugitive dust are required to implement dust control measures during each phase of project development to reduce the amount of particulate matter entrained in the ambient air. These measures include:</p> <ul style="list-style-type: none"> • Limiting the amount of area disturbed during site grading to 10 acres per day • Application of soil stabilizers to inactive construction areas • Quick replacement of ground cover in disturbed areas • Watering of exposed surfaces three times daily • Watering of all unpaved haul roads three times daily 	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<ul style="list-style-type: none"> • Covering all stock piles with tarp • Reduction of vehicle speed on unpaved roads • Post signs on site, limiting traffic to 15 miles per hour or less • Sweep streets adjacent to the project site at the end of the day if visible soil material is carried over to adjacent roads • Cover or have water applied to the exposed surface of all trucks hauling dirt, sand, soil, or other loose materials prior to leaving the site to prevent dust from impacting the surrounding areas • Install wheel washers where vehicles enter and exit unpaved roads onto paved roads to wash off trucks and any equipment leaving the site each trip <p>MM-OZ 4.2-14: The developer shall require by contract specifications that the architectural coating (paint and primer) products used would have a VOC rating of 100 grams per liter or less. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed and approved by the City of Santa Ana Planning and Building Agency staff.</p> <p>MM-OZ 4.2-15: The developer shall require by contract specifications that materials that do not require painting be used during construction to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed and approved by the City of Santa Ana Planning and Building Agency staff.</p> <p>MM-OZ 4.2-16: The developer shall require by contract specifications that pre-painted construction materials be used to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed and approved by the City of Santa Ana Planning and Building Agency staff.</p>	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
Impact 4.1-2: Operation of the proposed project would violate an air quality standard or contribute to an existing or projected air quality violation.	PS	No feasible mitigation is available.	SU
Impact 4.1-3: The proposed project would result in a cumulatively considerable increase of criteria pollutant for which the project region is non-attainment.	PS	MM-AQ-1 through MM-AQ-3 , as well as MM-OZ 4.2-2 through MM-OZ 4.2-16 would apply to this impact.	SU
Impact 4.1-4: The proposed project would not expose sensitive receptors to substantial pollutant concentrations.	LTS	No mitigation is required.	LTS
Impact 4.1-E1: Construction of the Elan Project could violate an air quality standard or contribute to an existing or projected air quality violation.	PS	MM-AQ-3 as well as MM-OZ 4.2-14 through MM-OZ 4.2-16 would apply to this impact.	LTS
Impact 4.1-E2: Operation of the Elan Project would not violate an air quality standard or contribute to an existing or projected air quality violation.	LTS	No mitigation measures are required.	LTS
Impact 4.1-E3: The proposed Elan Project would not result in a cumulatively considerable increase of criteria pollutant for which the project region is non-attainment.	PS	MM-AQ-3 would apply to this impact.	LTS
Impact 4.1-E4: The proposed Elan Project would not expose sensitive receptors to substantial pollutant concentrations.	LTS	No mitigation measures are required.	LTS

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
Cultural Resources			
Impact 4.2-1. Redevelopment of sites within the MEMU Overlay Zone expansion area could result in the demolition or major modification of historically aged structures that have not yet been evaluated to determine their significance as defined by Section 15064.5 of the State CEQA Guidelines, which would be considered a significant impact.	PS	MM-OZ 4.4-1: The City of Santa Ana shall require as part of the environmental review of development projects within the Overlay Zone Expansion Area that impacts to potentially significant historical resources be considered. If any existing structures on a proposed development site are at or approaching 50 or more years of age at the time of CEQA review, the City shall retain the services of a qualified architectural historian to conduct a field survey of the structure in question and technical study to determine its potential historical potential significance and develop mitigation measures as necessary.	LTS
Impact 4.2-2. Implementation of the proposed project has the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines, and this would be considered a significant impact.	PS	MM-OZ 4.4-2: Due to the lack of cultural resource studies for the Overlay Zone Expansion Area, and in order to avoid damaging any unidentified cultural resources, a qualified archaeologist would be retained to monitor any significant ground-disturbing activities in undeveloped areas within the Expansion Area, and any deep (10" or deeper) ground-disturbing activities in all areas of the Expansion Area. MM-OZ 4.4-3: In the event that archaeological resources are unearthed during project subsurface activities, all earth-disturbing work within a 100-meter radius must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find. After the find has been appropriately mitigated, work in the area may resume.	LTS
Impact 4.2-3. Implementation of the proposed project has the potential to directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature, and this would be considered a significant impact.	PS	MM-CUL-1: A qualified paleontologist shall review the paleontological records search prepared by the Vertebrate Paleontology Section of the Los Angeles County Natural History Museum for the Elan Project. For proposed projects in the MEMU Overlay Zone expansion area, a paleontological records search from the Los Angeles County Natural History Museum shall be required if a proposed project would involve grading or excavation that could disturb older Quaternary sediments with high paleontological resource sensitivity below the uppermost few feet of younger Quaternary surface sediments. For any such project within the MEMU Overlay Zone expansion area, a qualified paleontologist shall	LTS

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<p>review the paleontological records search. To ensure recovery of fossil remains before they are lost or destroyed, the following additional measures shall be implemented for the Elan Project and for any projects within the MEMU Overlay Zone Expansion Area that have potential to disturb sediments with high paleontological sensitivity below the uppermost few feet of surface sediments:</p> <ul style="list-style-type: none"> • All construction activities with potential to disturb sediments below the uppermost few feet of surface sediments shall be monitored by an Orange County-certified professional paleontologist (qualified paleontologist). • A qualified paleontologist shall attend preconstruction meetings to consult with the grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues. All construction personnel shall receive training provided by a qualified paleontologist experienced in teaching non-specialists to ensure that they can recognize fossil materials in the event any are discovered during construction. • A qualified paleontologist shall conduct onsite paleontological monitoring of all grading and excavation activities with potential to disturb paleontologically sensitive sediments below the uppermost few feet of surface sediments. Monitoring shall include inspection of exposed surfaces and microscopic examination of matrix to determine if fossils are present. The monitor shall have authority to divert grading away from exposed fossils temporarily in order to recover the fossil specimens. Cooperation and assistance from onsite personnel will greatly assist timely resumption of work in the area of the fossil discovery. • If fossil remains are discovered during project-related construction, activities in the vicinity of the find shall stop immediately until a qualified professional paleontologist can assess the nature and importance of the find and a qualified professional paleontologist can recommend appropriate treatment. Treatment may include 	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<p>preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and may also include preparation of a report for publication describing the finds. The City shall be responsible for ensuring that recommendations regarding treatment and reporting are implemented. The work shall be conducted in conformance with the Orange County guidelines as defined in Eisentraut and Cooper (2002) and meet the requirements for recovery, salvage, laboratory preparation, preparation to the point of taxonomic identification, transferal, and preparation and submittal.</p> <ul style="list-style-type: none"> • Fossil remains collected during the monitoring and salvage portion of the program shall be cleaned, repaired, sorted, and catalogued. • Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall be deposited (as a donation) in a scientific institution with permanent paleontological collections. • A final data recovery report shall be completed that outlines the results of the monitoring program. This report will include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils. 	
Impact 4.2-4. Construction activities under the proposed project could result in the disturbance of human remain interred outside of formal cemeteries.	PS	MM-OZ 4.4-5: If human remains are unearthed, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC will then contact the most likely descendant of the deceased Native American, who will then serve as consultant on how to proceed with the remains.	LTS
Impact 4.2-E1. Development of the Elan Project would result in a substantial adverse change to a historical resource.	PS	MM-CUL-2: Prior to demolition the project applicant will commission the preparation of complete archival-quality photo documentation of the architecturally significant Santa Ana Elks Lodge along with a historical profile to accompany the photo documentation. The documentation will be prepared in accordance with Historic American Building Survey (HABS) Level 2 standards as outlined in the	SU

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<p>Historic American Building Survey Guidelines for Preparing Written Historical Descriptive Data. The photographic element of the documentation will consist of 20–30 archival quality large-format black-and-white photographs of the property’s character-defining exterior and interior architectural features. If available, original architectural plans will be reproduced to archival HABS standards and will be included in the documentation package with photographs and written data. Three copies of the documentation package will be produced. One set will include original photo negatives and one set will be placed in publicly accessible archive or history collection.</p> <p>MM-CUL-3: Prior to demolition the applicant will work with the City of Santa Ana to arrange for representatives of the Elks, the Santa Ana Historical Preservation Society, Preserve Orange County, the Santa Ana Planning and Building Agency, other potentially interested parties, and members of the community to identify and undertake salvage the of Santa Ana Elks Lodge’s exterior and interior architectural features. The applicant will also consider salvaging and reusing architectural features identified as significant in the historical resource evaluation or identified as significant by interested parties that those interested parties are not able to salvage. Such significant features not salvaged by interested parties would be considered for reuse in the design and construction of a community room or other publically accessible interior or exterior space that will be incorporated into the design of the project.</p> <p>MM-CUL-4: The applicant will commission an interpretative exhibit that communicates the Santa Ana Elks’ significance as a noteworthy local expression of the important role that fraternal orders have played in American history. The exhibit will include a concise narrative explanation along with visual graphics such as historical photographs, and it will potentially make use of artifacts associated with the organization, such as regalia and other objects from the Santa Ana Elks Lodge, copies of important organization documents, or Elks-related personal items that members of the organization might be willing to donate. Before the certificate of occupancy is issued, the interpretative exhibit will be installed at a location on the project</p>	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		site accessible to the general public, potentially in a community room or other publically accessible interior or exterior space to be incorporated into the design of the project.	
Impact 4.2-E2. Implementation of the Elan Project has the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines, and this would be considered a significant impact.	PS	<p>MM-OZ 4.4-2: Due to the lack of cultural resource studies for the Overlay Zone Expansion Area, and in order to avoid damaging any unidentified cultural resources, a qualified archaeologist would be retained to monitor any significant ground-disturbing activities in undeveloped areas within the Expansion Area, and any deep (10" or deeper) ground-disturbing activities in all areas of the Expansion Area.</p> <p>MM-OZ 4.4-3: In the event that archaeological resources are unearthed during project subsurface activities, all earth-disturbing work within a 100-meter radius must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find. After the find has been appropriately mitigated, work in the area may resume.</p>	LTS
Impact 4.2-E3. Implementation of the Elan Project has the potential to directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature, and this would be considered a significant impact.	PS	MM-CUL-1 would apply to this impact.	LTS
Impact 4.2-E4. Construction of the Elan Project could result in the disturbance of human remains interred outside of formal cemeteries.	PS	MM-OZ 4.4-5 would apply to this impact.	LTS
Greenhouse Gas Emissions			
Impact 4.3-1: The proposed project could generate GHG emissions during construction and operations that may have a significant impact on the environment.	SU	MM-OZ 4.2-2 through MM-OZ 4.2-16 from the MEMU EIR and newly developed mitigation measure MM-AQ-2 as well as MM-GHG-1 through MM-GHG-6 .	SU

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<p>MM-GHG-1: Bicycle Infrastructure Improvements The following improvements should be implemented to encourage cycling within the planning area:</p> <ul style="list-style-type: none"> • Projects should be within at least 0.5 mile of an existing/planned Class I or Class II bike lane and include a network that provides connection to existing off-site facilities. Bicycle routes should also connect to all streets contiguous with the project site; the route should have minimum conflicts with automobile parking and circulation facilities. All streets internal to the project wider than 75 feet should have Class II bicycle lanes on both sides. • Bike parking should be provided at nonresidential projects (one bike rack space per 20 vehicle/employee parking spaces) and multi-unit residential projects (one long-term bicycle parking space for each unit without a garage). Long-term facilities should be provided at multi-unit residential developments and consist of a bicycle locker, locked room with standard racks, or a standard rack location that is staffed or monitored. • Non-residential projects should provide “end-of-trip” facilities, including showers, lockers, and changing spaces. • Bike-share infrastructure installation. <p>MM-GHG-2: Energy Efficiency Improvements The following improvements will be implemented, when feasible, to achieve more energy-efficient operations within the planning area:</p> <ul style="list-style-type: none"> • Projects should exceed Title 24 requirements by at least 20 percent. • Projects will, to the extent feasible, incorporate on-site renewable energy systems, including solar, wind, geothermal, low-impact hydro, and biomass and bio-gas strategies. • Projects will incorporate water and energy saving measures into the project design, including, but not limited to, the following: <ul style="list-style-type: none"> ○ Installation of low-water-use appliances, ○ Use of only natural gas or electric stoves, 	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<ul style="list-style-type: none"> ○ Installation of EnergyStar-labeled roof materials, ○ Installation of highly reflective cool roofing materials, ○ Installation of electrical outlets at exterior areas, ○ Use of energy-efficient appliances (e.g., EnergyStar), ○ Installation of shading mechanisms for windows, patios, and walkways, and ○ Installation of programmable thermostats. <ul style="list-style-type: none"> ● Projects will “weatherize” any existing structures to achieve energy savings. Weatherization strategies can include sealing air ducts, insulating, glazing windows, and tuning up or replacing air-conditioning and heating equipment. <p>MM-GHG-3: Streetlight Replacements Where feasible, SCE-owned streetlights within the planning area will be purchased by the City, and the high-pressure sodium fixtures will be replaced with LED fixtures. Those streetlights within the planning area that are currently owned by the City will also be replaced with LED fixtures.</p> <p>MM-GHG-4: Rainwater Harvesting Where feasible and applicable, projects within the planning area will incorporate rain barrels and rainwater re-use practices into project design.</p> <p>MM-GHG-5: Drought-resistant Landscaping The following measures should be implemented to reduce water use and electricity associated with water-intensive plants:</p> <ul style="list-style-type: none"> ● Drought-resistant native plants, as well as plants with low emissions and high carbon sequestration potential, should substitute landscaping with turf grass and other water-intensive vegetation. ● Vegetable gardens, bunch grass, and low-water landscaping should be encouraged for development within the planning area. <p>MM-GHG-6: Sidewalk and Pedestrian Infrastructure Improvements The following measures would be implemented by future development</p>	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		projects in the MEMU Overlay Zone to the extent practicable to improve pedestrian safety and encourage walking to and from the project area: <ul style="list-style-type: none"> • Projects shall provide a pedestrian access network that links all internal uses to all existing/planned external streets and pedestrian facilities contiguous with the project site, where applicable. The route connecting internal and external networks should have minimal conflict with parking and circulation facilities. • All internal and adjacent sidewalks associated with a project should be a minimum of 5 feet wide, with vertical curbs, where applicable. • Where feasible, pedestrian barriers should be minimized using grade separation, wider sidewalks, and traffic calming. In addition, physical barriers such as walls, landscaping, and slopes between facilities that impede pedestrian movement should be avoided. 	
Impact 4.3-2: The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.	PS	Mitigation measures MM-GHG-1 through MM-GHG-6 would apply.	LTS
Impact 4.3-E1: The proposed project would not generate GHG emissions during construction and operations that would have a significant impact on the environment.	LTS	No mitigation is required.	LTS
Impact 4.3-E2: The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.	LTS	No mitigation is required.	LTS

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
Hazards and Hazardous Materials			
Impact 4.4-1. Implementation of the proposed project would not result in a significant hazard to the public or the environment through future development's routine transport, use, or disposal of hazardous materials. However, it could result in exposure of future residents to diesel exhaust emissions, which could pose a significant hazard.	LTS	No mitigation is required.	LTS
Impact 4.4-2. Construction activities associated with implementation of the proposed project could result in the release of hazardous materials to the environment through reasonably foreseeable upset and accident conditions.	PS	<p>MM-OZ 4.6-2: Prior to the issuance of grading permits on any project site, the developer(s) shall:</p> <ul style="list-style-type: none"> • Investigate the project site to determine whether it or immediately adjacent areas have a record of hazardous materials contamination via the preparation of a preliminary environmental site assessment (ESA), which shall be submitted to the City for review. If contamination is found, the report shall characterize the site according to the nature and extent of contamination that is present before development activities proceed at that site. • If contamination is determined to be onsite, the City, in accordance with appropriate regulatory agencies, shall determine the need for further investigation and/or remediation of the soils conditions on the contaminated site. If further investigation or remediation is required, it shall be the responsibility of the site developer(s) to complete such investigation and/or remediation prior to construction of the project. • If remediation is required as identified by the local oversight agency, it shall be accomplished in a manner that reduces risk to below applicable standards and shall be completed prior to issuance of any occupancy permits. <p>MM-OZ 4.6-3: In the event that previously unknown or unidentified soil and/or groundwater contamination that could be present a threat to</p>	LTS

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		human health or the environment is encountered during construction of the proposed project, construction activities in the immediate vicinity of the contamination shall cease immediately. If contamination is encountered, A Risk Management Plan shall be prepared and implemented that (1) identifies the contaminants of concern and the potential risk each contaminant would pose to human health and the environment during construction and post-development and (2) describes measures to be taken to protect workers, and the public from exposure to potential site hazards. Such measures could include a range of options, including, but not limited to, physical site controls during construction, remediation, long-term monitoring, post-development maintenance or access limitations, or some combination thereof. Depending on the nature of contamination, if any, appropriate agencies shall be notified (e.g., City of Santa Ana Fire Department). If needed, a Site Health and Safety Plan that meets Occupational Safety and Health Administration requirements shall be prepared and in place prior to commencement of work in any contaminated area.	
Impact 4.4-3. Implementation of the proposed project could result in the handling of hazardous materials, substances, or waste within 0.25 mile of an existing school.	LTS	No mitigation is required.	LTS
Impact 4.4-4. The proposed project area includes sites that are included on a list of hazardous materials sites and, as a result, could create a significant hazard to the public or environment	PS	MM-OZ 4.6-2 would apply to this impact.	LTS
Impact 4.4-5. Implementation of the proposed project could interfere with an adopted emergency response plan or emergency evacuation plan.	PS	MM-OZ 4.6-5: Prior to initiation of construction activities, any development within the Overlay Zone shall have a completed traffic control plan, prepared by the developer that will be implemented during construction activities. This may include, but is not limited to, the maintenance of at least one unobstructed lane in both directions on	LTS

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<p>surrounding roadways. At any time only a single lane is available, the developer shall provide a temporary traffic signal, signal carriers (i.e. flagpersons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway segment, the developer should provide appropriate signage indicating alternative routes.</p> <p>MM-OZ 4.6-6: The City Planning Department shall consult with the Santa Ana Police Department and the Santa Ana Fire Department to disclose temporary closures and alternative travel routes in order to ensure adequate access for emergency vehicles when construction of future projects would result in temporary land or roadway closures.</p> <p>MM-OZ 4.6-7: The Santa Ana Fire Department, in consultation with other applicable City Departments (e.g. Police), shall update their Emergency Preparedness Plan prior to occupancy of the first project developed under the Overlay Zone, to address potential for accidental release of hazardous materials that may be used, stored, and/or transported in association with operation of project implementation.</p>	
<p>Impact 4.4-E1. Development of the Elan Project would not result in a significant hazard to the public or the environment through future development’s routine transport, use, or disposal of hazardous materials.</p>	<p>LTS</p>	<p>No mitigation is required.</p>	<p>LTS</p>
<p>Impact 4.4-E2. Construction activities associated with implementation of the Elan Project could result in the release of hazardous materials to the environment through reasonably foreseeable upset and accident conditions.</p>	<p>PS</p>	<p>MM-OZ 4.6-2 and MM-OZ 4.6-3 would apply to this impact.</p>	<p>LTS</p>

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
Impact 4.4-E3. Development of the Elan Project could result in the handling of hazardous materials, substances, or waste within 0.25 mile of an existing school.	LTS	No mitigation is required.	LTS
Impact 4.4-E4. The Elan Project area includes sites that are included on a list of hazardous materials sites and, as a result, could create a significant hazard to the public or environment.	LTS	No mitigation is required.	LTS
Threshold 4.8-E5. Development of the Elan Project could interfere with an adopted emergency response plan or emergency evacuation plan.	PS	MM-OZ 4.6-5 and MM-OZ 4.6-6 would apply to this impact.	LTS
Hydrology and Water Quality			
Impact 4.5-1: Implementation of the proposed project would not violate water quality standards, waste discharge requirements, or otherwise substantially degrade water quality.	PS	<p>MM-OZ 4.7-1: In order to comply with the 2003 DAMP, future development projects in the Overlay Zone shall prepare Storm Drain Plans, Stormwater Pollution Prevention Plans (SWPPP), and Water Quality Management Plans (WQMP) conforming to the current National Pollution Discharge Elimination System (NPDES) requirements, prepared by a Licensed Civil Engineer or Environmental Engineer, shall be submitted to the Department of Public Works for review and approval.</p> <p>(a) A SWPPP shall be prepared and updated as needed during the course of construction to satisfy the requirements of each phase of the development. The plan shall incorporate all necessary Best Management Practices (BMPs) and other City requirements to eliminate polluted runoff until all construction work for the project is completed. The SWPPP shall include treatment and disposal of all dewatering operations flows, and for nuisance flows during construction.</p> <p>(b) A WQMP shall be prepared, maintained, and updated as needed to satisfy the requirements of the adopted NPDES program. The plan</p>	LTS

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		shall incorporate water quality measures for all improved phases of the project. (c) Location of the BMPs shall not be within the public right-of-way.	
Impact 4.5-2: Future development in the MEMU Overlay Zone expansion area could alter the existing drainage pattern of the area and potentially result in erosion and siltation.	PS	MM-OZ 4.7-1 would apply to this impact.	LTS
Impact 4.5-3: Future development in the MEMU Overlay Zone expansion area could alter the existing drainage pattern and potentially result in increased downstream flooding through the addition of impervious surface, or exceeding the capacity of existing or planned stormwater drainage systems.	PS	MM-OZ 4.7-1 and MM-OZ 4.7-2 would apply to this impact. MM-OZ 4.7-2: Prior to issuance of grading permits, future development projects in the Overlay Zone shall submit a Hydrology and Hydraulic Study to the Public Works Department for review and approval. If existing facilities are not adequate to handle runoff that may be generated by the proposed development, then the applicant shall propose feasible remedies to assure that adequate drainage facilities will be available prior to issuance of occupancy permits. The applicant may propose storm drain improvements to be constructed in order to meet project needs. If necessary storm drain upgrades cannot be implemented prior to issuance of occupancy permits, on site detention facilities or other methods acceptable to the City shall be included with new development projects to ensure that post-construction runoff does not exceed pre-development quantities.	LTS
Impact 4.5-E1: Implementation of the Elan Project would not violate water quality standards, waste discharge requirements, or otherwise substantially degrade water quality.	PS	MM-OZ 4.7-1 would apply to this impact.	LTS

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
Impact 4.5-E2: Development of the Elan Project could alter the existing drainage pattern of the site and potentially result in erosion and siltation.	PS	MM-OZ 4.7-1 would apply to this impact.	LTS
Impact 4.5-E3: Development of the Elan Project could alter the existing drainage pattern and potentially result in increased downstream flooding through the addition of impervious surfaces, or exceed the capacity of existing or planned stormwater drainage systems.	PS	MM-OZ 4.7-2 would apply to this impact.	LTS
Land Use and Planning			
Impact 4.6-1: The proposed project would not result in conflicts of use.	LTS	No mitigation is required.	LTS
Impact 4.6-2: The proposed project would not conflict with the Santa Ana General Plan or Zoning Code by modifying MEMU Overlay Zone land use districts, development standards, and land uses.	LTS	No mitigation is required.	LTS
Impact 4.6-E1: Implementation of the Elan Project would not result in conflicts of use.	LTS	No mitigation is required.	LTS
Impact 4.6-E2: Implementation of the Elan Project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	No mitigation is required.	LTS

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
Noise			
<p>Impact 4.7-1. Construction activities associated with the proposed project would generate temporary noise levels in excess of the noise limits typically imposed by the City of Santa Ana Municipal Code.</p>	<p>PS</p>	<p>MM-OZ 4.9-1: Construction activities shall be limited to the following general restrictions. In the event that there is a conflict between the City of Santa Ana Municipal Code and the City of Tustin Municipal Code, the more restrictive measures shall be applied:</p> <ul style="list-style-type: none"> • All construction activity within the City shall be conducted in accordance with Section 18-314(e) of the City of Santa Ana Municipal Code. • All construction activity within 200 feet of the City of Tustin Border shall be conducted in accordance with Section 4617(e) of the City of Tustin Municipal Code. <p>MM-OZ 4.9-2: The project applicant shall require by contract specifications that the following construction best management practices (BMPs) be implemented by contractors to reduce construction noise levels:</p> <ul style="list-style-type: none"> • Two weeks prior to the commencement of construction, notification must be provided to surrounding land uses within 1,000 feet of a project site disclosing the construction schedule, including the various types of activities that would be occurring throughout the duration of the construction period. • Ensure that construction equipment is properly muffled according to industry standards and be in good working condition. • Place noise-generating construction equipment and locate construction staging areas away from sensitive uses, where feasible. • Schedule high noise-producing activities between the hours of 8:00 A.M. and 5:00 P.M. to minimize disruption on sensitive uses. • Implement noise attenuation measures to the extent feasible, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources. • Use electric air compressors and similar power tools rather than diesel equipment, where feasible. 	<p>LTS</p>

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<ul style="list-style-type: none"> ● Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes. ● Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party. <p>Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City prior to issuance of a grading permit.</p> <p>MM-OZ 4.9-3: The project applicant shall require by contract specifications that construction staging areas along with the operation of earthmoving equipment within the project area would be located as far away from vibration and noise sensitive sites as possible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City prior to issuance of a grading permit.</p> <p>MM-OZ 4.9-4: The project applicant shall require by contract specifications that heavily loaded trucks used during construction would be routed away from residential streets to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City prior to issuance of a grading permit.</p>	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
<p>Impact 4.7-2. Operation of the proposed project could expose land uses to noise levels that exceed the standards established by the City of Santa General Plan.</p>	<p>PS</p>	<p>MM-NOI-1: Where future residential uses would be constructed in areas exposed to noise, exterior noise control shall be provided as necessary to comply with the City’s exterior noise guideline of 65 dB CNEL, as specified in the Noise Element of the General Plan. The noise control requirements, if any, shall be determined by a qualified acoustical consultant as part of the final engineering design of the project and shall be included on the building plans prior to issuance of building permits. It is noted that exterior living space for multi-family developments may be provided as a combination of private space (patios, balconies, etc.) and common areas (playgrounds, pool areas, etc.). As a result, it may not be necessary to provide noise control at all private areas, provided sufficient common area is included within the project.</p> <p>MM-OZ 4.9-6: Prior to issuance of building permits, building plans shall specify the STC rating of windows and doors for all residential land uses. Window and door ratings shall be sufficient to reduce the interior noise level to a CNEL of 45 dBA or less, and shall be determined by a qualified acoustical consultant as part of the final engineering design of the project.</p> <p>MM-OZ 4.9-7: The developer shall provide proper shielding for all new HVAC systems used by the proposed residential and mixed use buildings to achieve an attenuation of 15 dBA at 50 feet from the equipment.</p>	<p>LTS</p>
<p>Impact 4.7-3. Construction activities associated with the proposed project would generate a substantial temporary increase in ambient noise levels.</p>	<p>PS</p>	<p>MM-OZ 4.9-1 through MM-OZ 4.9-4 would apply to this impact.</p>	<p>LTS</p>
<p>Impact 4.7-4. Construction of the proposed project could generate or expose persons or structures to excessive groundborne vibration.</p>	<p>PS</p>	<p>MM-OZ 4.9-1 through MM-OZ 4.9-4 would apply to this impact.</p>	<p>SU</p>

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
Impact 4.7-5. Operation of the proposed project would generate increased local traffic volumes that would cause a substantial increase in ambient noise levels in the project vicinity.	SU	There is no feasible mitigation to reduce this impact.	SU
Impact 4.7-E1. Construction activities associated with the Elan Project would generate temporary noise levels in excess of the noise limits typically imposed by the City of Santa Ana Municipal Code.	PS	MM-OZ 4.9-1 through MM-OZ 4.9-4 would apply to this impact.	LTS
Impact 4.7-E2. Operation of the Elan Project could expose land uses to noise levels that exceed the standards established by the City of Santa General Plan, which would be a significant impact.	PS	MM-NOI-1 and MM-OZ 4.9-6 through MM-OZ 4.9-7 would apply to this impact.	LTS
Impact 4.7-E3. Construction activities associated with the Elan Project would generate a substantial temporary increase in ambient noise levels.	PS	MM-OZ 4.9-1 through MM-OZ 4.9-4 would apply to this impact.	LTS
Impact 4.7-E4. Construction of the Elan Project could generate or expose persons or structures to excessive groundborne vibration.	PS	MM-OZ 4.9-1 through MM-OZ 4.9-4 would apply to this impact.	SU
Impact 4.7-E5. Operation of the Elan Project would generate increased local traffic volumes.	LTS	No mitigation measures are required.	LTS

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
Transportation/ Traffic			
Impact 4.8-1. Implementation of the proposed project would cause an increase in traffic that is substantial in relation to existing traffic load and capacity of the street system.	PS	<p>MM-TRA-1: The following improvements shall be installed prior to 2040, as the projected facilities are forecasted to be affected. Timing and funding of these improvements shall be based on a program as outlined in mitigation measure MM-OZ 4.12-4 (and included in the original MEMU EIR).</p> <ul style="list-style-type: none"> • Standard Avenue & First Street – widen northbound approach and reconfigure to provide one left-turn lane, two through lanes, and one right-turn lane, and widen the southbound approach and reconfigure to provide one left-turn lane and one shared through and right-turn lane, along with two receiving lanes that merge back to one lane. • Grand Avenue & Santa Ana Boulevard – convert westbound shared through and right-turn lane to a right-turn only lane and include an overlap right-turn phasing by prohibiting the southbound U-turn movement. • Grand Avenue & Fourth Street – widen northbound approach to include an additional through lane and provide an additional receiving lane on the north leg of the intersection. Convert eastbound shared through and right-turn lane to a through lane and construct a right-turn lane. • Grand Avenue & First Street – widen northbound approach to provide two left-turn lanes, three through lanes, and one right-turn lane. Widen westbound approach to provide two left-turn lanes, three through lanes, and one right-turn lane by extending the current right-turn pocket and providing a westbound right-turn overlap signal phasing. • Lyon Street & First Street – widen northbound approach to provide one left-turn lane, one shared through and left-turn lane, and one right-turn lane with a right-turn signal overlap phasing and split signal phasing for the north-south approaches. Widen eastbound approach to convert the shared through and right-turn lane into a third through lane and construct a new right-turn lane. 	SU

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<ul style="list-style-type: none"> • Mabury Street/Elk Lane & First Street – widen northbound approach to provide a second right-turn lane, widen the southbound approach to provide a second southbound right-turn lane, and widen the eastbound approach to construct a dedicated eastbound right-turn lane. • Elk Lane at Chestnut Avenue/Main Street – converted to a signalized intersection. • Tustin Avenue at Fourth Street – widen northbound approach to construct a dedicated northbound right-turn lane with a right-turn overlap signal phasing and prohibit the westbound U-turn movement. • SR-55 southbound ramp at Fourth Street – construct an eastbound free right-turn lane. Right-of-way is required for the construction of the eastbound free right-turn lane. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans. • SR-55 northbound ramps at Irvine Boulevard – restripe eastbound approach to provide two left-turn lanes and two through lanes. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans. • Yorba Street at First Street – reinstate the westbound through lane that is planned to be removed to provide the one through lane and one shared through and right-turn lane in the westbound approach as existing conditions. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans. • B Street at First Street – reinstate the westbound through lane that is planned to be removed to provide the one through lane and one shared through and right-turn lane in the westbound approach as existing conditions. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans. • El Camino Real at First Street – restripe the northbound right-turn lane to a shared left- and right-turn lane and change the northbound/southbound signal phasing from permitted to split 	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<p>phasing. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans.</p> <ul style="list-style-type: none"> • Prospect Avenue at First Street – reinstate the westbound through lane that is planned to be removed to provide the one through lane and one shared through and right-turn lane in the westbound approach as existing conditions. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans. • Newport Avenue at Irvine Boulevard – convert the northbound right-turn lane signal phasing to an overlap signal phasing and prohibit the westbound U-turn movement. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans. <p>MM-OZ 4.12-1: As part of the project, the City of Santa Ana and the project sponsors shall work with the transit providers to implement various transit-related measures to improve and expand bus system service within the Overlay Zone. These measures may include, but are not limited to, the following:</p> <ul style="list-style-type: none"> • Adding bus stops to the Overlay Zone along existing and proposed roadways • Changing bus service headways to respond to increased demand • Changing bus service destinations to respond to changing demand • Adding local shuttle service for employees and patrons of the Overlay Zone <p>The details of bus service improvements shall be determined in coordination with OCTA. The following recommendations would help encourage public transit patronage for project related trips:</p> <ul style="list-style-type: none"> • Bus Stop Locations – Relocation of existing bus stops and the provision of additional bus stops should be considered to accommodate transit users at convenient locations. 	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<ul style="list-style-type: none"> • Days of Operation – The City should work with OCTA to consider changes to route lines to serve nighttime and weekend project visitors and employees. • Headway – The City should work with OCTA to review route headways to determine if it would be appropriate to reduce them to accommodate transit riders within the Overlay Zone. <p>MM-OZ 4.12-2: Future development within the proposed Overlay Zone shall prepare separate traffic studies specific to the individual projects that are proposed. The traffic studies for future projects shall be prepared by a qualified traffic engineer of the City’s choosing. Further, and as determined by the traffic studies, the above identified improvement measures shall be implemented as a condition of the proposed development, either through the direction construction of improvements by the project applicant or through payment of a fee, as required by the program detailed in MM-OZ 4.12-4.</p> <p>MM-OZ 4.12-3: The City of Santa Ana Planning Department, in cooperation with the Department of Public Works, shall monitor the traffic signals within the Overlay Zone Study Area once every five years to ensure that traffic signal timing is optimized.</p> <p>MM-OZ 4.12-4: The City of Santa Ana shall institute a program for systematic mitigation of impacts as development proceeds within the Overlay Zone to ensure mitigation of the individual improvements. The program shall prescribe the method of participation in the mitigation program by individual projects and guide the timely implementation of the mitigation measures. The program should include the following elements:</p> <ul style="list-style-type: none"> • A funding and improvement program should be established to identify financial resources adequate to construct all identified mitigation measures in a timely basis. • The program should allow for acquisition of entire properties including business relocation where necessary to construct mitigation measures. Funds derived from sale of surplus acquired properties should be returned to the program. 	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<ul style="list-style-type: none"> • All properties that redevelop within the Overlay Zone should participate in the program on a fair share per new development trip basis. The fair share should be based upon the total cost of all identified mitigation measures, divided by the peak hour trip generation increase forecast. This rate peak hour trip should be imposed upon the incremental traffic growth for any new development within the Overlay Zone. • The program shall include resources to conduct preliminary engineering studies to complete alignment studies and project specific environmental clearances for Tustin Avenue at Seventeenth Street and at Fourth Street. • The program should raise funds from full development of the Overlay Zone to fund all identified mitigation measures. • The program should monitor phasing development of the Overlay Zone and defer or eliminate improvements if the densities permitted in the Overlay Zone are not occurring. • Program phasing should be monitored through preparation of a specific project traffic impact studies for any project that is expected to include more than 100 dwelling units or 100,000 square feet of non-residential development. Traffic impact studies should use traffic generation rates that are deemed to be most appropriate for the actual development proposed. • The program should initiate project development to assure timely completion of the improvements identified to be needed for the First and Cabrillo Towers project by 2010 or as soon after as practically feasible. • Properties within Santa Ana and within one-half mile of the Overlay Zone that redevelop to result in higher traffic generation should also participate in the program to insure equity. 	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<ul style="list-style-type: none"> • The program should provide for full construction of projects outside of Santa Ana, if the Overlay Zone will create a traffic impacted based upon the CMP. • The program should provide fair share contribution to construction costs of other improvements outside of the Overlay Zone if they are identified in this traffic study but they are not impacted as defined by the CMP. • The fair share contribution would presume participation by other developments outside of the City of Santa Ana (generally within the City of Tustin) in proportion to traffic growth at the affected sites. • Traffic impact studies for future projects shall be prepared by a qualified traffic engineer approved or retained by the City. • The City may elect to implement appropriate mitigation measures as a condition of approval of the proposed developments, where appropriate. All or part of the costs of these improvements may be considered to be a negotiated credit toward the program, however the program must be administered in a manner that assures that it can fund necessary improvements to maintain adequate level of service at all intersections within this study. If funding of priority improvements cannot be assured, credit for construction of lower priority improvements may not be assured or may be postponed until more program funds are available. • Traffic studies for future developments within the Overlay Zone must also use trip generation rates which are specific for these projects and are approved by the City. The traffic consultant preparing traffic studies for specific projects in the Overlay Zone must use City-approved trip generation rates specific to these projects. These studies are subject to City review. 	
Impact 4.8-2. Implementation of the proposed project would exceed standards established by the Orange County	PS	MM-OZ 4.12-2 and MM-OZ 4.12-4 as well as MM-TRA-1 apply to this impact.	SU

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
Transportation Authority within the Study Area.			
Impact 4.8-E1. Implementation of the Elan Project would cause an increase in traffic that is substantial in relation to existing traffic load and capacity of the street system.	PS	<p>MM-TRA-2: Prior to project occupancy, the applicant shall construct the improvements listed below or pay a fair-share/local fee to cover the Elan Project’s fair share of the full construction costs needed to implement these mitigation measures. These mitigation shall be installed prior to 2040, as the projected facilities are forecasted to be affected.</p> <ul style="list-style-type: none"> • I-5 northbound ramps at Fourth Street: Widen and/or restripe Fourth Street to provide a second exclusive westbound right-turn lane. Modify the existing traffic signal for signing and striping improvements accordingly. This improvement is subject to the review and approval of Caltrans. • SR-55 northbound ramps at Fourth Street: Widen and/or restripe Fourth Street to provide an exclusive westbound (free) right-turn lane. Restripe to convert the third eastbound through lane to a second eastbound left-turn lane. Modify the existing traffic signal for signing and striping improvements accordingly. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans. • SR-55 northbound ramps at Fourth Street/Irvine Boulevard: Widen and/or restripe the westbound approach on Fourth Street to provide an exclusive (free) right-turn lane. Modify existing traffic signal as well as existing signing and striping improvements accordingly. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans. • Lyon Street at First Street: Widen Lyon Street to provide an exclusive northbound left-turn lane. Widen and/or restripe First Street to provide an exclusive eastbound right-turn lane. Modify the existing traffic signal for split signal phasing for the northbound and southbound approaches and provide northbound right-turn overlap phasing. Remove west leg crosswalk. Modify the existing signing and striping improvements accordingly. 	LTS

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<ul style="list-style-type: none"> • Mabury Street/Elk Lane at First Street: Widen and/or restripe Elk Lane to provide a second exclusive northbound right-turn lane. Widen and/or restripe First Street to provide an exclusive eastbound right-turn lane. Modify the existing traffic signal for northbound right-turn overlap phasing and existing signing and striping improvements accordingly. • Cabrillo Park Drive at First Street: Restripe First Street to convert the second eastbound through lane to a second eastbound left-turn lane. Modify the existing traffic signal for signing and striping improvements accordingly. • Elk Lane at Chestnut Avenue/Main Street: Install a traffic signal and design for three-phase operations. Widen and/or restripe Main Street to provide an exclusive westbound right-turn lane. Modify existing signing and striping improvements. 	
Impact 4.8-E2. Implementation of the proposed Elan Project would not exceed standards established by the Orange County Transportation Authority within the Study Area.	LTS	No mitigation measures are required.	LTS
Tribal Cultural Resources			
Impact 4.9-1: Implementation of the proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource listed in or eligible for listing in the CRHR, or in a local register.	No impacts	No mitigation measures are required.	No impacts
Impact 4.9-2: Implementation of the proposed project could encounter significant tribal cultural resources during construction.	PS	MM-OZ 4.4-2: Due to the lack of cultural resource studies for the Overlay Zone Expansion Area, and in order to avoid damaging any unidentified cultural resources, a qualified archaeologist would be retained to monitor any significant ground-disturbing activities in	LTS

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		<p>undeveloped areas within the Expansion Area, and any deep (10” or deeper) ground-disturbing activities in all areas of the Expansion Area.</p> <p>MM-OZ 4.4-3: In the event that archaeological resources are unearthed during project subsurface activities, all earth-disturbing work within a 100-meter radius must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find. After the find has been appropriately mitigated, work in the area may resume.</p> <p>MM-OZ 4.4-5: If human remains are unearthed, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC will then contact the most likely descendant of the deceased Native American, who will then serve as consultant on how to proceed with the remains.</p> <p>MM-TCR-1: In the event that a tribal cultural resource is unexpectedly identified during the course of a proposed project, and the City determines that the project may cause a substantial adverse change to a tribal cultural resource, the City will employ one or more of the following standard mitigation measures:</p> <ol style="list-style-type: none"> 1. Avoidance and preservation of the resource in place, including, but not limited to, planning and construction to avoid the resource and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resource with culturally appropriate protection and management criteria. 2. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following: <ol style="list-style-type: none"> (a) Protecting the cultural character and integrity of the resource (b) Protecting the traditional use of the resource 	

Table ES-2. Summary of Environmental Effects and Mitigation Measures

Impact(s)	Level of Significance Prior to Mitigation	Mitigation Measures ¹	Level of Significance after Mitigation
		(c) Protecting the confidentiality of the resource 3. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places protecting the resource. 4. Protecting the resource.	
Impact 4.9-E1: Implementation of the Elan Project would not cause a substantial adverse change in the significance of a tribal cultural resource listed in or eligible for listing in the CRHR, or in a local register.	No impacts	No mitigation measures are required.	No impacts
Impact 4.9-E2: Implementation of the Elan Project could encounter significant tribal cultural resources during construction.	PS	MM-OZ 4.4-2, 4.4-3, and 4.4-5 from the MEMU EIR as well as MM-TCR-1 would apply to this impact.	LTS

1.1 Overview

The City of Santa Ana (City) is proposing to expand the boundaries of the existing approximately 200-acre Metro East Mixed Use (MEMU) Overlay Zone by an additional 33.52 acres, while maintaining the potential development capacity in place. Additionally, the City is considering an application within the expanded MEMU boundaries for the development of a mixed-use project featuring 603 residential apartments and approximately 8,500 square feet (sf) of commercial space on the old Elks Club site at the corner of Lyon and First Street (Elan Project). The MEMU Overlay zoning document would also be updated to refine development standards and allowable land uses. Together these proposals constitute the “proposed project.”

Enacted in 1970, the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) and its implementing guidelines (State CEQA Guidelines; 14 California Code of Regulations [CCR] Section 15000 et seq.) require that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority prior to taking action on those projects. As authorized by Section 15050 of the State CEQA Guidelines, the City will serve as the lead agency for the environmental review.

1.2 Background and Previous Environmental Documentation

A Final Environmental Impact Report (EIR) for the MEMU Overlay Zone was certified by the Santa Ana City Council on March 19, 2007 (SCH No. 2006031041) (referred to hereafter as the MEMU EIR), which addressed the impacts of implementation of the zone change. A second component of the MEMU EIR considered the environmental effects of the First and Cabrillo Towers, which included 450,000 sf of residential areas (approximately 374 residential units), approximately 8,900 sf of retail/commercial areas, and approximately 768 parking spaces in an existing garage. These towers were never constructed, although a less-intense residential mixed-use development was later constructed in its place.

Most of the potentially significant environmental impacts identified in the MEMU EIR were determined to be less than significant or were reduced to a level that is considered less than significant through either the adoption of mitigation measures or the incorporation of project revisions that would avoid or substantially lessen significant impacts. Impacts on air quality, noise, and traffic and circulation, however, were identified as significant and unavoidable in the MEMU EIR. For those impact areas, the City adopted a Statement of Overriding Considerations.

1.3 Purpose and Use of a Subsequent EIR

As the proposed project represents changes or modifications to a project where a previous EIR was certified, the City must determine whether additional environmental documentation must be completed to address the changes to the project. The City has reviewed the applications in accordance with Section 15162 and 15163 of the State CEQA Guidelines to determine whether the proposed project and its impacts are within the scope of the previously certified MEMU EIR, or whether a subsequent or supplemental EIR may be required.

Pursuant to Section 15162(a) of the State CEQA Guidelines, when an EIR has been certified, no subsequent EIR may be required for a project unless the City determines, on the basis of substantial evidence, that one or more of the following conditions are met:

- (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:
 - (A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
 - (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Section 15163 of the State CEQA Guidelines provides that a lead agency may choose to prepare a supplement to an EIR rather than a subsequent EIR if:

- (1) Any of the conditions described in Section 15162 would require the preparation of a subsequent EIR, and
- (2) Only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation.

Based on the requirements above, the City has determined that a subsequent EIR (SEIR) is the most appropriate environmental document due to the characterization of the proposed changes to the project that was previously approved with the certified Final MEMU EIR in 2007.

1.4 Screening and Evaluation of Environmental Impacts

This SEIR, together with the MEMU EIR and other documents incorporated by reference herein, serve as the environmental review of the proposed project, as required pursuant to the provisions of PRC section 21000 et. seq., the State CEQA Guidelines at 14 CCR Section 15000 et seq., and the City of Santa Ana procedures for CEQA implementation.

As suggested in Section 15063(d)(3) of the State CEQA Guidelines, an Environmental Checklist Form is used to indicate whether the conditions set forth in Section 15162 of the State CEQA Guidelines would require a subsequent or supplemental EIR, and whether there are new significant impacts resulting from the proposed project. The Environmental Checklist Form is used to review the potential environmental effects of the proposed project for each of the following areas:

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Tribal Cultural Resources
- Utilities and Service Systems

The Environmental Checklist Form prepared for this project is found in Appendix A of this SEIR. It contains a series of questions about the project for each of the impact categories. There are four possible responses to each of the questions included on the Environmental Checklist Form, as follows:

1. New or Substantially More Severe Significant Impact to be Re-evaluated
2. Less-than-Significant Impact with Additional Mitigation Incorporated
3. Less-than-Significant Impact with Previous Mitigation Incorporated
4. No New Impact

For those impacts where the proposed project changes would result in No New Impacts, a brief discussion is provided in the Environmental Checklist Form, and additional analysis is not presented further in this SEIR. For environmental issues where any of the other potential impact categories are checked off, additional discussion and analysis are presented in Chapters 3 and 4 of this EIR.

1.5 Type of EIR/Relationship between MEMU Overlay Zone Expansion and Elan Project

The MEMU Overlay Zone is a land use plan that guides the physical development within the boundaries of the Overlay Zone. It is not an implementation plan, and adoption of the Overlay Zone does not constitute a commitment to any specific project, construction schedule, or funding priority. Each development proposal undertaken during the planning horizon of the Overlay Zone must be approved individually by the City in compliance with CEQA. Therefore, the MEMU Overlay Zone is analyzed at a program level, which evaluates the effects of the implementation of the entire Overlay Zone.

The Elan Project converges with the proposed modifications to the MEMU Overlay Zone, and represents a development proposal within the MEMU Overlay Zone expansion area that must be approved individually in accordance with CEQA. Therefore, the Elan Project is described in detail, and a project-level analysis of the potential environmental impacts is provided concurrently with the program-level analysis of the MEMU Overlay Zone Expansion within this SEIR.

1.6 Organization and Contents of this SEIR

The content and organization of this SEIR are designed to meet the requirements of CEQA and the State CEQA Guidelines and present issues, analysis, mitigation, and other information in a logical and understandable way. This SEIR is organized into the sections listed below.

- *Executive Summary* provides a project description and a summary of the environmental impacts and mitigation measures.
- Chapter 1, *Introduction*, provides an overview of the project, background, and current CEQA compliance information; an overview of the decision-making process; and information regarding the organization of the SEIR.
- Chapter 2, *Project Description*, provides a description of the project's location, characteristics, and objectives, as well as a summary of the major components of the proposed project.
- Chapter 3, *Environmental Setting*, provides a description of the existing conditions within the MEMU Overlay Zone expansion area, the Elan Project site, and surrounding areas, as they relate to the environmental issues discussed in the SEIR. Additionally, any changes that may have occurred to the setting since the original 2007 Final MEMU EIR are discussed.
- Chapter 4, *Environmental Impact Analysis*, contains a summary of the 2007 Final MEMU EIR findings, detailed environmental analysis of the proposed project impacts for the MEMU Expansion Area and the Elan Project, applicable mitigation measures from the 2007 Final MEMU EIR, and any new mitigation measures that may be required.
- Chapter 5, *Cumulative Impacts*, provides an update to the cumulative impacts analysis for each resource and the relative importance of the proposed project's contribution to any significant cumulative impact.
- Chapter 6, *Alternatives*, describes a reasonable range of alternatives to the project that could reduce significant environmental effects that cannot be avoided.

- Chapter 7, *Other CEQA Considerations*, includes discussions and analyses required by CEQA, including:
 - Effects Found not to Be Significant
 - Energy Considerations
 - Growth-Inducing Impacts
 - Significant and Unavoidable Environmental Impacts
 - Significant Irreversible Changes
- Chapter 8, *List of Preparers*, identifies persons involved in the preparation of the SEIR.
- Chapter 9, *References*, identifies referenced sources for the SEIR.
- Appendices provide information and technical studies that support the environmental analysis contained within the SEIR.

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2.1 Project Location and Setting

The existing MEMU Overlay Zone is largely developed with commercial and office uses and comprises approximately 200 acres located immediately east of the Santa Ana (I-5) Freeway and immediately west of the Costa Mesa (SR-55) Freeway and is bounded by I-5 on the west and south, Tustin Avenue on the east, and East Sixth Street on the north. Several roadways provide access to properties within the Overlay Zone, including East First Street, East Fourth Street, Cabrillo Park Drive, Park Court Place, East Sixth Street, Parkcenter Drive, and North Golden Circle Drive.

The proposed MEMU Overlay Zone expansion area would add an additional 33.52 acres or approximately 48 parcels to the project area. The additional project area extends west primarily along First Street, generally bound by I-5 on the east, Grand Avenue on the west, East Chestnut Avenue on the south, and Fourth Street on the north. The existing parcels are currently developed with a variety of commercial and residential land uses or that are vacant, undeveloped, or abandoned. The properties affected have frontage primarily on First Street, while others are oriented toward local collectors or Grand Avenue.

The proposed Elan Project is located on an approximately 6.4-acre site at 1660 East First Street fronting First Street between Lyon Avenue and Elk Lane, within the proposed MEMU Overlay Zone expansion area.

Figure 2-1 shows the regional location of the project area and Figure 2-2 shows the existing MEMU Overlay Zone boundaries and the proposed modified boundaries.

Existing General Plan Land Use Designations

The existing MEMU Overlay Zone area currently has a mix of General Plan land use designations of District Center (DC) and Professional and Administrative Offices (PAO). The General Plan designations of the parcels within the proposed expanded MEMU Overlay Zone are primarily commercial with some areas designated for residential uses. Figure 2-3 (Existing General Plan Land Use Designations) shows the current General Plan land use designations for the existing and expanded Overlay Zone areas. The applicable existing General Plan land use designations are described as follows:

- **DC (District Center):** includes the major activity areas in the City, including the Metro East area. District Centers are designed to serve as anchors to the City's commercial corridors, and to accommodate major development activity. District Centers are to be developed with an urban character that includes a mixture of high-rise office, commercial, and residential uses that provide shopping, business, cultural, education, recreation, entertainment, and housing opportunities. The intensity standard for the District Center designation ranges from a floor area ratio (FAR) of 1.0 to 5.0. Residential development intensity is based on a combination of FAR and zoning overlay and/or development standards. District Centers serve as major retail and employment centers locally and regionally, and should include development that promotes the City as a regional activity center while creating an environment conducive to business on a

regional scale. The Metro East District is envisioned as a vibrant urban village with a balance of office, residential, and service uses. Pedestrian and transportation linkages are key in this urban setting.

- **PAO (Professional and Administrative Office):** applies to those areas where professional and/or administrative offices are predominant, or where such development is being encouraged. Land included in this designation is found primarily near the Civic Center, and along the First Street and Tustin Avenue Corridors in close proximity to freeways. The FAR intensity standard applicable to this land use designation ranges from 0.5 to 1.0.
- **GC (General Commercial):** applies to commercial corridors along major arterial roadways in the City. The intensity standard application to this designation is a FAR density of 0.5 to 1.0.
- **MR-15 (Medium Density Residential):** applies to those sections of the City that are developed with residential uses at densities of up to 15 dwelling units per acre (du/ac). Development in this designation is characterized by duplexes, apartments, or a combination of both.
- **LR-7 (Low Density Residential):** applies to those area of the City that are development with lower-density residential land uses. The allowable maximum development intensity is 7 du/ac. Development in this category is characterized primarily by single-family homes.
- **UN (Urban Neighborhood):** applies to primarily residential areas with pedestrian-oriented commercial uses, schools, and small parks. The FAR intensity standard applicable to this land use designation ranges from 0.5 to 3.0.

Existing Zoning Designations

The MEMU Overlay Zone expansion area currently comprises several existing zoning designations. Figure 2-4 (Existing Zoning) shows the existing zoning in the expanded Overlay Zone. The existing zoning designations are described as follows:

- **C-2 (General Commercial):** Allows for retail and service uses, professional, administrative and business offices, parking lots and structures, automobile sales, churches, theaters, hospitals, gymnasiums, golf courses, and schools. Additionally, the C-2 zone allows for automotive garages; blueprinting, photo-engraving, and other reproduction processes; equipment rental yards; metal shops; tire recapping; wholesale establishments; truck, trailer, tractor, and boat sales; research institutions and laboratories; adult entertainment businesses subject to other requirements; and cyber cafés.
- **R-1 (Single-Family Residence):** Allows for one-family dwellings, private greenhouses and horticultural collections for non-commercial use, temporary real estate offices, accessory structures, limited child care facilities, and limited adult daycare facilities.
- **R-2 (Two-Family Residence):** Allows for similar uses as the R-1 zone, with the addition of two-family dwellings and townhouses.
- **R-3 (Multiple-Family Residence):** Allows for similar uses as the R-1 and R-2 zones, with the addition of multiple-family dwellings.
- **SD-54 (Xerox Centre Specific Development Plan):** Adopted in 1989, this Specific Development Plan establishes development standards and constraints for future phases of Xerox Centre, a multi-phase mixed-use commercial development on a 10.6-acre site bound by



**Figure 2-1
Regional Vicinity Map
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR**

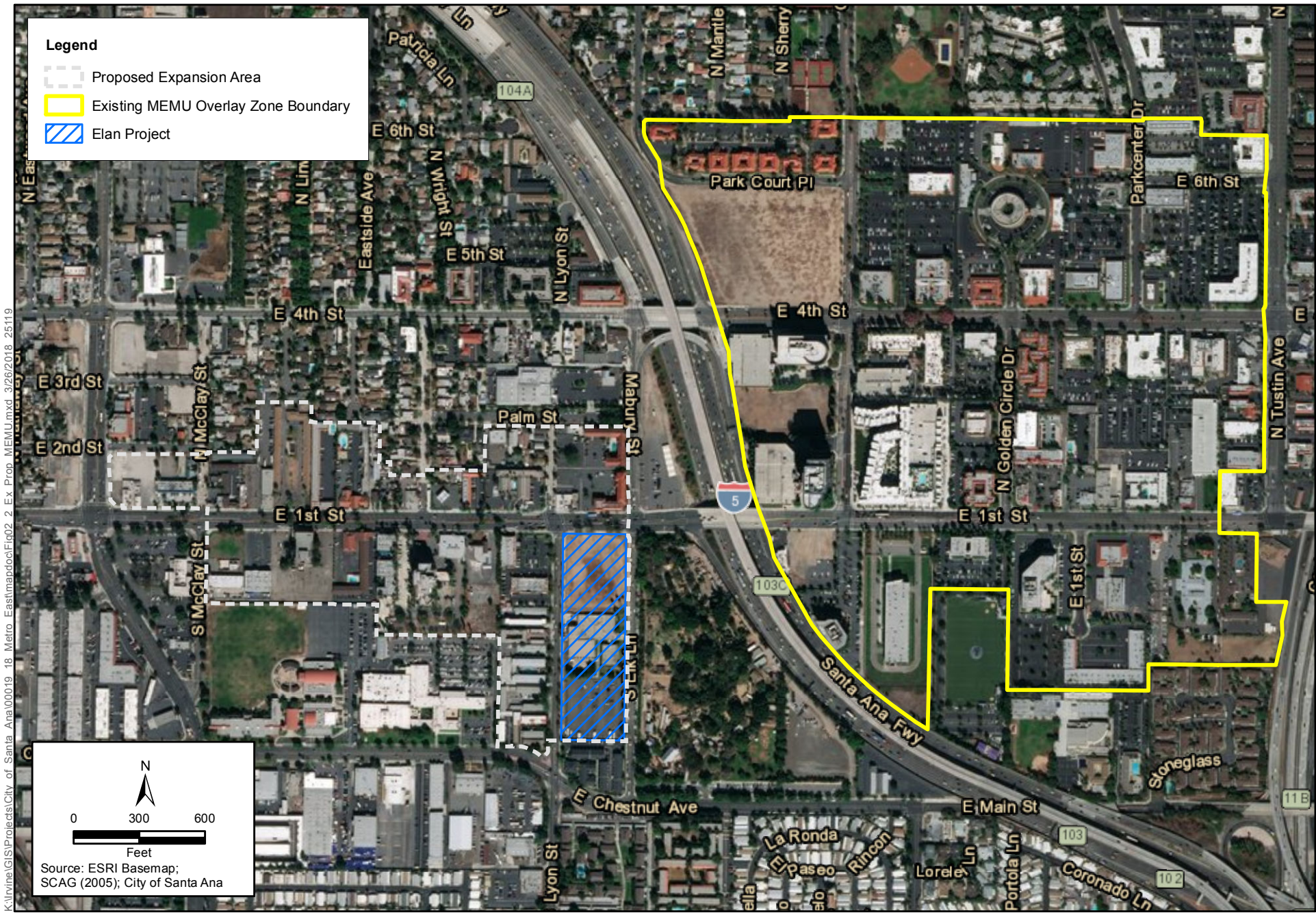


Figure 2-2
Existing MEMU Overlay Zone Boundaries and Proposed Expansion Area
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR

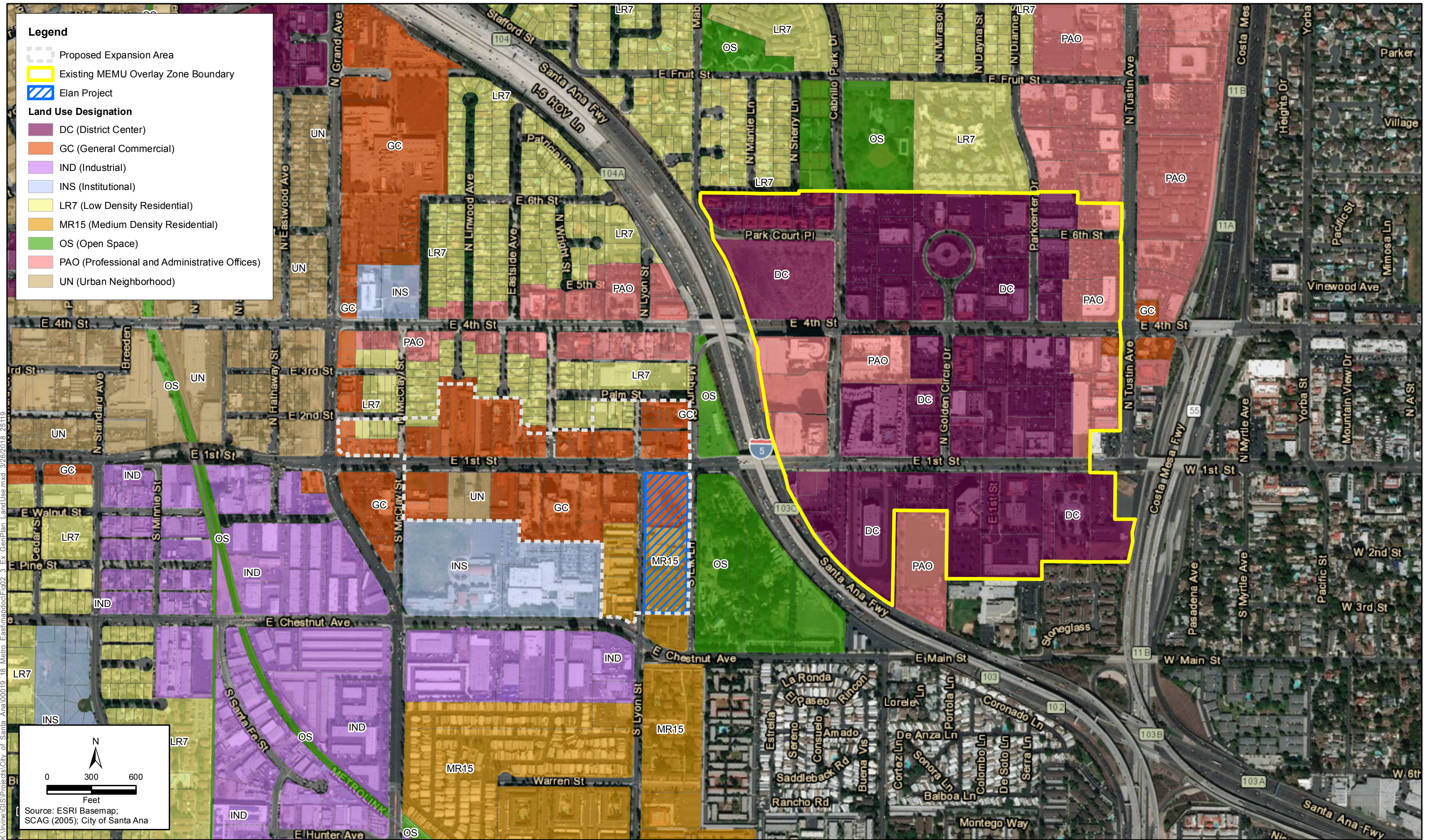


Figure 2-3
Existing General Plan Land Use Designations
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR

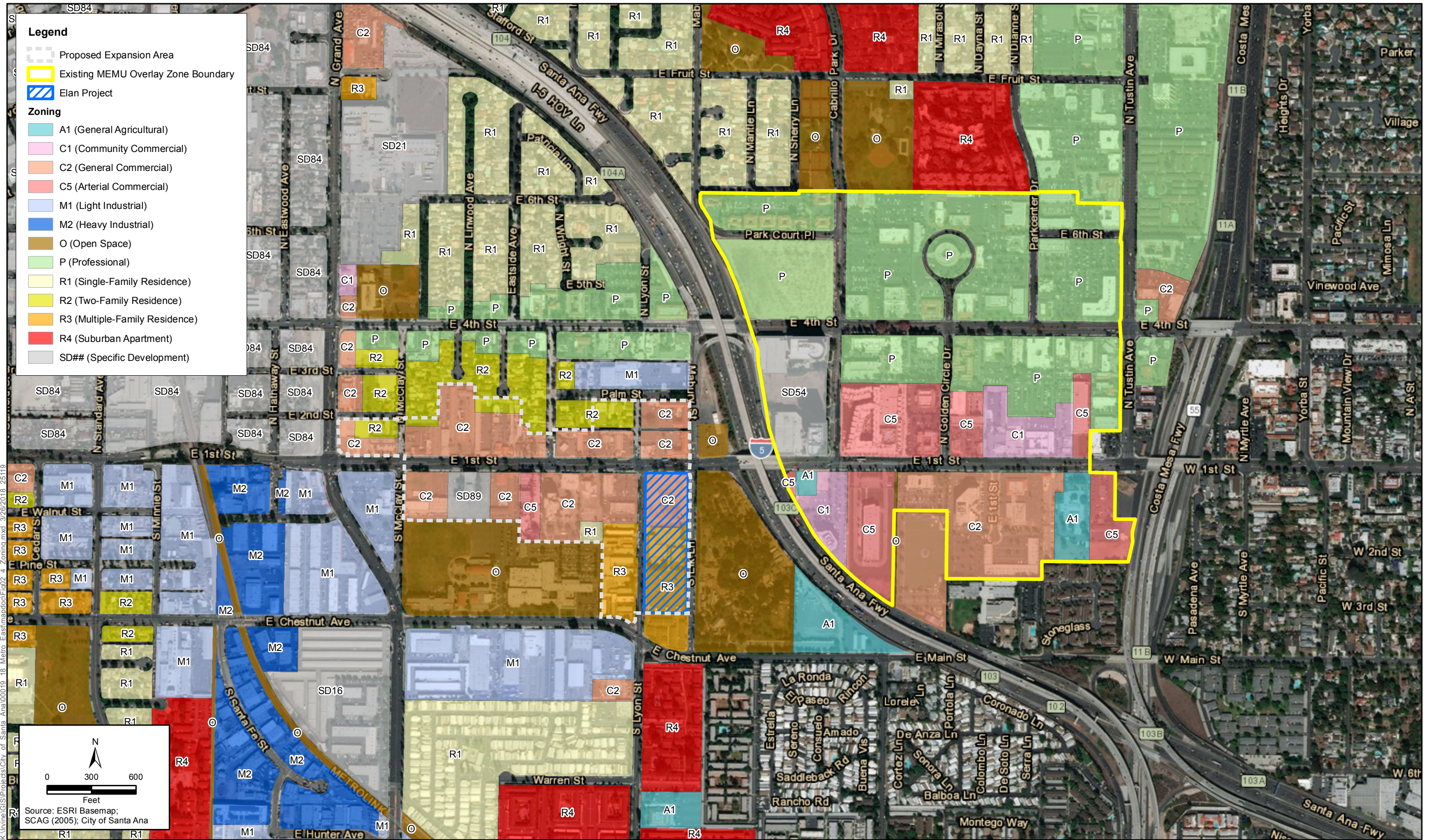


Figure 2-4
Existing Zoning
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR

I-5, First Street, Fourth Street, and the extension of Cabrillo Park Drive. Permitted uses include professional and business offices, support commercial and retail uses, and accessory uses.

- **SD-89 (AMCAL First Street Family Apartments Specific Development Plan):** Adopted in May 2016, this Specific Development Plan contains specific standards and regulations for the AMCAL First Street Family Apartments project. It was established to permit flexibility in site planning and design to respond to market conditions while ensuring high-quality development on the 2.15-acre site. Multiple-family dwellings and ancillary onsite community-serving or social service uses are permitted uses within this zone.

Surrounding Land Uses

The proposed Overlay Zone expansion area is surrounded by a variety of land uses and zoning districts. These include commercial, professional offices, industrial, educational, and low- and medium-density residential. Surrounding zoning designations also include the Transit Zoning Code (SD-84) to the west, Light Industrial (M-1) and Professional (P) to the north, Open Space (O) and I-5 to the east, and Suburban Apartment (R-4), O, and M-1 to the south. Figures 2-3 and 2-4 (previously referenced) show the existing land uses and zoning districts surrounding the project area in the expanded Overlay Zone.

2.2 Project Objectives

The overall objectives of the MEMU Overlay Zone are to encourage a more active commercial and residential community, provide an expanded economic base, maximize property sales tax revenues, improve the jobs/housing balance within the City, and provide for a range of housing options. Expansion of this Overlay Zone will extend the same objectives into the new area, and implementation of the Overlay Zone is intended to fulfill the following major objectives:

- Create an active, mixed-use urban village where it is possible to live, work, shop, and play all within a short walk of each other.
- Facilitate well-designed new mixed-use development projects that combine residential and nonresidential uses through innovative and flexible design solutions.
- Achieve the harmonious integration of new mixed-use development within the existing fabric of the mid-rise and high-rise office environment.
- Encourage urban form and architecture that incorporate contemporary design styles and solutions as well as the use of sustainable building and site design concepts such as green buildings, energy-conserving building materials, and landscaping designs that reduce water consumption.
- Create highly amenitized streetscapes that provide items such as landscaping, street furniture, niche or linear parks, passive and active water features, public plazas and courtyards, public art, and public transportation shelters in a design that integrates the public realm with the private development and serves to create a distinct identity for the district.
- Provide for adequate buffering from the Santa Ana and Costa Mesa freeways.
- Create a highly integrated pedestrian system that provides for connectivity between the residential areas and public recreation amenities to the north and the Overlay Zone.

- Provide for active street life through the inclusion of dedicated pedestrian-oriented design and active uses on the ground floor at strategic locations.
- Provide for a mix of housing in order to encourage a continuum of living and a variety of household types.
- Ensure that each project includes exceptional site planning, unique architecture, high-quality building materials, extensive open space, indoor and outdoor amenities, and first-rate public improvements.
- Encourage parking solutions that provide for adequate parking to ensure the long-term quality of the project, but that are creative in their design thereby enhancing the area's urban form. Parking requirements are designed to create a level of scarcity that will discourage vehicle trips, increase pedestrian activity, and enhance the provision of high-quality building and site design.
- Facilitate project designs that encourage adequate amounts of retail or commercial space to service residents and/or employees within the development and the larger Overlay Zone.
- Allow for the development of varied residential types in a mixed-use configuration including, but not limited to, loft-style units, live/work units, attached row houses, and high-quality stacked flats.
- Provide adequate access for public safety services.
- Stimulate investment and reinvestment in the area through the provision of a comprehensive planning framework that facilitates private-market success.

2.3 Project Description

The proposed project includes expansion of the boundaries of the MEMU Overlay Zone, modification of development standards, development of a mixed-use multi-family residential and commercial project, an amendment to the existing General Plan, and an amendment to the existing zoning code. Each of these is described further below.

Modifications to MEMU Boundaries

An overlay zone is generally defined as a zone or district created for the purpose of conserving natural resources or promoting certain types of development. It is imposed over existing zoning districts and contains provisions that are applicable in addition to those contained in the underlying zoning district. The overall objectives of the MEMU Overlay Zone are to encourage a more active commercial and residential community, provide an expanded economic base, maximize property sales tax revenues, improve the jobs/housing balance within the City, and provide for a range of housing options. Creation of the MEMU Overlay Zone was also envisioned to allow the City to consider subsequent actions consistent with these updates in the General Plan and Land Use designations.

The proposed MEMU Overlay Zone expansion would add an additional 33.52 acres or approximately 48 parcels to the project area. The additional project area is shown in Figure 2-2 (previously referenced).

Development Capacity

The original (2007) MEMU Overlay Zone project included the following primary elements:

- A potential increase in City population of 11,102 residents
- A potential increase in the number of available residences within City limits by 5,551 units
- The potential development of 1,275,440 gross square feet (gsf) of commercial (retail and service) space, as well as 3,410,507 gsf of office space. This corresponds to a potential net increase of approximately 963,000 square feet (sf) of commercial space and 690,000 sf of office space.

No modifications to the MEMU Overlay Zone development capacity are proposed under the proposed project. Under the proposed project, the development capacity would remain the same; however, with expansion of the MEMU Overlay Zone boundaries, the developable area would be extended to include the expanded Overlay Zone area. The expansion of the MEMU Overlay district is expected to produce up to 1,888 residential units (3,776 residents) in the expansion area, a maximum of approximately 2,835,000 sf of building area, which includes 944,500 sf of non-residential square footage. The proposed project would create additional housing development opportunities that are consistent with opportunity sites identified in the City's 2014-2021 Housing Element.

Modification to Land Use Districts

The MEMU expansion project includes updating the allowable land uses to create additional housing opportunities pursuant to the City's 2014 Housing Element. The existing MEMU Overlay Zone allows development to occur in accordance with four separate district designations, as described below and shown on Figure 2-5 (Existing Overlay Zone Land Use Districts). The proposed addition to the MEMU area would apply the same district concepts, using only the Neighborhood Transitional and Active Urban districts. Also, the project proposes to change a portion of the Neighborhood Transitional District located in the northern portion of the existing MEMU Overlay Zone area between Cabrillo Park Drive and Park Center Drive to Village Center District. Figure 2-6 (Proposed Overlay Zone Land Use Districts) shows all of the proposed land use districts in the existing MEMU Overlay Zone area and expansion area.

Neighborhood Transitional District

The Neighborhood Transitional District is intended to continue to provide opportunities for development and act as a transition between the single-family residential to the north and the adjacent high-intensity Active Urban District. Designated for the lowest scale and the lowest intensity of uses in the Overlay Zone, this district limits development to residential, live/work, or office uses. These uses may combine office on the ground floor with residential above or in freestanding single-use buildings on the same site at between two and four stories in height. New development in this area would be designed to provide an appropriate interface with high levels of landscaping and design features that would minimize impacts on the adjacent single-family residential area to the north.

Active Urban

The Active Urban District is intended to continue to serve as the location for well-designed, high-rise, mixed-use developments in a highly urbanized environment that capitalizes on the exposure and access provided by two adjacent freeways, I-5 and SR-55, and two major arterials (First Street, Fourth Street, and Tustin Avenue), as well as its proximity to the Santa Ana Regional Transportation Center. Development in this district is envisioned to reflect signature architecture that reinforces the identity and character of Metro East as a vibrant urban village that serves as a regional employment and activity center. The Active Urban District would include major office, residential, commercial, hotel, and entertainment opportunities that are more intensive in scale and design than the adjacent Village Center. Developments in this district may combine office, commercial, and residential uses within one vertical mixed-use building with commercial on the ground floor and office or residential on the upper floors, or a mix of uses within freestanding buildings on the same site. Developments would be designed to showcase an amenity-enhanced environment that provides numerous open space opportunities within this urban environment for the enjoyment of residents, employees, and visitors, and to promote pedestrian connections between this district and the Village Center as well as Cabrillo Park located north of the Overlay Zone.

Village Center

The Village Center District is intended to continue to serve as the focal point and central gathering place within the Overlay Zone in well-designed, highly connected development sites and public spaces. This district would provide a high level of neighborhood identity and activity through its central location and its emphasis on creating a vibrant, attractive, and highly interconnected pedestrian environment. Opportunities would be provided for shopping, dining, recreation, entertainment, and services accessed by extensively landscaped, wide sidewalks that would allow free flow between jobs, housing, and commercial services, or opportunities for leisure walking within the Village Center. This district would provide commercial, office, and residential uses in the same building or on the same site in mid-rise buildings of between four and ten stories in settings that would provide open spaces, niches, and areas for gatherings and activities along streets, paseos, and interconnecting walkways that would link the Village Center to adjacent districts and nearby public parks north of the district.

Office

The Office District contains existing low- to high-rise office development along Tustin Avenue and adjacent to I-5. These properties were in place prior to establishment of the Overlay Zone and will retain their exclusive office zoning in order to promote and maintain a healthy balance between office, commercial, and residential land uses within the Overlay Zone.

Modification to MEMU Development Standards

The MEMU expansion project includes updating the development standards within the existing document. The current document allows residential land uses in the Neighborhood Transitional and Active Urban land use districts. Multiple-family residential and live/work developments are prohibited in the Office District, while live/work is the only residential land use permitted in the Village Center District. The project would update the MEMU document to remove these restrictions in order to allow residential developments in each of the four land use districts.



Figure 2-5
Existing Overlay Zone Land Use Districts
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR

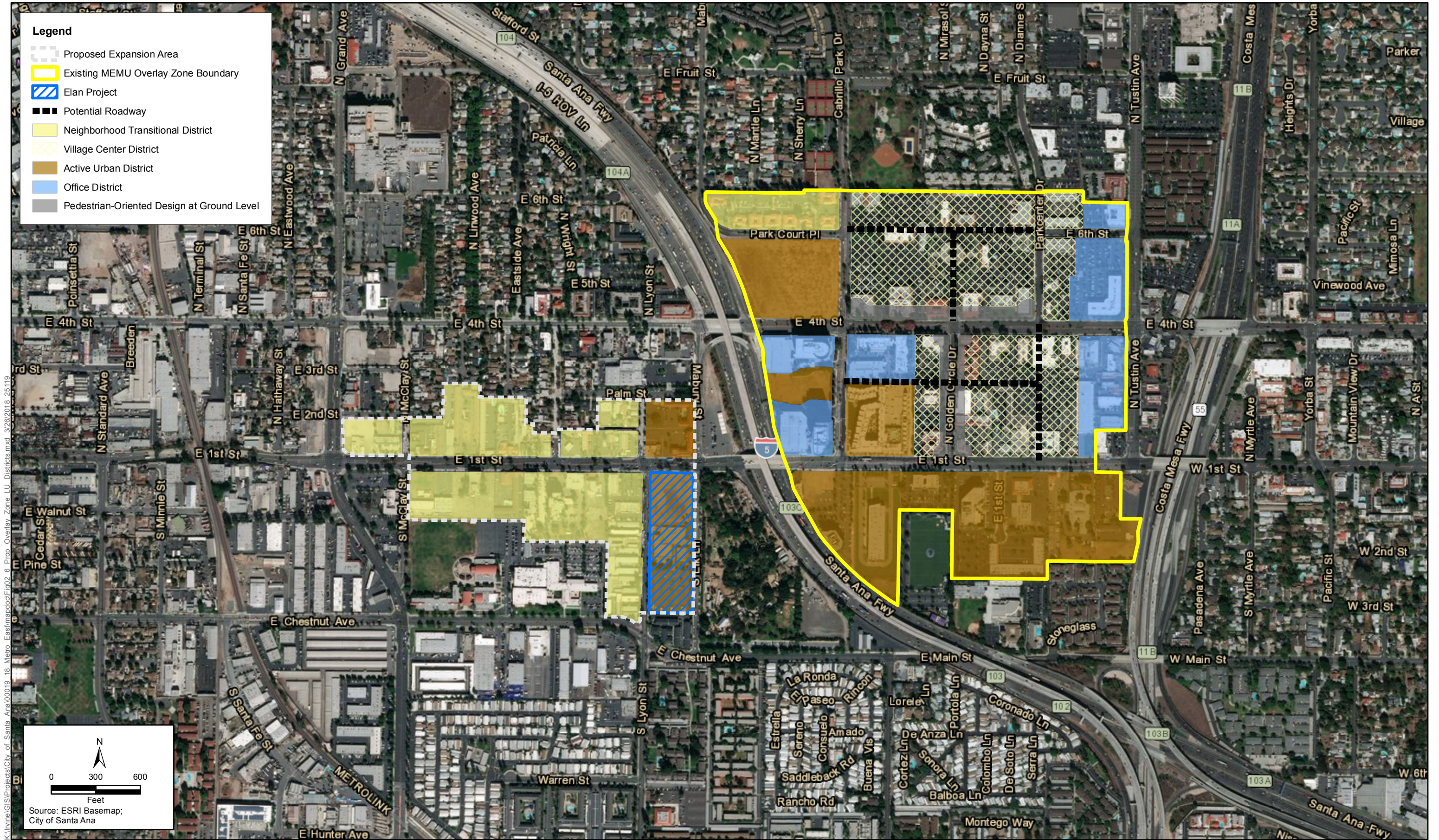


Figure 2-6
 Proposed Overlay Zone Land Use Districts
 Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR

The existing MEMU document also contains form-based design standards and design guidelines for new developments seeking to activate and build to the Metro East Mixed Use Overlay District (OZ-1) standards. The MEMU expansion project will undertake a comprehensive review of these development standards and design guidelines to identify components that require updating. Moreover, the project would update one or more of the land use districts, or create a fifth land use district, to facilitate the expansion of the OZ-1 designation in the westward MEMU expansion area along the First Street corridor. These updates are intended to facilitate infill development or redevelopment opportunities in the expansion area on First Street and to ensure that such developments are compatible with the surrounding land uses and existing development patterns. These updates would also incorporate changes to development, market demands, housing needs, and construction technology in the post-Great Recession market.

The draft MEMU Overlay Zone modifications are included in totality in Appendix A. Table 2-1 provides a summary of the proposed changes.

Table 2-1. Proposed Modifications to MEMU Overlay Zone

Current MEMU Standards	Proposed MEMU Standards
<p>Three stories maximum in Neighborhood Transitional District.</p>	<p>Four stories maximum in Neighborhood Transitional District.</p>
<p>Private/common open space required at 100 square feet per unit (sf/unit) in the Neighborhood Transitional, Village Center, and Active Urban districts.</p>	<p>Private/common open space required at 90 sf/unit in the Neighborhood Transitional, Village Center, and Active Urban districts.</p>
<p>Multiple-family residential uses are prohibited within the Village Center District.</p>	<p>Multiple-family residential uses are permitted by right within the Village Center District.</p>
<p>Churches are not currently identified as an allowable non-residential use in any district.</p>	<p>Churches uses will be identified as an allowable non-residential use in all districts, subject to a Conditional Use Permit</p>
<p>Front building setbacks are identified for each district.</p>	<p>Clarification of front building setback distance from a public or private street.</p>
<p>Parking requirements for stand-alone residential uses within the Neighborhood Transitional District are as required at 2.25 spaces per residential unit, inclusive of guest parking.</p>	<p>Parking requirements for stand-alone residential uses within the Neighborhood Transitional District are as required at 2.0 spaces per residential unit, inclusive of guest parking.</p>
<p>Parking requirements within the Village Center District for mixed-use developments with less than 10 percent of the gross floor area devoted to a commercial activity are required to provide a minimum of 2.0 spaces per residential or live/work unit inclusive of guest parking and any nonresidential uses.</p>	<p>Parking requirements for mixed-use developments with less than 10 percent of the gross floor area devoted to a commercial activity are required to provide a minimum of 1.8 spaces per residential or live/work unit inclusive of guest parking and any nonresidential uses.</p>
<p>Parking requirements within the Active Urban District for mixed-use developments with less than 10 percent of the gross floor area devoted to a commercial activity are required to provide a minimum of 2.0 spaces per residential or live/work unit inclusive of guest parking and any nonresidential uses.</p>	<p>Parking requirements for mixed-use developments with less than 10 percent of the gross floor area devoted to a commercial activity are required to provide a minimum of 1.8 spaces per residential or live/work unit inclusive of guest parking and any nonresidential uses.*</p>

Current MEMU Standards	Proposed MEMU Standards
Parking requirements within the Office District for office or other non-residential uses are as required by Division 3, of Article 15 , Off-Street Parking Requirements, SAMC.	Parking requirements within the Office District for office or other non-residential uses will be 1 space/400 sf .
*This modification is still under consideration by the City.	

Elan Mixed-Use Development

The proposed project includes redevelopment of the old Elks Club site into two mixed-use (residential and commercial) structures: one seven-story “wrap” building and one five-story building with two levels of underground parking. A site plan is shown in Figure 2-7 and architectural elevations are shown in Figures 2-8a through 2-8c.

The project includes 603 residential units and approximately 8,500 sf of commercial uses at the ground floor, and would include pools, spas, courtyards, public open space, fitness rooms, and other amenities for the residents. The project would result in a residential density of 93.75 du/ac, and the proposed development would be within the capacity established by the MEMU Overlay Zone. Underground parking would include 1,209 parking spaces with two access points from Elk Lane and two access points from Lyon Street. Construction would occur generally in a single phase, with completion of one building proceeding the other by a few months to facilitate staging.

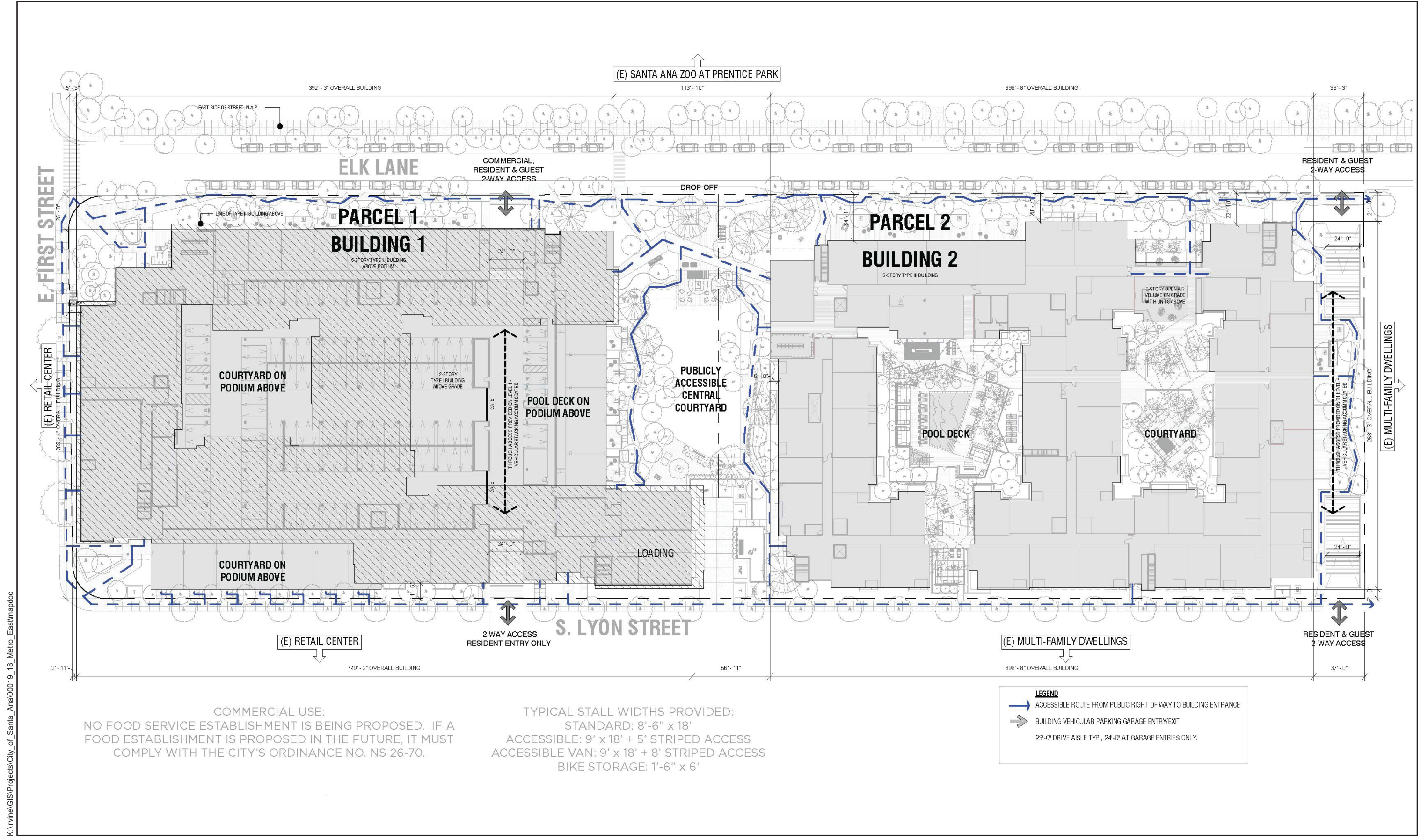
Required Discretionary Actions

General Plan Amendment

The General Plan will be amended concurrent with adoption of the expanded Overlay Zone to replace the existing General Plan land use designations with the MEMU land use designation. A General Plan amendment is needed to accomplish two primary objectives of the Overlay Zone: (1) to facilitate mixed-use development within the expanded area, and (2) to increase the development intensity within the expanded area as permitted within the Overlay Zone. Specifically, the Land Use Element Policy Plan, which includes the Land Use Map and Development Intensity Standards, will be amended to include the MEMU designation within the expanded area. The General Plan land use designations for the properties located in the expansion area will be changed to UN (Urban Neighborhood) and DC (District Center), the latter being more appropriate for properties located away from existing single-family land uses and closer to I-5.

In addition, a couple of properties along the western boundary within the existing MEMU boundary are proposed for a General Plan Amendment. These include the area in the northwest bounded by Mabury Street, East Sixth Street, East Park Court Place, and North Cabrillo Drive currently designated as District Center and the area located between I-5, Cabrillo Drive, East First Street, and East Fourth Street. Both of these areas are proposed to change their designations to Urban Neighborhood and District Center, respectively.

Additionally, this SEIR is being used to correct the General Plan land use designations for three residential properties outside the expansion area boundaries that are currently designated as General Commercial. These include two residences at the end of Linwood Avenue and a residence



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Figure 2-7
Elan Mixed-Use Development Site Plan
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR



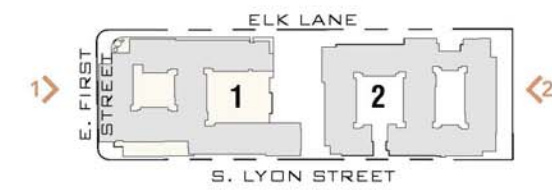
ELEVATION #1

MATERIAL LEGEND

- 1 STUCCO
- 2 FIBER CEMENT SIDING
- 3 GLASS RAIL
- 4 METAL PICKET RAIL
- 5 METAL BROW
- 6 CONCRETE COLUMNS
- 7 METAL FACIA CANOPY
- 8 CMU BLOCK
- 9 VINYL WINDOW
- 10 WINDOW WALL
- 11 STUCCO FRAMES
- 12 METAL SUN SHADE
- 13 WOOD RAILING



ELEVATION #2



KEY PLAN

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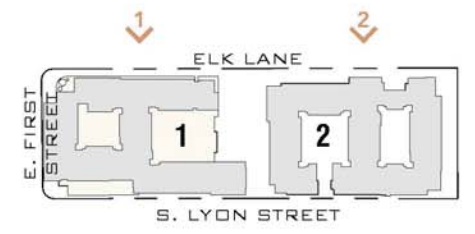


Figure 2-8a
Elan Mixed-Use Development North & South Elevations
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR



MATERIAL LEGEND

- 1 STUCCO
- 2 FIBER CEMENT SIDING
- 3 GLASS RAIL
- 4 METAL PICKET RAIL
- 5 METAL BROW
- 6 CONCRETE COLUMNS
- 7 METAL FACIA CANOPY
- 8 CMU BLOCK
- 9 VINYL WINDOW
- 10 WINDOW WALL
- 11 STUCCO FRAMES
- 12 METAL SUN SHADE
- 13 WOOD RAILING



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Figure 2-8b
Elan Mixed-Use Development East Elevation
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR



MATERIAL LEGEND

- 1 STUCCO
- 2 FIBER CEMENT SIDING
- 3 GLASS RAIL
- 4 METAL PICKET RAIL
- 5 METAL BROW
- 6 CONCRETE COLUMNS
- 7 METAL FACIA CANOPY
- 8 CMU BLOCK
- 9 VINYL WINDOW
- 10 WINDOW WALL
- 11 STUCCO FRAMES
- 12 METAL SUN SHADE
- 13 WOOD RAILING

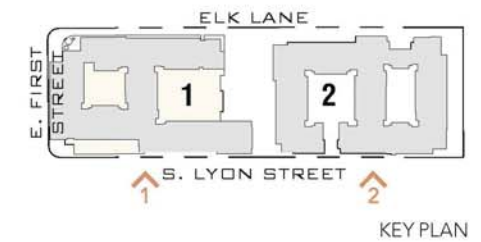
ELEVATION #1

BUILDING 1



ELEVATION #2

BUILDING 2



KEY PLAN

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Figure 2-8c
Elan Mixed-Use Development West Elevation
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR

outside the expansion area's northern boundary at Wright Street. All three of these properties are proposed to change to Low Density Residential (LR-7).

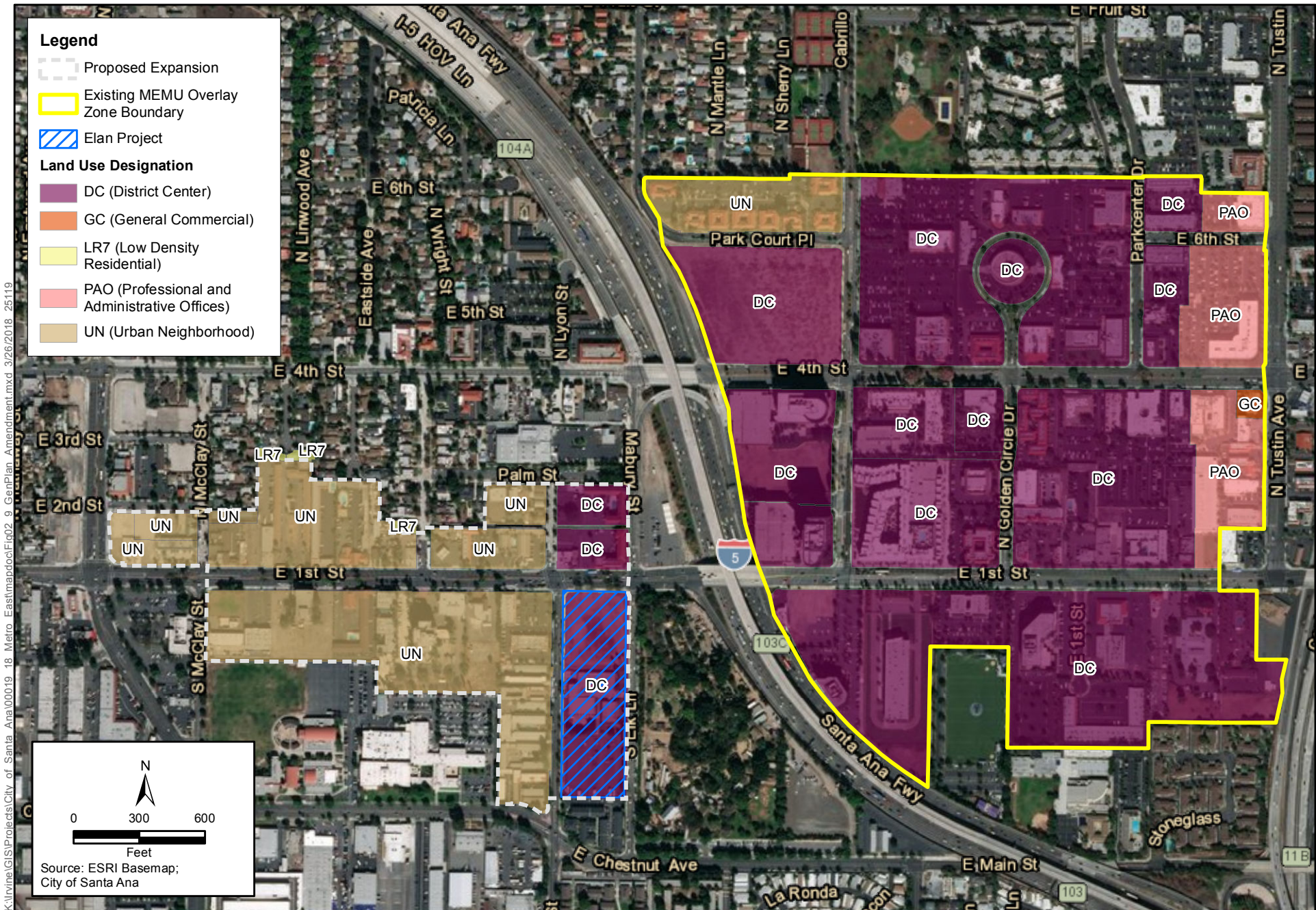
Figure 2-9 shows the proposed changes to the General Plan land use designations. The District Center land use designation has been described previously; the Urban Neighborhood land use designation is described as follows:

- **Urban Neighborhood (UN):** applies to primarily residential areas with pedestrian-oriented commercial uses, schools, and small parks. The Urban Neighborhood allows for a mix of residential uses and housing types, such as mid- to low-rise multiple family, townhouses, and single-family dwellings, with some opportunities for live/work, neighborhood-serving retail and service, public spaces and use, and other amenities. Either vertical or horizontal integration of uses is permitted based on zoning standards, with an emphasis on typing together the uses with pedestrian linkages and street frontages. Street connectivity is desirable, allowing for a high degree of walkability, transit options, and other forms of transportation including pedestrian and bicycle travel. The intensity standard for the Urban Neighborhood ranges from a FAR of 0.5 to 3.0, with residential density based on a combination of FAR and zoning development standards.

Zone Change

The Zoning Code and Zoning Map will be amended concurrent with the adoption of the expanded Overlay Zone to include the MEMU Overlay Zone to be offered in addition to the existing zoning for the expanded area. The MEMU expansion project proposes to apply the OZ-1 designation to the targeted properties along the First Street corridor until Grand Avenue. Changing the underlying zoning district designations of these properties is not proposed at this time. The extension of the OZ-1 designation west along First Street is intended to facilitate additional infill housing and mixed-use development opportunities, as referenced in the City's 2014-2021 Housing Element. Any issue not specifically covered in the Overlay Zone shall be subject to the provisions of the underlying zoning district specified in Chapter 41 of the Santa Ana Municipal Code. Interpretations may be made by the applicable review authority if not specifically covered in the City's existing regulations. As proposed, property owners shall have the option to develop to the provisions of the Overlay Zone at their discretion. They may also choose to develop to the existing underlying zone.

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Figure 2-9
General Plan Amendment
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR



Chapter 3

Environmental Setting

This chapter presents the environmental setting for the proposed project and surrounding areas. The setting is described as it relates to potential environmental effects associated with the proposed project. The existing setting is also shown in Figure 2-3. A discussion of the potential environmental impacts is provided in Chapter 4.

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3.1 Air Quality

Setting

Climate

Because climate conditions do not change over short periods and because the proposed project area is adjacent to the existing MEMU Overlay Zone (approximately 0.10 mile at its closest point), climate conditions described in the *City of San Ana Metro East Mixed-Use Overlay Zone Environmental Impact Report* (MEMU EIR) for the City and South Coast Air Basin (SCAB) continue to apply.

Pollutants of Concern

The pollutants of concern described in the MEMU EIR are still applicable to the proposed project. The federal and state governments have established National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS), respectively, for six criteria pollutants: ozone, lead (Pb), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and particulate matter (PM), which consists of PM less than or equal to 10 microns in diameter (PM₁₀) and PM less than or equal to 2.5 microns in diameter (PM_{2.5}). Ozone and NO₂ are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO₂, and Pb are considered local pollutants that tend to accumulate in the air locally. The primary pollutants of concern in the project vicinity are ozone, CO, and PM.

Existing Air Quality Conditions

The MEMU EIR established baseline air quality levels, which were based on air quality monitoring data collected at the Anaheim-Pampas Lane monitoring station between 2003 and 2005 (refer to page 4.2-8 in the MEMU EIR). Since then, the California Air Resources Board (CARB) has published more recent monitoring data and established new monitoring stations. The Anaheim-Pampas Lane monitoring station, approximately 7.8 miles northwest of the project site, remains the nearest monitoring station, reporting ozone and PM concentrations. However, the Anaheim-Near Road monitoring station, approximately 6.5 miles northwest of the project site, is now the nearest CO and NO₂ monitoring station. Data for SO₂ are unavailable because no stations monitor SO₂ in Orange County. Table 3.1-1 summarizes the levels of these pollutants over the most recent 3-year period from which complete data are available (2014–2016). Similar to the pattern shown for 2003–2005 in the MEMU EIR, monitored data from 2015–2017 show that ozone, PM₁₀, and PM_{2.5} standards were exceeded during the 3-year time period.

Table 3.1-1. Ambient Monitoring Data from the Anaheim-Pampas Lane and Anaheim-Near Road Monitoring Stations

Pollutant Standards	2014	2015	2016
<i>Ozone (O₃)</i>			
Maximum 1-hour concentration (ppm)	0.111	0.100	0.103
Maximum 8-hour concentration (ppm)	0.082	0.081	0.075
<i>Number of days standard exceeded^a</i>			
CAAQS 1-hour concentration (> 0.09 ppm)	2	1	2
CAAQS 8-hour concentration (> 0.070 ppm)	6	1	4
NAAQS 8-hour concentration (> 0.070 ppm)	6	1	4
<i>Sulfur Dioxide (SO₂)</i>			
No stations monitor SO ₂ in Orange County	—	—	—
<i>Carbon Monoxide (CO)</i>			
Maximum 8-hour concentration (ppm)	2.1 ^b	2.3	2.2
Maximum 1-hour concentration (ppm)	3.1 ^b	3.1	3.7
<i>Number of days standard exceeded^a</i>			
NAAQS 8-hour concentration (≥ 9 ppm)	0	0	0
CAAQS 8-hour concentration (≥ 9.0 ppm)	0	0	0
NAAQS 1-hour concentration (≥ 35 ppm)	0	0	0
CAAQS 1-hour concentration (≥ 20 ppm)	0	0	0
<i>Nitrogen Dioxide (NO₂)</i>			
State maximum 1-hour concentration (ppm)	0.079	0.070	0.075
State second-highest 1-hour concentration (ppm)	0.076	0.068	0.068
Annual average concentration (ppm)	27	25	23
<i>Number of days standard exceeded</i>			
CAAQS 1-hour concentration (0.18 ppm)	0	0	0
<i>Particulate Matter (PM₁₀)</i>			
National ^c maximum 24-hour concentration (µg/m ³)	85.0	59.0	74.0
State ^d maximum 24-hour concentration (µg/m ³)	84.0	59.0	*
National annual average concentration (µg/m ³)	26.8	25.5	27.5
State annual average concentration (µg/m ³) ^e	26.7	25.3	*
<i>Number of days standard exceeded^a</i>			
NAAQS 24-hour concentration (> 150 µg/m ³) ^f	0.0	0.0	0.0
CAAQS 24-hour concentration (> 50 µg/m ³) ^f	2	2	*
<i>Particulate Matter (PM_{2.5})</i>			
National ^c maximum 24-hour concentration (µg/m ³)	45.0	45.8	44.4
State ^d maximum 24-hour concentration (µg/m ³)	46.5	53.8	45.5
National annual average concentration (µg/m ³)	*	*	9.4
State annual average concentration (µg/m ³) ^e	16.1	14.8	9.4
<i>Number of days standard exceeded^a</i>			
NAAQS 24-hour concentration (> 35 µg/m ³) ^f	4	3	1

Pollutant Standards	2014	2015	2016
Source: California Air Resources Board 2018; U.S. Environmental Protection Agency 2017.			
Notes:			
ppm	= parts per million		
NAAQS	= National Ambient Air Quality Standards		
CAAQS	= California Ambient Air Quality Standards		
µg/m ³	= micrograms per cubic meter		
—	= data not available		
*	= insufficient data to determine the value		
a	An exceedance is not necessarily a violation.		
b	Data for CO taken from the Anaheim-Pampas Lane monitoring station because CO data were unavailable from the Anaheim-Near Road monitoring station in 2014.		
c	National statistics are based on standard conditions data and samplers, using federal reference or equivalent methods.		
d	State statistics are based on local conditions data, except in the South Coast Air Basin where statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.		
e	State criteria for ensuring that data are sufficiently complete for calculating valid annual averages and more stringent than the national criteria.		
f	Mathematical estimate of how many days the concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.		

Attainment Status

Since certification of the original MEMU EIR, the attainment status of Orange County has been updated. Although Orange County is still designated as an extreme nonattainment area for ozone, the County is now designated as a maintenance area for CO, NO₂, and PM₁₀ and a moderate nonattainment area for PM_{2.5}. The County is still designated as an attainment area for SO₂ and Pb. Table 3.1-2 summarizes the current attainment status of Orange County with regard to the NAAQS and CAAQS.

Table 3.1-2. Federal and State Attainment Status of Orange County

Pollutant	National Ambient Air Quality Standards	California Ambient Air Quality Standards
8-hour ozone ^a	Nonattainment (Extreme)	Nonattainment
CO	Maintenance (Serious)	Attainment
PM _{2.5}	Nonattainment (Moderate)	Nonattainment
PM ₁₀	Maintenance (Serious)	Nonattainment
NO ₂	Maintenance	Attainment
SO ₂	Attainment	Attainment
Pb	Attainment	Attainment

Sources: California Air Resources Board 2017; U.S. Environmental Protection Agency 2018a.

^a The attainment status under the revised 2015 standard is not yet available. This attainment status reflects the 2008 standard.

CO = carbon monoxide; PM_{2.5} = particulate matter less than or equal to 2.5 microns; PM₁₀ = particulate matter less than or equal to 10 microns; (NO₂) nitrogen dioxide; (SO₂) sulfur dioxide; (Pb) lead.

Regulatory Framework

The regulatory framework described in the original MEMU EIR also applies to this Subsequent EIR (SEIR) analysis. Since certification of the MEMU EIR, the U.S. Environmental Protection Agency (EPA) has revised several standards. On December 14, 2012, the EPA lowered the annual primary

PM2.5 standard from 15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to $12.0 \mu\text{g}/\text{m}^3$. The EPA also lowered the 8-hour ozone standard from 0.075 parts per million (ppm) in 2015 to 0.070 ppm.

The South Coast Air Quality Management District (SCAQMD) continues to be the agency principally responsible for comprehensive air pollution control at the project site. Since 2007, however, the district's Air Quality Management Plan (AQMP) has been updated. The 2016 AQMP is now the regional blueprint for achieving air quality standards and healthy air. It represents a comprehensive analysis of emissions, regional growth, and the impact of existing control measures (South Coast Air Quality Management District 2016).

3.2 Cultural Resources

This section describes the existing cultural resources that could be affected by the proposed project and the applicable laws and regulations related to cultural resources. For purposes of CEQA, cultural resources consist of intact built environment resources dating from the historic period (50 years or older) and archaeological resources, which include prehistoric resources (pre-contact with Europeans) and historic resources (post-contact Native American and Euroamerican). Significant cultural resources that meet one or more of the four criteria of eligibility for listing in the California Register of Historical Resources are referred to as *historical resources*. CEQA also uses the term *unique archaeological resources* to denote significant archaeological artifacts, objects, or sites that contain information needed to answer important scientific research questions, have a special and particular quality, or are directly associated with an important prehistoric or historic event or person (Section 21083.2(g)).

Cultural Resources Setting

Prehistoric Setting

The prehistoric setting of the project area divides the pre-contact cultural sequence into three periods. These periods are analytical constructs and do not necessarily reflect Native American views.

Scholarly theory suggests that the earliest human occupants of North America were highly mobile terrestrial hunters. Paleo-Indian cultures (e.g., Clovis, Folsom, Llano) dating to this period are often marked by archaeological assemblages of bone and stone technology. Over the last few decades, several North American archaeological sites and sets of human remains have been documented in various contexts that date to this Paleo-Indian Period (e.g., Erlandson et al. 2007). These discoveries have required researchers to reconsider the migratory and land-use strategies of early man within the Americas. Within California, Paleo-Indian assemblages are characterized by a wide but sparse distribution of isolated tools and caches, dated to between 12,000 and 10,000 years before present (BP) (Meltzer 2004, Dillon 2002:115, Byerly and Roberson 2015). Although no Paleo-Indian sites have been documented in the project area and vicinity, the absence of sites does not negate the possible presence of human occupants during this period.

Within the coastal plains of Southern California, at around 7500 BP, a technological shift toward processing small, hard seeds from plants associated with scrub and shrub plant communities with ground stone tools such as manos and metates began to appear. This period is referred to as the Millingstone Period for the abundant ground stone tools found at sites dating from this time until roughly 1500 BP. Groups continued to travel and follow game and plant resources as they became available seasonally (Moratto 2004).

Starting at around 1500 BP, the archaeological record reflects the emergence of the cultural patterns attributed to Shoshonean people, who moved into Southern California from the Great Basin and either assimilated with existing populations or displaced them. Archaeological sites attributed to the Late Prehistoric Period are characterized by a range of artifact types, including mortars and pestles, manos and metates, flaked stone tools, small projectile points, ceramics, basketry and other woven

textiles, and cremation sites. In the Late Prehistoric Period, the study area was occupied by Native American groups referred to as the Gabrielino.

Ethnographic Setting

What is now the City of Santa Ana was occupied during the Late Prehistoric Period by the Gabrielino (Kroeber 1925; Bean and Smith 1978a, 1978b). The term *Gabrielino* identifies those Native Americans who lived within the sphere of influence of the Spanish Mission San Gabriel. The overwhelming number of people here were of the same ethnic nationality and language group. Their territory included the entire Los Angeles Basin and extended from northern Orange County north to the San Fernando Valley in Los Angeles County and east to the Riverside and San Bernardino area. Large, permanent villages were established in the fertile lowlands along rivers and streams and in sheltered areas along the coast. Eventually, Gabrielino territory encompassed the greater Los Angeles Basin; the coastal regions from Topanga Canyon to the north to perhaps as far south as Aliso Creek; and the islands of San Clemente, San Nicholas, and Santa Catalina (Bean and Smith 1978b). The subsistence economy of the Gabrielino was one of hunting and gathering, and land use patterns developed around the intensive exploitation of a range of local resources with established semi-permanent camps and villages (Bean and Smith 1978a, McCawley 1996). A wide variety of tools and implements were employed by the Gabrielino to gather, collect, and process food resources. Coastal Gabrielino people had ready access to sea mammals, shellfish, and other marine resources in addition to terrestrial resources. Access to these resources for the Gabrielino people in the study area may have been more difficult because inter-village conflict was so frequent and intense that inland Gabrielino were frequently prevented from reaching the ocean for fishing and trading purposes (Englehardt 1931).

Historical Setting

The historical setting of Santa Ana included in Volume I, Section 4.4.1, of the MEMU EIR is incorporated by reference. It is supplemented with the following information to provide appropriate historical setting information for the Elan Project.

Fraternal Orders, the Santa Ana Elks, and the Santa Ana Elks Lodge

The following is a condensed discussion of fraternal orders, the Santa Ana Elks, and the Santa Ana Elks Lodge drawn from the more detailed historic context in the *Cultural Resources Technical Report for Santa Ana Elks Lodge, Santa Ana, Orange County, California*, prepared by ASM Affiliates Inc., February 2, 2018 (see Appendix C1).

The number of fraternal organizations in the United States multiplied rapidly after the Civil War, as veterans of the conflict and other American men sought fellowship outside of the military and the everyday marketplace. By 1907, the United States had over 300 fraternal organizations. Among the leading late nineteenth-century fraternal organizations were the Knights of Pythias, the Ancient Order of United Workmen, the Ancient Arabic Order of Nobles of the Mystic Shrine (or Shriners), the Knights of Honor, the Knights of Maccabees, and the Modern Woodmen of America. Fraternal order membership grew during the early twentieth century as well, and by 1930 there were 1,421 fraternal lodges in the United States. Their numbers declined as a result of both the economic depression of the 1930s, and men seeking new forms of leisure following the repeal of National Prohibition. After World War II, fraternal organizations experienced a brief renaissance, and many became more family oriented. After the Vietnam War, American fraternal organizations declined

rapidly as younger Americans sought other forms of fellowship and entertainment (ASM Affiliates 2018:13–14).

The Benevolent and Protective order of the Elks of the United States of America began as a New York association known as the “Jolly Corks,” founded in 1867 to circumvent “Blue Laws” that prevented saloons from operating on Sundays. It quickly became an organization that cultivated male fellowship and mutual aid among those employed in the theater business. The first satellite lodge was established in Philadelphia in 1871. It rapidly drew membership from outside the theater world. The number of Elks lodges exceeded 500 by 1900, with more than 1,600 by World War II. William L. Tubbs established the Santa Ana Elks Lodge 794 in 1902 along with his son Harry and C. M. Brown. The Santa Ana Elks helped establish other Elks lodges in the nearby communities of Long Beach, Anaheim, and Orange over the next two decades (ASM Affiliates 2018:14–15). As ASM Affiliates’ technical study explains:

Membership continued to grow during the 1920s, what many call the “golden age” of fraternities, and the lodge played a prominent role in Santa Ana social events. The Great Depression had an impact on many fraternal organizations, including the Elks of Santa Ana. Although the end of World War II caused a resurgence in membership, it coincided with a cultural change which emphasized the family unit over men’s clubs. Lodge 794 survived by changing with times, re-focusing on family events and including women and children in activities. (ASM Affiliates 2018:14–15)

Seeking a larger facility, the Santa Ana Elks hired the local architectural firm of Ramberg and Lowrey to design a new Mid-Century Modern-style building that the organization occupied beginning in 1961. Ramberg and Lowrey were a prolific Orange County architectural firm during the post-World War II decades. The number of Santa Ana Elks members continued to grow after the Vietnam War, and it permitted women to join in 1995. Santa Ana Elks membership reached a peak of 4,000 in 2000, but began to decline thereafter. Still, the Elks remain an active organization in Santa Ana (ASM Affiliates 2018:14–15).

Paleontological Setting

Santa Ana is located in the Santa Ana River floodplain. The floodplain consists of non-marine sediments from the Pleistocene and Holocene eras. These sediments are the product of Alluvial fan deposits from the Santa Ana Mountain foothills. Pleistocene deposits have yielded terrestrial mammal fossils dating to the ice age, including mammoth, bison, horse, camel, and sloth specimens, and also a variety of birds. Grading in such deposits commonly results in discovery of important Pleistocene fossils. Within the Overlay Zone Expansion Area and its vicinity, surface sediments are younger terrestrial Quaternary Alluvium. Significant vertebrate fossils are not typically present in the uppermost layers of such sediments. However, older Quaternary deposits of varying depth underlie the uppermost layers. The paleontological sensitivity of such sediments is considered high (Rivin and Sutton 2010:24–25, 29). Significant vertebrate fossils have been identified in these older deeper layers, as demonstrated in the paleontological records search results discussed below.

Existing Cultural Resources

In addition to the general prehistoric, ethnographic, and historic setting discussion provided above, records searches, Native American outreach, and a site visit were conducted to identify previously recorded cultural resources within a one-half mile radius of the MEMU Overlay Zone expansion area and the Elan Project area. The discussion below outlines the methodology used for these activities and summarizes the results.

Methodology

The effort to identify historical resources in the project area included a records search of previous cultural resource investigations and recorded sites, a paleontological resources file search, review of the City of Santa Ana Register of Historic Properties, outreach to the Native American Heritage Commission (NAHC) and Native Americans identified by the NAHC, and outreach to relevant historical societies and preservation groups.

Cultural Resources Records Search

MEMU Overlay Zone Expansion Area

On February 6, 2018, ICF conducted a cultural resources records search at the South Central Coastal Information Center (SCCIC). The SCCIC is the regional repository of cultural resources information and is housed at California State University, Fullerton. The records search covered a half-mile radius around the MEMU Overlay Zone expansion area. The purpose of the records search was to identify previously recorded archaeological sites and historic built-environment resources, and to identify cultural resources studies performed in or within a half-mile radius of the Overlay Zone expansion area.

A total of 31 studies have been conducted within a half-mile of the study area, only 2 of which intersect with or encompass portions of the MEMU Overlay Zone expansion area. A total of 69 previously recorded resources were identified within a half-mile radius of the expansion area, 1 of which is a historic period archaeological site approximately 1,500 feet northwest of the MEMU Overlay Zone expansion area.

The other 68 previously recorded cultural resources are built-environment resources, 1 of which (P-30-177622/1440 East First Street) is within the MEMU Overlay Zone expansion area. This resource is a four-story office building designed in the Modern style and constructed in 1962. The building was formally evaluated in 2015 and found ineligible for listing in the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), and the Santa Ana Register of Historic Properties. An ICF architectural historian reviewed the records search results along with the Santa Ana Register of Historic Properties and the associated map of those properties available at the City of Santa Ana Historic Preservation webpage (City of Santa Ana 2018). Together, the SCCIC records search results and Santa Ana Register of Historic Properties documentation show that no built resources within the MEMU Overlay Zone expansion area have been listed or determined eligible for listing in the NRHP, the CRHR, or the Santa Ana Register of Historic Properties individually or as contributors to a locally designated historic district.

Elan Project

The records search conducted by ICF on February 6, 2018, covered a half-mile radius from the MEMU Overlay Zone expansion area, which encompasses the Elan Project study area. The records search yielded no records of previously recorded cultural resources within the Elan Project area. A total of 31 studies have been conducted within a half mile of the MEMU Overlay Zone expansion area, 1 of which crosses the northern portion of the Elan Project study area. Additionally, 69 previously recorded resources were identified within a half-mile radius of the expansion area, 1 of which is a historic period archaeological site located over a half-mile to the northwest of the Elan Project study area. Another (P-30-177622/1440 East First Street) is located outside of the Elan Project study area. Together, the SCCIC records search results and Santa Ana Register of Historic

Properties documentation show that no built resources within the Elan Project study area have been listed or determined eligible for listing in the NRHP, the CRHR, or the Santa Ana Register of Historic Properties individually or as contributors to a locally designated historic district.

Paleontological Records Search

On January 26, 2018, ICF requested a paleontological file search of the project area from the Los Angeles County Museum of Natural History. The results of the search were reported on February 9, 2018. The search yielded no records of vertebrate fossil localities within the MEMU Overlay Zone expansion area, including the Elan Project area. However, three vertebrate fossil localities have been identified at distances ranging from between approximately 5.5 and 7.5 miles from the MEMU Overlay Zone expansion area, in the same types of older Quaternary sediments present below surface sediments within the MEMU Overlay Zone expansion area. A fossil specimen of sheep (*Ovis*) was found at LACM 1652, LACM 4943 has produced a horse (*Equus*) fossil from a depth of 8–10 feet below the surface, and LACM 7867 has yielded pocket gopher (*Thomomys*) specimens 25 feet below the surface.

Native American Outreach

On January 25, 2018, ICF requested a review of the sacred lands files from the NAHC. The NAHC responded on January 26, 2018, stating that the sacred lands files did not identify the presence of Native American cultural resources in the study area. The NAHC also provided a list of Native American individuals and organizations that may have knowledge of cultural resources in the project area. The MEMU Overlay Zone expansion area and the Elan Project area are located in the traditional ancestral territory of the Gabrielino. On January 30, 2018, outreach letters were sent to the 10 Gabrielino individuals identified by the NAHC. To date, one response has been received. Andrew Salas, Chairman of the Gabrieleno Band of Mission Indians-Kizh Nation, responded on February 6, 2018. Mr. Salas stated that the project area has potential for discoveries of cultural resources associated with the Gabrieleno Band of Mission Indians-Kizh Nation, and requested that one of their Native American monitors be present during any and all ground disturbances. Documentation of the Native American outreach can be referenced in Appendix C2.

Historical Resource Outreach

ICF conducted outreach to local historical societies and preservation groups to inquire about potential historical resources within the MEMU Overlay Zone expansion area. On January 30, 2018, ICF sent outreach letters to Preserve Orange County (Preserve OC), the Santa Ana Historical Preservation Society, and the Orange County Historical Society. Copies of this correspondence are included in Appendix C3. To date, two responses have been received. The Orange County Historical Society responded on February 2, 2018, stating that it had forwarded the outreach letter to Preserve OC. On January 31, 2018, Krista Nicholds of Preserve OC responded by stating that it is conducting a reconnaissance survey of the area, and suggesting that the Santa Ana Register of Historic Properties be checked for designated properties. Nicholds also asked when a reply from Preserve OC would be needed. An ICF historian/architectural historian responded to Nicholds and Preserve OC stating that a reply to the initial inquiry was sought within 2 weeks and that the Santa Ana Register of Historic Properties would be checked to determine if any designated properties are located within the Overlay Zone Expansion area. ICF's response also informed Preserve OC that mitigation for the expansion area would include provisions for evaluating potential historical resources at the project level. No other responses to the outreach have been received.

Results

Archaeological Resources

Overlay Zone Expansion Area

The MEMU Overlay Zone expansion area is a highly disturbed urbanized landscape. Although this area contained numerous orange groves prior to World War II, it is now almost entirely developed with buildings, structures, paved areas, landscaped areas associated with buildings, and graded vacant lots, most of which formerly contained buildings. One historic archaeological resource has been recorded along a railroad line approximately 1,500 feet northwest of the MEMU Overlay Zone expansion area. No prehistoric cultural resources have been previously recorded within the expansion area or within a half-mile radius of it. The MEMU Overlay Zone expansion area appears to have low prehistoric or historic archaeological resource sensitivity, though it is possible that deeper cultural deposits could be present below surface sediments.

Elan Project

The Elan Project area contains no previously recorded prehistoric cultural resources or historic archaeological resources. The Elan Project area has a highly disturbed surface and contains a paved parking lot, substantial buildings with associated landscaping, and a graded vacant lot that formerly contained a substantial building. One historical archaeological resource has been recorded along a railroad line over a half mile northwest of the Elan Project area. No prehistoric cultural resources have been previously recorded within the Elan Project area or within a half-mile radius. The Elan Project area appears to have low prehistoric or historic archaeological resource sensitivity, though it is possible that deeper cultural deposits could be present below surface sediments.

Historic Built Environment Resources

MEMU Overlay Zone Expansion Area

The records search and other research indicated that no built environment resources in the MEMU Overlay Zone expansion area have been previously listed or determined eligible for listing in the NRHP, the CRHR, or the City of Santa Ana Register of Historic Properties. The expansion area does contain buildings that have reached the 50-year age threshold for historical resource consideration, and that have not been evaluated for the NRHP, the CRHR, or the City of Santa Ana Register of Historic Properties. Therefore, the expansion area contains properties that have potential to be considered historical resources under CEQA. One resource over 50 years of age within the MEMU Overlay Zone expansion area is also within the Elan Project study area. As discussed in more detail below, that resource has been evaluated as a potential historical resource under CEQA to determine if it would be subject to impacts from the Elan Project.

Elan Project

The records search and other research indicated that no built environment resources in the MEMU Overlay Zone expansion area have been previously listed or determined eligible for listing in the NRHP, the CRHR, or the City of Santa Ana Register of Historic Properties. One built environment resource 50 years of age or older, the Santa Ana Elks Lodge at 212 Elk Lane, is within the Elan Project study area. The lodge facility was constructed in 1960 and designed in the Mid-Century Modern style by the architecture firm of Ramberg and Lowrey.

An ASM Affiliates, Inc. architectural historian evaluated the Santa Ana Elks Lodge property as part of its *Cultural Resources Technical Report for the Santa Ana Elks Lodge, Santa Ana, Orange County, California* (Appendix C1). The evaluation found the property significant under CRHR Criterion 1, for its association with the Santa Ana Elks, with a 1960–1968 period of significance. The lodge is the only remaining representation of the Santa Ana Elks, a chapter of an important organization in the social history of fraternal organizations in the United States. The evaluation also found the property eligible for the CRHR under Criterion 3, with a 1960 period of significance. The Santa Ana Elks Lodge building embodies distinctive characteristics of Mid-Century Modern architecture, and it also has significance as a noteworthy example of the work of Ramberg and Lowry, an important firm in the architectural history of Orange County. As a resource eligible for listing in the CRHR, the Santa Ana Elks Lodge is a historical resource for the purposes of CEQA. The property retains sufficient historical integrity to convey its significance.

ASM Affiliates also found the Elks Lodge property eligible for listing in the Santa Ana Register of Historic Properties under Criteria 1, 2, 4, and 6. The lodge exhibits distinguishing characteristics of Mid-Century Modern architecture under Criterion 1 and is the work of a notable local architecture firm under Criterion 2. Under Criterion 4 the Elks qualify as a renowned organization and the Lodge functioned as an important local center for social, cultural, and economic activity during the 1960s. As the home of a fraternal organization, the Santa Ana Elks Lodge qualifies under criterion 6 as a local example of a formerly common business or use that is now rare.

Paleontological Resources

MEMU Overlay Zone Expansion Area

As noted above, the results of the paleontological records search yielded no records of vertebrate fossil localities within the MEMU Overlay Zone expansion area. However, three vertebrate fossil localities have been identified at distances ranging from between approximately 5.5 and 7.5 miles from the MEMU Overlay Zone expansion area. One of these localities produced a fossil specimen at 8–10 feet. The older Quaternary sediments that have produced fossils at those three localities are present below the younger terrestrial Quaternary sediments within the MEMU Overlay Zone expansion area. The paleontological sensitivity of the expansion area is considered high (Rivin and Sutton 2010:29).

Elan Project

Because the Elan Project area is within the MEMU Overlay Zone expansion area, its paleontological sensitivity is also considered high.

Regulatory Setting

The regulatory framework described in the MEMU EIR for cultural resources also applies to this SEIR analysis. Since certification of the MEMU EIR, legislation has been passed that requires tribal consultation and creates a new CEQA resource category. This legislation—Assembly Bill 52 (AB 52)—is described below.

State

Assembly Bill 52

On September 25, 2014, California Governor Jerry Brown AB 52 into law; the bill amended Public Resources Code (PRC) Section 5097.94 and added Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to establish a new category of environmental resources that must be considered under CEQA: tribal cultural resources. Tribal cultural resources are defined as either (1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are included in the CRHR or a local register of historical resources, or that are determined to be eligible for inclusion in the CRHR; or (2) resources determined by the lead agency, at its discretion, to be significant based on the criteria for listing in the CRHR. For projects with applications filed on or after July 1, 2015, lead agencies are also required to consult with California Native American tribes that are traditionally and culturally affiliated with the geographic area of a proposed project if the tribe has written to the lead agency asking to be informed about proposed projects in that geographic area, and the tribe requests consultation, prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project.

3.3 Greenhouse Gas Emissions

This chapter presents the environmental setting for the MEMU Overlay Zone expansion area, Elan Project, and surrounding areas. The setting is described as it relates to potential environmental effects associated with the proposed project. A discussion of the potential environmental impacts is provided in Chapter 4. Note that a climate change and greenhouse gas (GHG) emissions analysis was not included in the *City of San Ana Metro East Mixed-Use Overlay Zone Environmental Impact Report (MEMU EIR)*. This analysis discusses the change in GHG emissions that would occur with implementation of the MEMU Overlay Zone expansion area and Elan Project compared with existing conditions.

Setting

Climate Change

The specific chemical properties of GHGs enable them to become well mixed within the atmosphere and transported over long distances. Consequently, unlike other resource areas that are concerned primarily with localized project impacts (e.g., within 1,000 feet of the project site), the global nature of climate change requires a broader analytic approach. The following subsections provide background information on global climate change and the principal GHGs associated with implementation of the project.

Pollutants of Concern

The GHGs listed in California law and the California Environmental Quality Act (CEQA) Guidelines (Health and Safety Code Section 38505(g); 14 California Code of Regulations [CCR] Section 15364.5) include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), ozone (O₃), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). Human activities contribute to the levels of most of these naturally occurring gases, which increase the amount of infrared radiation absorbed by the atmosphere, thereby enhancing the greenhouse effect and amplifying the warming of Earth (Intergovernmental Panel on Climate Change [IPCC] 2014). The primary GHGs associated with the project are CO₂, CH₄, and N₂O. HFCs, PFCs, and sulphur hexafluoride (SF₆) are associated primarily with industrial processes and, thus, are not discussed herein.

Existing Greenhouse Gas and Climate Change Conditions

Generally, GHG emissions are quantified and presented in terms of metric tons of CO₂ equivalent (CO₂e) emitted per year, defined by the GHG's global warming potential (GWP). The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO₂e. The GWP of CO₂ is, by definition, 1. The GWP values used in this report are based on the IPCC Fourth Assessment Report (AR4) and United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines, defined in Table 3.3-1 (IPCC 2007). The AR4 GWP values are used in the California Air Resources Board's (CARB's) California inventory and *First Update to the AB 32 Scoping Plan* (CARB 2014).

Table 3.3-1. Lifetime, Global Warming Potential, and Abundance of Several Significant GHGs

Gas	Global Warming Potential (100 years)	Lifetime (years) ¹	Atmospheric Abundance
CO ₂ (ppm)	1	50–200	400
CH ₄ (ppb)	25	9–15	1,834
N ₂ O (ppb)	298	121	328

¹ Defined as the half-life of the gas.

Definitions: ppm = parts per million; ppb = parts per billion.

Sources: Myhre et al. 2013; Blasing 2016; IPCC 2007

GHG Emissions Sources

More than 97 percent of GHG emissions in the U.S. result from burning fossil fuels. Although many nations, including the U.S., regularly monitor and report GHG emissions, federal legislation to reduce global emissions has not been adopted, although it is the subject of much debate. Many states, including California, as a prominent leader, have passed legislation to reduce GHG emissions. California's GHG regulatory framework is discussed in the *Regulatory Framework* section, below.

GHG inventories are quantifications of all GHG emissions and sinks within a selected physical and/or economic boundary. GHGs can be inventoried on a large scale (i.e., for global and national entities) or a small scale (i.e., for a specific building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources.

U.S. Greenhouse Gas Emissions Inventory

The U.S. Environmental Protection Agency (EPA) estimates that total U.S. GHG emissions in 2016 amounted to 6,546 million metric tons (MMT) of CO₂e, which represents a 2.8 percent increase from 1990 but a 2.0 percent decrease from 2015. The largest contributors to these GHG emissions in 2016 were transportation (29 percent), electricity generation (28 percent), and the industrial sector (22 percent). Emissions in the electricity generation, transportation, residential, commercial, and industrial sectors consist primarily of CO₂, while emissions from agriculture consist predominantly of CH₄ and N₂O. In general, industrial and electrical power emissions in the U.S. have declined over the last decade, while emissions from transportation have grown steadily (EPA 2018b). U.S. GHG emissions are responsible for approximately 15 percent of total global CO₂ emissions (Boden et al. 2017).

California Greenhouse Gas Emissions Inventory

In 2015, total California GHG emissions were estimated to be 440 MMTCO₂e. The transportation sector accounted for approximately 39 percent of total emissions, followed by the industrial sector (23 percent), electricity generation (19 percent), commercial and residential sources (11 percent), and agriculture (8 percent) (CARB 2017a).

Annual statewide GHG emission inventories provide an important tool for establishing historical emission trends and tracking California's progress toward achieving the state's established GHG reduction goals. Over the period of 2000 to 2015, California's per capita GHG emissions have decreased, from a peak of 14 metric tons of CO₂e per person to 11 metric tons of CO₂e per person in 2015, a 19 percent decrease (CARB 2017b).

City of Santa Ana Greenhouse Gas Inventory

In 2008, total community-wide GHG emissions in Santa Ana were approximately 2 MMTCO₂e, or 5.5 metric tons of CO₂e per person. The transportation and land use sector accounted for approximately 48 percent of total emissions, followed by commercial/industrial energy use with approximately 29 percent, residential energy use with 13 percent, solid waste generation with 3 percent, water use with 2 percent, and wastewater with 1 percent. The City has established a goal to reduce community-wide emissions 15 percent below 2008 levels by 2020 and 30 percent below 2008 levels by 2035. The City's Climate Action Plan (CAP) includes several measures to reach these goals. The measures address emissions associated with transportation and land use, energy, solid waste, water, and wastewater (City of Santa Ana 2015).

Regulatory Framework

As discussed previously, a climate change and GHG emissions analysis was not included in the MEMU EIR. Since certification of the MEMU EIR, various regulations have been adopted to reduce GHG emissions and combat climate change at the federal, state, and local level.

Federal Regulations

There is currently no federal overarching law related specifically to climate change or the reduction of GHG emissions. During the Obama administration, EPA had been developing regulations under the Clean Air Act (CAA), pursuant to EPA's authority under the CAA.¹ There have also been settlement agreements among EPA, several states, and nongovernmental organizations to address GHG emissions from electric generating units and refineries. In addition, EPA issued an Endangerment Finding and a Cause or Contribute Finding. EPA has also adopted a Mandatory Reporting Rule and Clean Power Plan. Under the Clean Power Plan, EPA issued regulations to control CO₂ emissions from new and existing coal-fired power plants. However, on February 9, 2016, the Supreme Court issued a stay of these regulations pending litigation. Current EPA Administrator Scott Pruitt has also signed a measure to repeal the Clean Power Plan. The fate of the proposed regulations is uncertain given the change in federal administrations and the pending deliberations in federal courts.

State Regulations

California has adopted statewide legislation to address various aspects of climate change and GHG emissions mitigation. Much of this legislation establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. The governor of California has also issued several executive orders (EOs) related to the state's evolving climate change policy. Of particular importance are Assembly Bill (AB) 32 and Senate Bill (SB) 32, which outline the state's GHG reduction goals for achieving 1990 emissions levels by 2020 and a 40 percent reduction below 1990 emissions levels by 2030.

In the absence of federal regulations, control of GHGs is generally regulated at the state level and typically approached by setting emissions reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans. Summaries of key policies, legal cases, regulations, and legislation at the state level that are relevant to the project are provided below.

¹ In *Coalition for Responsible Regulation, Inc., et al. v. EPA*, the United States Court of Appeals upheld EPA's authority to regulate GHG emissions under the CAA.

Assembly Bill 1493—Pavley Rules (2002, Amendments 2009, 2012 rulemaking)

Known as *Pavley I*, AB 1493 standards are the nation's first GHG standards for automobiles. AB 1493 required CARB to adopt vehicle standards that lowered GHG emissions from new light-duty autos to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (referred to previously as *Pavley II*, now referred to as the *Advanced Clean Cars* measure) has been proposed for vehicle model years 2017–2025. Together, the two standards are expected to increase average fuel economy to roughly 54.5 miles per gallon by 2025.

Executive Order S-3-05 (2005)

EO S-3-05 asserted that California is vulnerable to the effects of climate change. To combat this concern, the order established the following GHG emissions reduction targets:

- 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.

EOs are legally binding only on state agencies. Accordingly, EO S-3-05 guides state agencies' efforts to control and regulate GHG emissions but has no direct, binding effect on local government or private actions. The secretary of the California Environmental Protection Agency (CalEPA) is required to report to the governor and state legislature biannually regarding the impacts of global warming on California, mitigation and adaptation plans, and progress made toward reducing GHG emissions to meet the targets established in this EO.

Assembly Bill 32—California Global Warming Solutions Act (2006)

AB 32 codified the state's GHG emissions target by requiring the state's global warming emissions to be reduced to 1990 levels by 2020. Since being adopted, CARB, the California Energy Commission (CEC), the California Public Utilities Commission (CPUC), and the Building Standards Commission have been developing regulations to help meet the goals of AB 32 and EO S-03-05. The AB 32 Scoping Plan identifies specific measures to reduce GHG emissions to 1990 levels by 2020. It also requires CARB and other state agencies to develop and enforce regulations and other initiatives for reducing GHG emissions. Specifically, the AB 32 Scoping Plan articulates a key role for local governments, recommending they establish GHG emissions reduction goals for both municipal operations and the community consistent with those of the state.

On May 22, 2014, CARB approved the *First Update to the AB 32 Scoping Plan*, which includes both a 2020 element and a post-2020 element. The 2020 element addresses progress made to reach near-term goals, including state, regional, and local initiatives; the post-2020 element defines the long-term strategy for meeting the 2050 GHG goals, consistent with those set forth in EO B-30-15.

On December 14, 2017, CARB approved the *2017 Climate Change Scoping Plan Update*, which is the proposed strategy for achieving California's 2030 GHG emissions target. In addition to building on established programs, such as cap-and-trade regulation, and the low-carbon fuel standard (LCFS), the update addresses, for the first time, GHG emissions related to agriculture and forestry in California.

Executive Order S-01-07—Low-Carbon Fuel Standard (2007)

EO S-01-07, issued on January 18, 2007, requires (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 and (2) that a LCFS for transportation fuels be established in California. CARB approved the LCFS on April 23, 2009, and the regulation became effective on January 12, 2010 (California Air Resources Board 2016). The U.S. District Court for the Eastern District of California ruled in December 2011 that the LCFS violates the Commerce Clause of the U.S. Constitution. CARB appealed this ruling in 2012, and on September 18, 2013, the Ninth U.S. Circuit Court of Appeals upheld the LCFS, finding that the program does not violate the Commerce Clause and remanding the case to the Eastern District.

Senate Bill SB 375 (Steinberg) (2008)

SB 375 requires regional transportation plans, developed by Metropolitan Planning Organizations (MPOs), to incorporate a "sustainable communities strategy" (SCS) in their regional transportation plans that will achieve the GHG emissions reduction targets set by CARB, which finalized the regional targets in February 2011. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. However, those provisions will not become effective until an SCS is adopted. The final targets require the Southern California Association of Governments (SCAG) to identify strategies that reduce per capita GHG emissions from passenger vehicles by approximately 8 percent by 2020 and 13 percent by 2035 over base year 2005. SCAG adopted the *2016 Regional Transportation Plan and Sustainable Communities Strategy*, which incorporates the SCS, on April 7, 2016.

Senate Bills 1078, 107, and 2—Renewables Portfolio Standard (2011)

SBs 1078 (2002), 107 (2006), and 2 (2011), California's Renewables Portfolio Standard (RPS), obligate investor-owned utilities, energy service providers, and Community Choice Aggregators to procure additional retail sales per year from eligible renewable sources, with the long-range target of procuring 33 percent of retail sales from renewable resources by 2020. The CPUC and CEC are jointly responsible for implementing the program.

California Energy Efficiency Standards for Residential and Nonresidential Buildings—Green Building Code (2011), Title 24 Update (2014)

California has adopted aggressive energy efficiency standards for new buildings and has been continually updating them for many years. In 2008, the California Building Standards Commission adopted the nation's first green building standards, which include standards for many other built environment aspects apart from energy efficiency. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code (24 CCR). Part 11 established voluntary standards, including standards regarding planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants, that became mandatory in the 2010 edition of the code. The current energy efficiency standards were last adopted in 2016 and took effect on January 1, 2017. The standards are to be updated periodically in the future, with the next update planned for 2019.

Senate Bill 350—De Leon (Clean Energy and Pollution Reduction Act of 2015)

SB 350 was approved by the California legislature in September 2015 and signed by Governor Brown in October 2015. Its key provisions require the following by 2030: (1) a renewables portfolio standard of 50 percent and (2) a doubling of energy efficiency (electrical and natural gas) by 2030, including improvements to the efficiency of existing buildings. These mandates will be implemented by future actions of the CPUC and CEC.

Senate Bill 32 (2016)

SB 32 (2016) requires CARB to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 level by 2030, consistent with the target set forth in EO B-30-15. CARB adopted the 2017 Climate Change Scoping Plan Update in November 2017 to meet the GHG reduction requirement set forth in SB 32. It proposes continuing the major programs of the previous scoping plan, including cap-and-trade regulation; LFCS; more efficient cars, trucks, and freight movement; the RPS; and reduced CH₄ emissions from agricultural and wastes. The Scoping Plan Update also addresses, for the first time, GHG emissions from natural and working lands in California.

State CEQA Guidelines

The State CEQA Guidelines require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the guidelines emphasize the necessity to determine potential climate change effects of a project and propose mitigation as necessary. The guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds but require preparation of an EIR if “there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with adopted regulations or requirements” (Section 15064.4).

State CEQA Guidelines Section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, which may include measures in an existing plan or mitigation program for the reduction of emissions required as part of a lead agency’s decision; incorporation of project features, a project design, or other measures into a project to substantially reduce energy consumption or GHG emissions; off-site measures, including offsets that are not otherwise required, to mitigate a project’s emissions; and measures that sequester carbon or carbon-equivalent emissions.

Regional

Southern California Association of Governments

SCAG is the regional planning agency for Orange, Los Angeles, Ventura, Riverside, San Bernardino, and Imperial Counties. SCAG addresses regional issues related to transportation, the economy, community development, and the environment. SCAG is the federally designated MPO for the majority of the Southern California region and the largest MPO in the nation. As required by federal and state law, SCAG develops plans pertaining to transportation, growth management, hazardous waste management, housing, and air quality. SCAG’s 2016–2040 Regional Transportation Plan (RTP)/SCS includes commitments to reduce emissions from transportation sources to comply with SB 375. Goals and policies in the 2016–2040 RTP/SCS to reduce GHG emissions include increasing density in proximity to transit stations, supporting mixed-use development, and encouraging active transportation. The RTP/SCS must conform to the federal CAA.

Local

South Coast Air Quality Management District

The AB 32 Scoping Plan does not provide an explicit role for local air districts with respect to implementing AB 32, but it does state that CARB will work actively with air districts in coordinating emissions reporting, encouraging and coordinating GHG reductions, and providing technical assistance in quantifying reductions. The ability of air districts to control emissions (both criteria pollutants and GHGs) is provided primarily through permitting but also through their role as a CEQA lead or commenting agency, the establishment of CEQA thresholds, and the development of analytical requirements for CEQA documents.

The MEMU Overlay Zone is in Orange County, within the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). In 2008, SCAQMD released draft guidance regarding interim CEQA GHG significance thresholds (South Coast Air Quality Management District 2008). On December 5, 2008, the SCAQMD Governing Board adopted a staff proposal for an interim GHG significance threshold for stationary-source/industrial projects where SCAQMD is lead agency. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD formed a GHG Significance Threshold Working Group to further evaluate potential GHG significance thresholds. However, the Working Group has been inactive since 2011; presently, SCAQMD has yet to adopt a GHG significance threshold for land use development projects (e.g., residential/commercial projects).

City of Santa Ana Strategic Plan

Adopted in 2014, the City of Santa Ana Strategic Plan was the result of an extensive community outreach process. The plan established specific goals, objectives, and strategies to guide the City's major efforts. One of the key strategies identified calls for the City to complete a comprehensive update to its existing General Plan. The following goals and policies from the 2014 Strategic Plan, which are contained in the Community Health, Livability, Engagement, and Sustainability Element, are relevant to GHGs and applicable to the proposed project (City of Santa Ana 2014):

Goal 5.2: Expand opportunities for conservation and environmental sustainability

- Policy 2a: Complete the City's Climate Action Plan with measures to address water conservation, energy efficient buildings (City and community), and greenhouse gas emissions. Include as part of the plan an awareness, outreach, and education component.
- Policy 2b: Create performance measures to track the City's progress in implementing the Climate Action Plan and other "green" efforts citywide
- Policy 2c: Create a green building policy that incorporates sustainable concepts into residential and nonresidential uses; support demonstration projects and best practices.

City of Santa Ana Climate Action Plan

CARB encourages local governments to adopt a reduction goal for emissions from municipal operations and move toward establishing goals for community emissions that parallel the state's commitment to reducing GHG emissions (CARB 2008). State CEQA Guideline Section 15183.5 provides that a lead agency may analyze and mitigate significant effects of GHG emissions at a programmatic level (e.g., in a plan targeted to reduce GHG emissions). Subsequent projects may be able to tier off the environmental analysis for the CAP to determine that a project's incremental

contribution to the cumulative effect of GHG emissions is not cumulatively considerable so long as the project complies with the adopted plan and mitigation program.

The City of Santa Ana has developed a comprehensive CAP for the community. Adopted on December 15, 2015, the CAP includes a GHG emissions inventory as well as reduction targets (i.e., 15 percent of 2008 levels by 2020 and 30 percent of 2008 levels by 2035) for community-wide emissions. The CAP outlines GHG reduction measures for various sectors, including the transportation and land use, energy, and solid waste, water, and wastewater sectors. Reduction measures include developing residential nodes near retail and employment, implementing Title 24 energy efficiency standards for commercial and residential projects, installing solar photovoltaic systems on municipal buildings, and implementing AB 341, which will divert waste from landfills, thereby reducing landfill emissions (City of Santa Ana 2015).

Although it was determined that implementation of CAP emissions reduction measures would achieve the reduction target for 2020, the measures would fall short of achieving the City's 2035 target, as shown in Table 3.3-2. The City notes in its staff report that in coming years, as the CAP is reviewed and revised, measures will be implemented to achieve the 2035 target.² The CAP includes monitoring and a target for tracking progress, with re-inventorying at later dates.

A critical aspect of having a CAP that fits the criteria within State CEQA Guidelines Section 15183.5 is to have reduction targets that align with statewide goals. The CAP's 2020 reduction target (i.e., below baseline emission levels) parallels the state's commitment to reducing GHG emissions under AB 32. However, it proceeds even farther by identifying targets that are specific to the City's geographic location as well as activity types and their associated sources. Therefore, because the CAP's 2020 target aligns with the statewide goal for 2020 (i.e., achieving 1990 levels), the CAP is consistent with AB 32. Through 2020, the CAP is a qualifying plan under State CEQA Guidelines Section 15183.5. However, although the City projects emissions and quantifies reductions to achieve the CAP's 2035 emissions target, the CAP does not achieve the requisite reductions. Moreover, the CAP's 2035 target does not fully align with statewide targets. For example, the statewide target in 2030 (as codified in SB 32) is 40 percent below 1990 levels and the 2050 target (not yet codified) is 80 percent below 1990 levels. The CAP's 2035 target of 1,371,602 metric tons of CO₂e is only 18 percent below the 2020 target of 1,665,516 metric tons CO₂e (i.e., 1990 levels). This level of reduction is not enough to achieve a fair share contribution toward the statewide targets of 40 percent and 80 percent below 1990 levels by 2030 and 2050, respectively. Therefore, because the City's CAP does not that align with statewide goals beyond 2020, the CAP is not consistent with the criteria within State CEQA Guidelines Section 15183.5 for the post-2020 period.

² Meeting minutes for the December 15, 2015, hearing are available at the City's website: <http://www.ci.santa-ana.ca.us/coc/granicus.asp>.

Table 3.3-2. City of Santa Ana Community Greenhouse Gas Inventory, Forecast (metric tons CO₂e)

Emission Sector	2008	2020	2035
<i>Baseline Inventory and Forecasts (BAU)</i>			
Transportation and Land Use	943,033	999,732	1,093,632
Commercial/Industrial/Residential Energy	815,515	854,935	860,435
Waste	55,193	58,645	59,309
Water	36,231	37,313	37,477
Wastewater	30,223	32,113	32,477
Other	79,236	82,526	84,420
TOTAL	1,959,431	2,065,264	2,167,750
CAP Target*	—	1,665,516	1,371,602
<i>Reductions</i>			
Existing Measures	—	51,898	76,796
CAP Measures plus State Mandates	—	366,998	654,294
Total Reductions in CAP	—	418,896	731,090
Total Reductions Needed to Hit Targets	—	399,748	796,148
Meet Target?	—	Yes	No
Source: Compiled from tables in City of Santa Ana Climate Action Plan			
*CAP Targets are 15 percent below 2008 levels by 2020 and 30 percent of 2008 levels by 2035			
BAU = business as usual			

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3.4 Hazards and Hazardous Materials

The hazardous materials information presented below for the Elan Project was based in part on the site-specific *Phase I Environmental Site Assessment Report* (Phase I ESA) prepared by Partner Engineering and Science, Inc. in May of 2016 (Appendix D) and a supplemental online environmental database search conducted via the State Water Resources Control Board's (SWRCB's) Geotracker and Department of Toxic Substances Control's (DTSC's) Envirostor websites by ICF in March of 2018 (SWRCB 2015, DTSC 2018). The hazardous materials setting for the MEMU Overlay Zone expansion area was also prepared using information found in both Geotracker and Envirostor.

Hazardous Materials Setting

MEMU Overlay Zone Expansion Area

The proposed MEMU Overlay Zone expansion area comprises 33.52 acres primarily zoned for commercial use, with minor residential use. Given the nature of residential land uses, they do not typically pose significant hazardous material risks. That is, such materials are not normally handled in significant amounts, and are typically related to household cleaning and maintenance. Furthermore, hazardous materials used for residential purposes are not typically classified as acutely hazardous.

The majority of existing zoning designations within the MEMU Overlay Zone expansion area are classified as C-2 – General Commercial (Figure 2-4). The C-2 designation allows for a variety of uses including retail and service uses, such as automobile sales, hospitals, schools, and automotive garages; equipment rental yards; metal shops; tire recapping; truck, trailer, tractor, and boat sales; research institutions; and laboratories. Some commercial sites store hazardous materials in storage tanks and in designated areas within the facility. Hazardous materials spills and leaks in vehicle repair and fueling locations can lead to hydrocarbon-impacted soil and groundwater. Improper storage and use of hazardous materials in dry cleaning facilities can lead to chlorofluorocarbon contaminated soil and groundwater and oils and fertilizers.

Hazardous Materials Database Results

A review of the Geotracker and Envirostor websites identified one site within the MEMU Overlay Zone expansion area within the Leaking Underground Storage Tank (LUST) Cleanup Site database: Unocal #4991 at 1601 East First Street. The violation involved a gasoline release to soil and groundwater. Contaminants of concern included total petroleum hydrocarbons – gasoline (TPH-g), benzene, and methyl-tert butyl ether (MTBE). Impacted media was identified during the excavation, removal, and replacement of fuel product dispensers, product piping, and spill containment sumps for underground storage tanks (USTs) located on site at the time. Remediation activities included groundwater monitoring and installation and operation of a Soil Vapor Extraction unit. The case was opened in February of 1997 and was granted closure in August of 2007 by the Santa Ana Regional Water Quality Control Board (RWQCB). There were no other sites identified within the MEMU Overlay Zone expansion area during the online database review.

Offsite Properties

As the analysis for the MEMU Overlay Zone expansion area is programmatic, the Geotracker and Envirostor research was conducted only within the expansion area's footprint (results shown above) and immediate surroundings. Once future development projects within the MEMU Overlay Zone expansion area are proposed, the individual sites would undergo a preliminary environmental site assessment (per mitigation measure **MM-OZ 4.6-2**, described in detail in Chapter 4, Section 4.4, under Impact 4.4-2) that would determine whether contamination from offsite properties is likely.

Offsite properties within immediate proximity to the MEMU Overlay Zone expansion area include two LUST sites (one approximately 200 feet from the southwest boundary at the intersection of East Frist Street and South Grand Avenue, and the other approximately 500 feet from the northwest boundary at the corner of North Grand Avenue and East Fourth Street) that were also part of the Underground Storage Tank (UST) permit database. Both sites were former gasoline stations and both have received closure by the Santa Ana RWQCB. The Raymond A Villa Fundamental Intermediate School (located adjacent to the MEMU Overlay Zone expansion area to the south) was identified as a School Investigation site under the DTSC with a status of *Referred: RCRA*, which identifies sites that, based on limited information available to DTSC, would be handled by DTSC's Hazardous Waste Management Program. The status of the Raymond A Villa Fundamental Intermediate School appears to be linked to the historic activities conducted by the former EECO Inc. site. The former EECO Inc. site was located in what is now the Raymond A Villa Fundamental Intermediate School and the Santa Ana School District building, just south of the MEMU Overlay Zone expansion area. In 2010, DTSC (under the EECO Inc. name) indicated that while there was impacted groundwater on or adjacent to the site, contaminant levels were only in concentrations slightly above regulatory criteria (U.S. Environmental Protection Agency's Maximum Contaminant Levels) for drinking water quality and not deemed to be a significant risk to the site or nearby properties. At the time, the contaminant plume was deemed stable and final groundwater remediation would be achieved through natural attenuation. However, in 2014, DTSC determined that groundwater contaminant concentrations were not decreasing and recommended active remediation be conducted on site (State Water Resources Control Board 2015). No subsequent data was available.

EECO Inc. was also identified as a hazardous waste facility and listed as a Cleanup Program Site. The RWQCB granted closure under the Cleanup Program Site in 1985 for copper impacted soil and groundwater (State Water Resources Control Board 2015).

Elan Project

The central portion of the Elan Project site is currently occupied by the Santa Ana Elks Lodge building. The northern portion of the property is currently undeveloped vacant land, which was historically occupied by a hotel. According to the site-specific 2016 Phase I ESA, the site was formerly agricultural/residential as early as 1938, and was developed with the Santa Ana Elks Lodge in 1960 and the Saddleback Inn on the northern portion of the site in 1963. The Saddleback Inn was consumed in a fire, and the burned buildings were demolished and the lot was cleaned out in 2013. Tenants have included individual residents (1931–1951), Saddleback Inn, Saddleback Barber Shop, Avis Rent-A-Car, Phillip Hair Fashion, and Santa Ana Elks Lodge (1960–2005).

No hazardous materials or petroleum products were being handled, used, or stored during the site reconnaissance conducted as part of the site-specific Phase I ESA. Additionally, no aboveground or underground storage tanks were observed.

A limited visual evaluation for the presence of suspect asbestos containing materials (ACMs) was conducted during the ESA within the Elks Lodge building. ACM was suspected to be in drywall systems, floor tiles, floor tiles mastic, and spray-applied acoustical material throughout the building's interior.

Hazardous Materials Database Results

To supplement the environmental database information found in the 2016 site-specific ESA, ICF conducted an online environmental database search via the Geotracker and Envirostor websites in March of 2018. The supplemental search consisted of a review of onsite hazardous materials sites (if present) and offsite hazardous materials sites within a 0.25-mile radius of the project site (sites within 0.25 mile are the most likely to have a deleterious impact on the Elan Project development).

There were no hazardous materials sites identified within the Elan Project footprint in the site-specific ESA and none were found during the supplemental Geotracker and Envirostor database research.

Offsite Properties

Due to the type of business and their proximity to the Elan Project site (all are located west and adjacent to the northern portion of the project footprint), the Phase I ESA identified four sites as having some potential to impact the Elan Project site. Two were identified as historic drycleaner sites and two as historic automobile maintenance facilities. The drycleaner sites were listed as California Dry Cleaners at 1640 East First Street and Kent Coin Laundry at 1620 East First Street. The automobile maintenance sites were identified as Sternke C.W at 1646 East First Street and Jameson W.M at 1646 East First Street. No violations or releases were reported for any of the aforementioned sites.

Offsite hazardous materials sites reviewed during the supplementary Geotracker and Envirostor research included the Unocal #4991 site and both the Raymond A Villa Fundamental Intermediate School and former EECO Inc. site, discussed above. In addition, the Santa Ana Fire Station No. 2 (1688 East Fourth Street) and the Honeywell (514 South Lyon Street) sites are located within 0.25 mile of the project site. The Santa Ana Fire Station No. 2 was identified in the LUST database (although a release never occurred on site) with a case-closed status as of November 2002. A UST was removed from the site in 1998; however, proper sampling was not conducted at the time of the UST removal and the RWQCB did not grant case closure until confirmation sampling was performed (in 2002). Contaminants were not detected in any of the samples taken. The Honeywell site was also identified in the LUST database with a case-closed status as of December 1991. The case involved a release of gasoline to soil only. The contaminated soil was discovered during the removal of a UST. The site was remediated to the satisfaction of the RWQCB (State Water Resources Control Board 2015).

Schools

MEMU Overlay Zone Expansion Area

There are no schools located within the MEMU Overlay Zone expansion area. The closest school is the Raymond A. Villa Fundamental Intermediate School, adjacent to the MEMU Overlay Zone expansion area's southwest border. The Frederick Remington Elementary School is approximately 0.12 mile to the north of the MEMU Overlay Zone expansion area's northwest corner.

Elan Project

The Raymond A. Villa Fundamental Intermediate School is approximately 0.16 mile west of the Elan Project site; the Frederick Remington Elementary School is approximately 0.39 mile to the northwest.

Emergency Response

Emergency Management in the City is implemented by Santa Ana Police Department's Homeland Security Division in coordination with other City departments, the Orange County Fire Authority, Orange County's Emergency Management Division, the Santa Ana Unified School District, the American Red Cross, other county departments and agencies, and surrounding cities. The mission of Emergency Management is to support residents, first responders, and City staff in preparing for and responding to natural or human-caused disasters or acts of terrorism.

Hazardous Materials Regulatory Setting

The Regulatory Framework described in the MEMU EIR is also applicable to this SEIR. Additional regulations described below also apply to both the MEMU Overlay Zone expansion area and Elan Project.

Cortese List

U.S. Code 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, Department of Health Services lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks or a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites with a known migration of hazardous waste/material.

California Labor Code (Division 5, Parts 1, and 7)

The California Labor Code is a collection of regulations that include the regulation of the workplace to ensure appropriate training on the use and handling of hazardous materials and the operation of equipment and machines that use, store, transport, or dispose of hazardous materials. Division 5, Part 1, Chapter 2.5, ensures employees in charge of the handling of hazardous materials are appropriately trained on, and informed of, the materials they are handling. Division 5, Part 7, ensures employees who work with volatile flammable liquids are outfitted with appropriate safety gear and clothing.

Construction Storm Water Program and General National Pollutant Discharge Elimination System Permit (Construction General Permit)

Dischargers whose projects disturb 1 or more acres of soil or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres are required to obtain coverage under the Construction General Permit under Order 2009-0009-DWQ. The Construction General Permit requires the completion and implementation of a site-specific Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would identify the sources of sediment and other pollutants that affect the quality of stormwater discharges and require implementation of

Best Management Practices to reduce or eliminate sediment and other pollutants in stormwater and non-stormwater discharges.

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3.5 Hydrology and Water Quality

The hydrology and water quality information contained herein, unless otherwise cited, is based on the 2007 MEMU EIR (City of Santa Ana 2007a) and the 2017 Fuscoe Engineering Preliminary Water Quality Management Plan (PWQMP) (Appendix E).

Regional Hydrology

As stated in the MEMU EIR, the City is located within the Santa Ana River Basin (SARB), a 2,800-square-mile area located roughly between Los Angeles and San Diego. The SARB is a group of connected inland basins and open coastal basins drained by surface streams flowing generally southwestward to the Pacific Ocean. The SARB can be divided into an upper basin and lower basin separated by the Prado flood control dam, which is at the upper end of the Lower Santa Ana River Canyon. The dam is on the Santa Ana River in Riverside County, approximately 15 miles northeast of the project area. The lower Santa Ana River has been channelized and modified so that in most years flows do not reach the Pacific Ocean but are used to recharge groundwater.

The 33.5-acre project area is within the San Diego Creek Watershed, which covers approximately 112 square miles in central Orange County. It includes portions of the cities of Costa Mesa, Irvine, Laguna Woods, Lake Forest, Newport Beach, Orange, Santa Ana, and Tustin. Its main tributary, San Diego Creek, drains into Upper Newport Bay. Smaller tributaries include Serrano Creek, Borrego Canyon Wash, Agua Chinon Wash, Bee Canyon Wash, Peters Canyon Wash, Sand Canyon Wash, Bonita Canyon Creek, and the Santa Ana Delhi Channel.

Local Drainage

MEMU Overlay Zone Expansion Area

As described in the MEMU EIR, the City maintains approximately 1,600 storm drain inlets and 34,000 linear feet of open channels that transport urban runoff generated from nonpoint sources within the City. Runoff transported by these drainage facilities discharges to the Lower Santa Ana River, Newport Bay, and Bolsa Chica water bodies. Major drainage features in the City include the Santa Ana River and Santiago Creek.

The City's Storm Drain Master Plan (Michael Baker International 2015) provides information on the existing main collector storm drain facilities (storm drain lines of 36 inches and larger) within the entire City. For the purposes of the Storm Drain Master Plan, the City is divided into seven regional watersheds according to which Orange County Flood Control District (OCFCD) facility they are tributary to. The proposed project is located in the Santa Fe Watershed and drains to the Santa Ana-Santa Fe Channel (OCFCD Facility F10). The Santa Fe Watershed is further divided into two sub watersheds, the Santa Fe Grand sub watershed and the Santa Fe Tustin sub watershed, both of which the proposed project area overlaps.

The majority of the project area occurs within the Santa Fe Grand sub watershed. It is generally bounded by Fairhaven Avenue to the north, Lincoln Avenue to the west, the Santa Ana-Santa Fe Channel to the south, and various streets to the east. The sub watershed is developed with commercial, mixed-use, residential, and civic land uses. Runoff from this sub watershed flows from

north to south to the Santa Ana Channel, through street gutters and storm drains. All storm drains within the Santa Fe-Grand sub watershed join the mainline along Grand Avenue, which flows south and connects downstream to the Santa Ana-Santa Fe Channel (Michael Baker International 2015).

The eastern portion of the project area occurs within the Santa Fe Tustin sub watershed. This is the same sub watershed as the western portion of the existing MEMU Overlay Zone. It is located east of the Grand Avenue Storm Drain and is generally bounded by Fairhaven Avenue to the north, various streets to the west, the Santa Ana-Santa Fe Channel to the south, and State Route 55 to the east. The watershed is developed with commercial, mixed-use, residential, and civic land uses. Runoff from the project area in this sub watershed flows from north to south through street gutters and storm drains to the Tustin Channel (OCFCD Facility F11) (Michael Baker International 2015).

All drainage in the project area, including the Elan Project site, flows to the Santa Ana-Santa Fe Channel, Tustin Channel (OCFCD Facility F11), Peters Canyon Channel (OCFCD Facility F06), San Diego Creek Reach 1 (OCFCD Facility F01), and ultimately out to the Newport Bay.

Elan Project

On the 6.39-acre Elan Project site, the central and southern portions are developed with an existing building and paved parking lot. The northern portion is currently a vacant lot. Approximately 2.95 acres (46 percent) is currently pervious surface while approximately 3.44 acres (54 percent) is developed with impervious surfaces. Elevations range on the site from 131 feet above sea level at the northern end to approximately 126 feet above sea level at the southern end over a distance of approximately 900 feet.

Under existing conditions, any runoff not naturally infiltrated into the ground drains towards the existing public storm drain system. The eastern half of the Elan Project site drains in an easterly direction into the existing storm drain line in Elks Lane. The western half drains in a westerly direction down South Lyon Street to a catch basin connecting to the existing storm drain line. Runoff from these storm drain lines continues to drain until it reaches the Southwest Tustin Channel. The predominant soil type on the Elan Project site is undocumented fill overlying natural soils. The fill soils extend to depths of approximately 2 to 5 feet below ground surface and consist of loose to medium dense silty sands. The natural soils consist of interbedded layers of sands, silty sands, sandy silts, clayey silts, and clays. Percolation tests conducted on site found soils are favorable for infiltration at depths of 42 feet below grade within the central portion of the site near Lyon Street. For all other areas of the site, infiltration rates were found to be much lower. Therefore, infiltration is considered partially feasible for the western portion of the Elan Project site. The Elan Project site does not receive any offsite storm water flows onto the property (Appendix E).

Hydromodification

As described in the Elan Project's PWQMP, the Elan site is in an area potentially susceptible to hydromodification impacts. Hydrologic conditions of concern are considered to exist if any streams located downstream from the project area are determined to be potentially susceptible to hydromodification impacts and either of the following conditions exists:

- Post-development runoff volume for the 2-year, 24-hour storm exceeds the pre-development runoff volume for the 2-year, 24-hour storm by more than five percent.

- Time of concentration of post-development runoff for the 2-year, 24-hour storm event exceeds the time of concentration of the pre-development condition for the 2-year, 24-hour storm event by more than five percent.

Table 3.5-1 provides the Elan Project's 2-year, 24-hour storm summary.

Table 3.5-1. Elan Project 2-Year, 24-Hour Storm Summary

Condition	Acreage	Tc	Peak Runoff	Volume
Preconstruction	6.39	8.19 minutes	7.49 cfs	21,344 ft ³

Source: Appendix E

cfs = cubic feet per second

ft³ = cubic feet

Tc = time of concentration

Surface Water Quality

As stated in the MEMU EIR, urban runoff is a major source of polluted discharge to the storm drain system and affects surface water quality. Runoff during storm events is part of the natural hydrologic cycle; however, activities such as construction and development can impact stormwater runoff. Major pollutants typically found in runoff from urban areas such as the City include sediment, nutrients, oxygen-demanding substances, heavy metals, petroleum hydrocarbons, pathogens, and bacteria. Federal, state, and local regulatory and management agencies emphasize preventing pollution at the source and implementing treatment of polluted runoff to prevent degradation of water resources. The City of Santa Ana is also a co-permittee of the Orange County Municipal Separate Storm Sewer System (MS4) Permit. The primary compliance document for implementation of the MS4 Permit is the Drainage Area Master Plan (DAMP), which requires appropriate actions to reduce discharges of pollutants and runoff during each of the major phases of urban development including planning, construction, and operation.

The proposed project is within the jurisdiction of the Santa Ana Regional Water Quality Control Board (Santa Ana Regional Board). As with all Water Boards, the Water Quality Control Plan (Basin Plan) for the Santa Ana Region designates beneficial uses for all water body segments in their jurisdictions, and then sets criteria necessary to protect these uses. Consequently, the water quality objectives developed for particular water segments are based on the designated use and vary depending on such use. The Santa Ana Regional Board has set numeric and narrative water quality objectives for several substances and parameters in numerous surface waters in the region. Table 3.5-2 describes designated beneficial uses for receiving water bodies for the project area.

Table 3.5-2. Designated Beneficial Uses for Receiving Surface Water Bodies Associated with the Project Area

Water Body	Jurisdiction	Designated Beneficial Uses
Peters Canyon Channel ^a	Santa Ana Regional Board	Groundwater Recharge (GWR), Water contact recreation (REC-1), Non-contact water recreation (REC-2), (WARM), Wildlife habitat (WILD)
San Diego Creek (Reach 1)	Santa Ana Regional Board	Water contact recreation (REC-1), Non-contact water recreation (REC-2), (WARM), Wildlife habitat (WILD)
Upper Newport Bay	Santa Ana Regional Board	Water contact recreation (REC-1), Non-contact water recreation (REC-2), Commercial and Sportfishing (COMM), Preservation of biological habitats of special significance (BIOL), Wildlife Habitat (WILD), Rare, Threatened or Endangered Species (RARE), Spawning, Reproduction and Development (SPWN), Marine Habitat (MAR), Shellfish Harvesting (SHEL), Estuarine Habitat (EST)
Lower Newport Bay	Santa Ana Regional Board	Navigation (NAV), Water contact recreation (REC-1), Non-contact water recreation (REC-2), Commercial and Sportfishing (COMM), Wildlife Habitat (WILD), Rare, Threatened or Endangered Species (RARE), Spawning, Reproduction and Development (SPWN), Marine Habitat (MAR), Shellfish Harvesting (SHEL)

Source: Santa Ana Regional Board 2016
^a Intermittent Beneficial Use

The Santa Ana Regional Board also identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with the federal Clean Water Act (CWA) Section 303(d). Table 3.5-3 identifies impairments for receiving water bodies for the project area.

Table 3.5-3. 303(d) Listed Impairments Uses for Receiving Surface Water Bodies Associated with the Project Area

Water Body	Jurisdiction	303(d) Listed Impairments	Applicable Total Maximum Daily Load
Peters Canyon Channel	Santa Ana Regional Board	DDT, Indicator Bacteria, Toxaphene, pH	None
San Diego Creek (Reach 1)	Santa Ana Regional Board	Fecal Coliform, Nutrients, Pesticides, Sedimentation/Siltation, Selenium and Toxaphene	Metals, Nutrients, Pesticides and Siltation
Upper Newport Bay	Santa Ana Regional Board	Chlordane, Copper, DDT, Indicator Bacteria, Metals, Nutrients, PCBs, Pesticides, Sediment Toxicity, Sedimentation/Siltation	Metals, Nutrients, Pathogens, Pesticides, Siltation

Water Body	Jurisdiction	303(d) Listed Impairments	Applicable Total Maximum Daily Load
Lower Newport Bay	Santa Ana Regional Board	Chlordane, Copper, DDT, Indicator Bacteria, Nutrients, PCBs, Pesticides, Sediment Toxicity	Metals, Nutrients, Pathogens, Pesticides, Priority Organics, Siltation

Source: Appendix E

As discussed in the Elan Project's PWQMP, pollutants of concern for the Elan Project include suspended solid/sediment; nutrients; heavy metals; pathogens; pesticides; oil and grease; toxic organic compounds; and trash and debris. The Elan Project site was also identified to be located in an area as "potential areas of erosion, habitat, and physical structure susceptibility" and therefore is susceptible to hydromodification.

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3.6 Land Use and Planning

This section describes existing land uses within the proposed project and surrounding area. The land use and planning information contained herein, unless otherwise cited, is based primarily on the MEMU EIR (City of Santa Ana 2007a), the Metro East Mixed-Use Overlay Zone planning document (City of Santa Ana 2007b), the Santa Ana General Plan (City of Santa Ana 2014); and the Santa Ana Zoning Ordinance.

As discussed in detail in Chapter 2, *Project Description*, the proposed project includes multiple proposals: expansion of the MEMU Overlay Zone boundaries; update of the MEMU Overlay Zone development capacity; modification of land use districts; modification of development standards; construction of the Elan Project; and implementation of required discretionary actions, including a General Plan amendment and zone change. Figure 2-3 depicts the existing General Plan land use designations, Figure 2-4 depicts the existing zoning designations, and Figure 2-5 depicts the existing land use districts for the existing and expanded MEMU Overlay Zone. The environmental setting for these project elements is organized by the existing MEMU Overlay Zone, MEMU Overlay Zone expansion area, and the Elan Project site.

Existing MEMU Overlay Zone

Land Use Districts

Within the existing MEMU Overlay Zone area, approximately 6.4 acres in the northern portion of the existing MEMU Overlay Zone are proposed for modifications to the land use district, bounded to the north by the boundary of the existing MEMU Overlay Zone, to the east by Park Center Drive, to the south by Park Court Place, and to the west by Cabrillo Park Drive (see Figures 2-5 and 2-6 for boundaries of the proposed district changes). Existing uses include commercial buildings, a religious facility, and medical office space. The General Plan land use designation is District Center (DC) and the area is zoned for Professional (P) uses. Adjacent land use designations include Open Space (O) and Low Density Residential (LR-7) to the north, and DC to the east, south, and west. Surrounding uses are zoned Single-Family Residence (R-1), Suburban Apartment (R-4), P, and O.

Development Standards

The current MEMU development standards allow residential land uses in the Neighborhood Transitional and Active Urban land use districts. Multiple-family residential and live/work developments are prohibited in the Office District, while live/work is the only residential land use permitted in the Village Center District. Figure 2-5 shows the project areas that are designated as Office and Village Center.

Within the existing MEMU Overlay Zone, the Village Center and Office districts include most of the land north of East First Street and east of Cabrillo Park Drive. Additional land under the Office district designation includes two separate areas that are bounded to the south by East First Street, to the east by Cabrillo Park Drive, and to the north by East Fourth Street. Current land uses primarily include a mix of retail centers, multi-story office, the high-rise Xerox Development Center, medical buildings, apartment units, and parking space. Land uses—as designated by the General Plan—are primarily DC with Professional and Administrative Offices (PAO) and General Commercial

(GC) on the western side of North Tustin Avenue as well as Cabrillo Park Drive. Land is zoned primarily for P, with additional Arterial Commercial (C-5) and Community Commercial (C-1). The two Office District areas west of Cabrillo Park Drive are zoned for Specific Development 54 (SD-54). Surrounding land uses to the north include LR7, O, and PAO. To the east land uses include PAO, GC, and SR-55. To the south land uses include DC, and to the west DC and I-5. Surrounding uses are zoned C-1, General Commercial (C-2), C-5, R-1, R-4, P, General Agricultural (A-1), SD-54, and O.

General Plan and Zoning Designations

Several properties along the western boundary within the existing MEMU area are proposed for a General Plan amendment. These include the area in the northwest bounded by Mabury Street, East Sixth Street, East Park Court Place, and North Cabrillo Drive; and the area located between I-5, Cabrillo Drive, East First Street, and East Fourth Street. Figures 2-3 and 2-4 depict the existing and surrounding land uses and zoning designations of these areas. For the purposes of this SEIR, these properties are described in three separate discussions.

The first cluster of properties include high-density residential units and parking lots encompassing approximately 5.25 acres in the northwest corner of the existing MEMU Overlay Zone. This cluster of properties is bounded to the east by Cabrillo Park Drive, to the south by East Park Court Place, to the west by Mabury Street, and to the north by East Sixth Street. The current General Plan land use designation is DC and they are zoned as P. These properties are also within the Neighborhood Transitional Land Use District. Surrounding land uses include LR-7 and O to the north, DC to the east, PAO to the south, and I-5 to the west. Surrounding uses are zoned for R-1 and P.

The second group of properties include high-rise buildings with state government and commercial office uses as well as parking structures and a vacant lot. These encompass approximately 8.20 acres currently designated as PAO. This area is bounded to the east by Cabrillo Park Drive, to the south by East First Street, to the west by I-5, and to the north by East Fourth Street. It is zoned for SD-54 and is in both the Active Urban and Office land use districts. Surrounding land uses include DC to the north, PAO and DC to the east, DC to the south, and I-5 to the west. Surrounding uses are zoned for P, C-5, C-1, and A-1.

The third area includes medical office buildings, associated parking lots, and a parking structure encompassing approximately 3.30 acres currently designated as PAO. The area is bounded to the east by North Golden Circuit Drive, to the north by East Fourth Street, to the west by Cabrillo Park Drive, and to the south by the edge of the property line. It is zoned for P and is in the Office Land Use District. Surrounding land uses include DC to the north, east, and south, with PAO to the west. Surrounding uses are zoned for P, C-5, C-2, and SD-54.

MEMU Overlay Zone Expansion Area

Location and Existing Conditions

The MEMU Overlay Zone expansion area would comprise approximately 48 parcels encompassing 33.52 acres. The MEMU Overlay Zone expansion area extends west of the existing MEMU Overlay Zone area primarily along First Street, generally bound by I-5 on the east, Grand Avenue on the west, East Chestnut Avenue on the south, and Fourth Street on the north.

The existing parcels are currently developed with a variety of commercial and residential land uses or that are vacant, undeveloped, or abandoned. Current General Plan land use designations are

primarily GC with Urban Neighborhood (UN) south of East First Street as well as LR-7 north of East First, and Medium Density Residential (MR-15) west of South Elk Lane. The expansion area currently comprises several existing zoning designations, including C-2, C-5, R-1, Two-Family Residence (R-2), Multiple-Family Residence (R-3), and SD-89. Surrounding land uses include GC and LR-7 to the north, O to the east, Institutional (INS) to the south, and GC and UN to the west. Surrounding uses are zoned for R-2 to the north, Light Industrial (M-1), O, R-3, SD-84, and C-2. Figures 2-3 and 2-4 show the current land use and zoning designations for the expansion area and surrounding areas.

Because the proposed MEMU Overlay Zone expansion area is not currently within the MEMU Overlay Zone, there are no designated land use districts associated with this area.

General Plan and Zoning Designations for Parcels Adjacent to the Expansion Area

As described in Chapter 2, *Project Description*, this SEIR is being used to correct the General Plan land use designations for three residential properties adjacent to the northern boundary of the expansion area that are currently designated as GC. These properties include two residential properties at the end of Linwood Avenue and one at the expansion area's northern boundary at Wright Street. The properties are zoned for R-2 which is the appropriate zoning corresponding to these residential uses. Adjacent land is designated as LR-7 to the north, east, and west, and GC to the south. Surrounding uses are zoned for R-2 and C-2. Figures 2-3 and 2-4 show the current land use and zoning designations for these properties and surrounding areas.

Elan Project

Within the MEMU Overlay Zone expansion area, the Elan Project would be located on an approximately 6.4-acre site at 1660 East First Street fronting First Street, and between Lyon Avenue and Elk Lane. Figure 2-2 depicts the boundaries of the Elan Project. The project site is currently developed with an Elks Lodge, parking lot, and a vacant lot. The City's General Plan designates the Elan Project site as GC for the vacant lot in the north and MR-15 for the remainder of the site, including the Elks Lodge and parking lot. Under the City's Zoning Code, the site is currently zoned C-2 on the vacant lot in the north and R-3 on the remainder of the site, including the Elks Lodge and parking lot.

Surrounding land uses include GC to the north, O to the east, MR-15 to the south, and MR-15 and GC to the west. Surrounding zoning designations include C-2 to the north, O to the east, R-3 to the south, and a mix of C-2 and R-3 to the west. Existing uses in the surrounding area include a retail center and apartment units to the north, the Santa Ana Zoo and Prentice Park to the east, multi-family housing and a hotel to the south, and a mix of multi-family housing, single-family housing, and a parking lot supporting commercial properties to the west. The western border of Prentice Park and Santa Ana Zoo is enclosed by a vegetation-covered chain-link fence and intermittent trees. Figures 2-3 and 2-4 show the current land use and zoning designations for the Elan Project site and surrounding areas.

Regulatory Framework

The regulatory framework for land use and planning policy described in the MEMU EIR also applies to this SEIR. The regulations discussed in this section include new regulations or updates related to land use and planning policy enacted since certification of the MEMU EIR.

Regional

Southern California Association of Governments

Since certification of the MEMU EIR, the Southern California Association of Governments' (SCAG's) 2004) – *Adopted 2004 RTP Goals* has been updated with the 2016 *RTP/Sustainable Communities Strategy (RTP/SCS)*. In addition, the MEMU EIR also references the *Compass Growth Vision* document, which is still up-to-date and applicable to the MEMU Overlay Zone expansion area. Also, the final regional policy document applicable to land use and planning is the 1996 *Regional Comprehensive Plan and Guide (RCPG)*, which has since been updated by the 2008 *Regional Comprehensive Plan (RCP)*. The RCP is intended to provide a planning framework to guide local land use decision-making particular to regional growth through the year 2035.

Local

Santa Ana General Plan

The Santa Ana General Plan provides long-term guidance and policies for maintaining and improving the quality of life in, and the resources of, the built and natural community. The General Plan provides direction for the City's growth and development. As a policy document, the General Plan serves as a guide to the adoption of laws necessary to execute its intent. The proposed project is within the regulatory jurisdiction of the City. Permitted land uses, policies, standards, and regulations that are applicable to the proposed project are contained in the General Plan.

Redevelopment Plans

As stated in the General Plan, an estimated 5,185 acres (8.1 square miles) of land in Santa Ana was divided into six separate redevelopment project areas, each with their own redevelopment plans. However, in 2011 and after certification of the MEMU EIR, Redevelopment Agencies were dissolved and eliminated in California. However, the City has continued to pursue redevelopment in these six redevelopment project areas, albeit under the consolidated Merged Project Area. The City plans to continue to assist in projects, such as mixed use that will capitalize on the availability of public transportation, thereby providing additional housing opportunities and compatible industrial uses while eliminating deterioration and incompatible uses. Similar to the existing MEMU Overlay Zone, the proposed project would also be located within the Inter-City Commuter Station Redevelopment Project Area.

Enterprise Zone

As stated in the General Plan, a 7,000-acre portion of the City was designated by the state as a California Enterprise Zone in 1993 and the original MEMU Overlay zone was within this area. The Enterprise Zone provided businesses with state tax incentive programs designed to promote new business development, as well as growth or expansion of existing businesses to revitalize the economy of the Overlay Zones. Tax benefits included sales and use tax credits, hiring credits,

business expense deductions, net loss operating carryovers, net interest deductions for lenders, and employee tax credits. Following the release of numerous studies that concluded that Enterprise Zones have no statistically significant effect on either employment levels or employment growth rates, Governor Brown approved Assembly Bill 93 in 2013 to effectively eliminate the Enterprise Zone program (AB-93 2013). Therefore, the proposed project would no longer occur within a designated Enterprise Zone.

Santa Ana Zoning Code

The City's Zoning Code outlines development standards for buildings, site size, height, setbacks, lot coverage, minimum unit sizes, landscaping, parking, signs, fences, and other features. The corresponding zoning districts of the proposed project are described in detail in Chapter 2, *Project Description*. The provisions of the Overlay Zone will apply to all properties within the Overlay Zone, but do not supersede the underlying zoning districts.

Metro East Mixed-Use Overlay Zone

The purpose of the City's MEMU Overlay Zone is to introduce development forms and uses that will provide for the creation of a high-intensity, mixed-use urban village within a previously developed mid-rise to high-rise office environment. With implementation of the proposed project, the boundaries of the MEMU Overlay Zone would be expanded, and all future development projects proposed in the expansion area would be subject to the OZ-1 development standards. Any issue not specifically covered in the MEMU Overlay Zone would be subject to the provisions of the underlying zoning district specified in Chapter 41 of the Santa Ana Municipal Code.

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3.7 Noise

Existing Setting

In order to document existing noise levels within the MEMU Overlay Zone expansion area, three long-term measurements were obtained around the project area (see Figure 3.7-1) between March 26 and March 28, 2018. These locations were selected to document the noise levels at representative locations across the existing project area and to determine changes in noise levels throughout a typical day. Each long-term measurement was conducted over a period of approximately 40 hours. Noise measurements indicate that the general ambient noise levels at the measurement sites (M-1 through M-3) range from approximately 53 to 72 A-weighted decibels (dBA) average noise level (L_{eq}), and 64 to 73 decibels (dB) community noise equivalent level (CNEL). Additional details and a summary of the measurement results are provided in Table 3.7-1.

Table 3.7-1. Existing Noise Levels in Study Area

Location Number and Description	Measured Noise Levels, dBA	
	CNEL	Range of 1-hour L_{eq} ^a
M-1: on proposed Elan Project site at the Elks Lodge at 212 Elk Lane, along South Elk Lane	Range: 72.6–73.0	Daytime: 64.7–69.9 Evening: 65.3–67.0 Nighttime: 61.5–69.8
M-2: on power pole in front of residence at 120 North Wright Street	Range: 68.1–71.7	Daytime: 60.3–68.2 Evening: 61.0–65.5 Nighttime: 57.2–72.4
M-3: on power pole behind multi-family residences at 214 South Lyon Street	Range: 63.7–64.7	Daytime: 52.8–61.0 Evening: 56.4–58.1 Nighttime: 53.7–60.1

^a Daytime indicates the range of hourly noise levels measured between 7 a.m. and 7 p.m. Evening indicates the range of hourly noise levels measured between 7 p.m. and 10 p.m. Nighttime indicates the range of hourly noise levels measured between 10 p.m. and 7 a.m.

Regulatory Setting

The State CEQA Guidelines do not define the levels at which temporary and permanent increases in ambient noise are considered “substantial.” A noise level increase of 3 A-weighted decibels (dBA) is generally considered to be barely perceptible to most people, a 5 dBA increase is readily noticeable, and a difference of 10 dBA would be perceived as a doubling of loudness. Based on this information, the following thresholds would apply to the operational characteristics of the proposed project.

- Less than 3 dBA; not discernable, not significant
- Greater than 3 dBA but less than 5 dBA: noticeable, but not significant, if noise levels remain below 65 dBA community noise level (CNEL) (the noise level standard at sensitive land uses, including residential uses)
- 5 dBA or greater: potentially significant, if the noise increase would meet or exceed 65 dBA CNEL (the noise level standard at sensitive land uses, including residential uses)

- 5 dBA or greater: potentially significant

The regulatory framework applicable to the proposed project is provided in Section 4.9.2 of the MEMU EIR. Table 4.9-5 in the MEMU EIR describes the standards and guidelines for noise levels by land use and was taken from the City of Santa Ana General Plan Noise Element. This table has since been updated in the City's General Plan Noise Element and the information is provided below as Table 3.7-2, which describes the interior and exterior noise guidelines by land use. These noise guidelines are typically applied to transportation (i.e., non-stationary) noise standards.

Table 3.7-2. Interior and Exterior Noise Guidelines by Land Use

Categories	Land Use Categories	Interior^a (dBA)	Exterior^b (dBA)
Residential	Single-family, duplex, multi-family	45 ^c	65
Institutional	Hospital, school classroom/playgrounds	45	65
	Church, library	45	--
Open Space	Parks	--	65

^a Interior areas (to include but are not limited to: bedrooms, bathrooms, kitchens, living rooms, dining rooms, closets, corridors/hallways, private offices, and conference rooms)

^b Exterior areas (private yards of single family homes, park picnic areas, school playgrounds, and common areas; private open space, such as atriums on balconies, is excluded from exterior areas provided sufficient common area is included within the project)

^c Interior noise level requirements contemplate a closed window condition. Mechanical ventilation system or other means of natural ventilation would be provided per Chapter 12, Section 1305 of the Uniform Building Code.

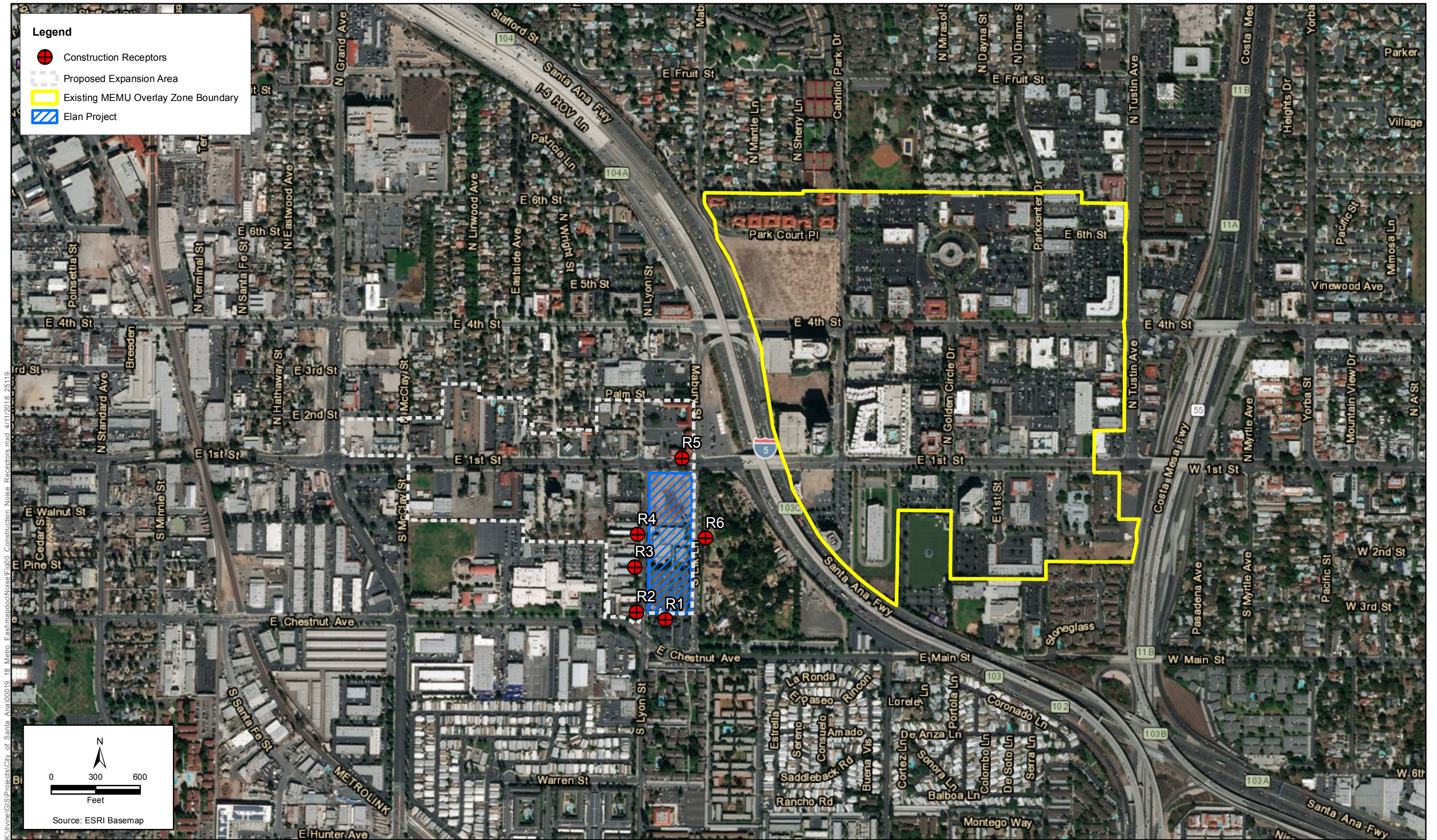


Figure 4.7-1
Construction Noise Analysis Receptor Locations
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR

3.8 Transportation/Traffic

The environmental setting for transportation/traffic for the MEMU Overlay Zone expansion area and the Elan Project are based on the *Traffic Impact Study for the Santa Ana Metro East Overlay Expansion Project* (Appendix G1), and the *Traffic Impact Analysis Report for 1660 E. First Street Elks Apartments* (Appendix G2), respectively.

MEMU Overlay Zone Expansion Area

The existing MEMU Overlay Zone area is bounded by Sixth Street on the north, Interstate (I-) 5 and the Santa Ana City boundary on the south, I-5 on the west, and Tustin Avenue on the east. Regional circulation is provided by I-5, which borders both the existing MEMU Overlay Zone area and proposed MEMU Overlay Zone expansion area on the west and east, respectively, and State Route (SR-) 55 to the east. First Street is a major east-west arterial passing through the middle of the proposed MEMU Overlay Zone expansion area. The street provides two to three lanes in each direction. Land uses adjacent to this segment have a variety of commercial uses, including hotels, offices, strip commercial centers, restaurants, and other commercial uses. Other local streets in the project vicinity that could be affected by the proposed project include First Street, Grand Avenue, Second Street, Third Street, Fourth Street, Sixth Street, Palm Street, Lyon Street, Wright Street, Elk Lane, and McClay Street.

The MEMU Overlay Zone expansion study area in the City of Santa Ana is bound by 17th Street to the north, McFadden Avenue to the south, Main Street to the west, and SR-55 to the east; and the study area in the City of Tustin is bound by 17th Street to the north, Main Street to the south, SR-55 to the west, and Newport Avenue to the east.

According to the Cities of Santa Ana and Tustin, level of service (LOS) D is the minimum acceptable condition that should be maintained during the peak commute hours. However, the City of Santa Ana has defined exceptions to this criterion at specific locations within the study area. The City of Santa Ana has defined major development areas where LOS E is considered acceptable. The California Department of Transportation (Caltrans) “endeavors to maintain a target LOS at the transition between LOS ‘C’ and LOS ‘D’ on State highway facilities”; it does not require that LOS D be maintained. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. Caltrans has determined that all state-owned facilities that operate below LOS D should be identified and improved to an acceptable LOS. The Caltrans Traffic Impact Study Guidelines dated December 2002 state that if an existing state-owned facility operates at less than LOS D, the existing service level should be maintained.

Based on traffic volumes in 2017, LOS analyses were conducted for 52 study intersections and 17 street segments. In 2017, all study roadway segments operate at LOS D or better (acceptable) except for:

- Lyon Street between First Street and Main Street (LOS E)

In 2017, all study intersections operated at acceptable LOS under existing conditions during the AM and PM peak hours, except the following:

- Elk Lane & Chestnut Avenue (LOS F AM and PM)

- SR-55 southbound ramps & Irvine Boulevard (LOS E AM)
- SR-55 northbound ramps & 17th Street (LOS F PM)

Elan Project

The traffic analysis for the Elan Project evaluates the existing operating conditions at 23 key study intersections and 12 key roadway segments. Of the 23 intersections, 17 are within the City of Santa Ana, and six are in the City of Tustin. Of the 12 roadway segments, 11 are in the City of Santa Ana and one is in the City of Tustin.

In 2017, 21 of the 23 study intersections operated at an acceptable LOS during the AM and PM peak hours, except the following:

- Elk Lane & Chestnut Avenue/Main Street (LOS E AM and LOS F PM)
- SR-55 southbound ramps at Fourth Street (LOS E AM)

3.9 Tribal Cultural Resources

Tribal cultural resources include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR); included in a local register of historical resources; or determined by a lead agency, in its discretion and supported by substantial evidence, to be significant under CRHR criteria (Public Resources Code [PRC] Section 21074). Tribal cultural resources may contain physical cultural remains (e.g., materials found in archaeological sites), or they may be floral or faunal resources or places within the natural landscape.

This section first describes the ethnographic setting of the surrounding region and project area. This section also describes the tribal cultural resources regulations pertinent to the project and evaluates the potential for impacts involving tribal cultural resources. The discussion of tribal cultural resources relies upon a review of a cultural resources records search, Sacred Lands File Search obtained from the Native American Heritage Commission (NAHC), and outreach conducted between the City and interested tribes. As of the publication of this Draft SEIR, responses from interested tribes are pending, and any results will be incorporated into the Final SEIR, as applicable.

Ethnographic Setting

The Gabrielino

What is now the City of Santa Ana was occupied during the Late Prehistoric Period by the Gabrielino (Kroeber 1925; Bean and Smith 1978a, 1978b). The term “Gabrielino” identifies those Native Americans who lived within the sphere of influence of the Spanish Mission San Gabriel. The overwhelming number of people here were of the same ethnic nationality and language group.

In early protohistoric times, the Gabrielino occupied a large territory including the entire Los Angeles Basin. This region encompasses the coast from Topanga Canyon to Aliso Creek, parts of the Santa Monica Mountains, the San Fernando Valley, the San Gabriel Valley, the San Bernardino Valley, the northern parts of the Santa Ana Mountains, and much of the middle to the lower Santa Ana River. They also occupied the islands of Santa Catalina, San Clemente, and San Nicolas. Within this large territory were more than 50 residential communities with populations ranging from 50 to 150 individuals. The Gabrielino had access to a broad and diverse resource base. This wealth of resources, coupled with an effective subsistence technology, well-developed trade network, and ritual system, resulted in a society that was among one of the most materially wealthy and culturally sophisticated cultural groups in California at the time of contact (Bean and Smith 1978b).

Very little is known about early Gabrielino social organization because the band was not studied until the 1920s and had already been greatly influenced by missionaries and settlers by that time (Kroeber 1925). Kroeber’s (1925) work indicates that the Gabrielino were a hierarchically ordered society with a chief who oversaw social and political interactions both within the Gabrielino culture and with other groups. The Gabrielino had multiple villages ranging from seasonal satellite villages to larger, more permanent settlements. Resource exploitation was focused on village-centered territories and hunting ranged from deer, rabbits, birds, and other small game to sea mammals. Fishing for freshwater fish, saltwater mollusks, and crustaceans, and gathering acorns and various

grass seeds were also important (Bean and Smith 1978b:538–549). Fishing technology included basket fish traps, nets, bonefish hooks, harpoons, and vegetable poisons, and ocean fishing was conducted from wooden plank canoes lashed and asphalted together. Gabrielino houses were large, circular, thatched, and domed structures of tule, fern, or carrizo that were large enough to house several families. Smaller structures were also present in the villages and were used in a variety of ways. These structures were earth covered, and different ones were used as sweathouses, meeting places for adult males, ritual huts, and ceremonial enclosures (Heizer 1962:289–293) Recorded ethnographic and archaeological sites associated with Gabrielino settlements are few. This is directly attributable to the extensive and prolonged urban development of the City of Los Angeles region over the last one and a half centuries (California Department of Parks and Recreation 2005:16).

Existing Tribal Cultural Resources

In addition to the ethnographic setting discussion provided above, records searches, a Sacred Lands File Search, and Native American consultation were completed to identify any previously recorded tribal cultural resources within the half-mile radius of the MEMU Overlay Zone expansion area and the Elan Project area. The discussion below outlines the methodology for these activities and the results.

Methodology

The effort to identify tribal cultural resources in the project area included a records search of previous cultural resource investigations and recorded resources, review of the City of Santa Ana Register of Historic Properties, a Sacred Lands File Search conducted by the NAHC, and outreach and consultation between the City and interested tribes.

Cultural Resources Records Search

MEMU Overlay Zone Expansion Area

On February 6, 2018, ICF conducted a cultural resources records search at the South Central Coastal Information Center (SCCIC). The SCCIC is the regional repository of cultural resources information and is housed at California State University, Fullerton. The records search covered a half-mile radius around the MEMU Overlay Zone expansion area. The purpose of the records search was to identify previously recorded archaeological sites and historic built-environment resources, and to identify cultural resources studies performed in or within a half-mile radius of the MEMU Overlay Zone expansion area.

The Santa Ana Register of Historic Properties was consulted to identify any potential tribal cultural resources in the study area.

On January 25, 2018, ICF requested a review of the sacred lands files from NAHC.

Elan Project

The Elan Project falls within the MEMU Overlay Zone expansion area and the records searches and the Sacred Lands File Search include the Elan Project study area. Therefore, the methodologies above are applicable to the Elan Project.

Results

Overlay Zone Expansion Area

Together, the SCCIC records search results and the Santa Ana Register of Historic Properties documentation show that no previously recorded tribal cultural resources are located within the MEMU Overlay Zone expansion area. Additionally, no sacred lands were identified within the MEMU Overlay Zone expansion area or within a half-mile radius of it by NAHC or through consultation with Native American tribes.

Elan Project

The Elan Project falls within the MEMU Overlay Zone expansion area, and the records searches and Sacred Lands File Search include the Elan Project study area. As indicated by the records searches, Sacred Lands File Search, and consultation with Native American Tribes, the Elan Project study area does not contain previously identified tribal cultural resources.

Regulatory Setting

State

California Environmental Quality Act and Public Resources Code Section 5024.1 (California Register of Historical Resources)

CEQA requires public agencies to evaluate the implications of their project(s) on the environment and includes significant historical resources as part of the environment. According to CEQA, a project that causes a *substantial adverse change* in the significance of a *historical resource* or an *archaeological resource*, including *unique archaeological resources*, has a significant effect on the environment (State CEQA Guidelines 15064.5, PRC Section 21083.2).

CEQA defines a substantial adverse change as:

1. Physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired; or
2. Demolition or material alteration of the physical characteristics that convey the resource's historical significance and justify its designation as a *historical resource*.

Public agencies must treat any cultural resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant (California Code of Regulations [CCR], Title 14, Section 15064.5). A cultural resource is considered significant if it meets the definition of *historical resource* or *unique archaeological resource*.

The term *historical resource* includes but is not limited to any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California (PRC Section 5020.1(j)). Historical resources may be designated as such through three different processes.

1. Official designation or recognition by a local government pursuant to local ordinance or resolution (PRC Section 5020.1(k))

2. A local survey conducted pursuant to PRC Section 5024.1(g)
3. The property is listed in or eligible for listing in the National Register of Historic Places (NRHP) (PRC Section 5024.1(d)(1))

The process for identifying historical resources is typically accomplished by applying the criteria for listing in the CRHR (14 CCR 4852), which states that a historical resource must be significant at the local, state, or national level under one or more of the following four criteria.

1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. It is associated with the lives of persons important in our past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important in prehistory or history.

To be considered a *historical resource* for the purposes of CEQA, the resource must also have *integrity*, which is the authenticity of a resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance.

Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which a resource is eligible for listing in the CRHR (14 CCR 4852(c)).

California Environmental Quality Act—SB 18 Consultation

Senate Bill (SB) 18 (California Government Code, Section 65352.3), enacted in 2004, requires local governments to consult with Native American groups at the earliest point in the local government land use planning process. It establishes responsibilities for local governments to contact, refer plans to, and consult with California Native American tribes as part of the adoption or amendment of any general or specific plan proposed on or after March 1, 2005. SB 18 requires public notice to be sent to tribes listed on NAHC's SB 18 Tribal Consultation List within the geographical areas affected by the proposed changes. Tribes must respond to the CEQA lead agency notice within 90 days, indicating whether or not they want to consult. Consultations are for the purpose of establishing meaningful dialogue regarding preserving or mitigating impacts on places, features, and objects described in PRC Sections 5097.9 and 5097.993 that may be affected by the proposed adoption of or amendment to a general or specific plan.

California Environmental Quality Act—Tribal Cultural Resources

Recent legislation known as Assembly Bill 52 amended CEQA to require that the analysis of project impacts on cultural resources include an analysis of impacts on tribal cultural resources. As set forth in PRC Section 21074, tribal cultural resources are defined as follows.

(a) "Tribal cultural resources" are either of the following:

- (1) Sites, features, places, and objects with cultural value to descendant communities or cultural landscapes, that are any of the following:

- (A) Included in or eligible for inclusion in the California Register of Historical Resources.
 - (B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
- (2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe.
- (b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
 - (c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a “nonunique archaeological resource” as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

For projects with a Notice of Preparation after July 1, 2015, the lead agency is required to consult with California Native American tribes that are traditionally and culturally affiliated with the project area if (1) the tribe requests to the lead agency in writing to receive notification of projects; and (2) the tribe requests consultation on a specific project prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report. Consultation is:

“...the meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties’ cultural values and, where feasible, seeking agreement. Consultation between government agencies and Native American tribes shall be conducted in a way that is mutually respectful of each party’s sovereignty. Consultation shall also recognize the tribes’ potential needs for confidentiality with respect to places that have traditional tribal cultural significance.” (Government Code Section 65362.4)

PRC Section 21080.3.2(a) lists consultation topics that may be discussed, including tribal cultural resources, project alternatives, project impacts, and possible mitigation measures.

Consultation ends when one of the following outcomes occurs:

1. Both parties agree to measures to avoid or mitigate significant effects on a tribal cultural resource. The agreed-upon mitigation measures are included in the environmental document (PRC Section 21082.3(a)); or
2. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Sections 21080.3.2(b)(1-2) and 21080.3.1(b)(1)).

Health and Safety Code 7050.5/Public Resources Code 5097.9

Health and Safety Code 7050.5 addresses the protection of human remains discovered in any location other than a dedicated cemetery and makes it a misdemeanor for any person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law, except as provided in PRC Section 5097.99. It further states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the

coroner of the county in which the human remains are discovered has determined that the remains are not subject to the provisions concerning investigation of the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in PRC Section 5097.98. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, NAHC. Whenever NAHC receives notification of a discovery of Native American human remains from the county coroner, it shall immediately notify those people it believes to be the most likely descendants of the deceased Native American. The descendants may inspect the site of the discovery and make recommendations on the removal or reburial of the remains.

California Government Code Section 6254 (r) and 6254.10

California Government Code Section 6254(r) and Section 6254.10 of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to “Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission.” Section 6254.10 specifically exempts from disclosure requests for “records that relate to archaeological site information and reports, maintained by, or in the possession of the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the Native American Heritage Commission, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a Native American tribe and a state or local agency.”

Local

City of Santa Ana Historical Resources

Section 30.2 of the Santa Ana Municipal Code describes the following criteria for selection:

Any person or group may request a building, or part thereof, structure, object or site, to be designated to be included on the City register of historical properties (called “register” in this section). The applicant must submit documentation that demonstrates how the nominated building, structure, object or site satisfies the criteria for designation. A building, structure, object, or site may be designated for inclusion on the register if the building, structure, object or site is fifty (50) or more years old and if the commission finds that one (1) or more of the following conditions are met:

1. Buildings, structures or objects with distinguishing characteristics of an architectural style or period, that exemplify a particular architectural style or design features;
2. Works of notable architects, builders, or designers whose style influenced architectural development;
3. Rare buildings, structures, or objects or original designs;
4. Buildings, structures, or objects or sites of historical significance which include places:
 - a. Where important events occurred;
 - b. Associated with famous people, original settlers, renowned organizations and businesses;
 - c. Which were originally present when the City was founded; or
 - d. That served as important centers for political, social, economic, or cultural activity.

5. Sites of archaeological importance;
6. Buildings or structures that were connected with a business or use which was once common, but is now rare.

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Chapter 4

Environmental Impact Analysis

This chapter presents information and analysis of the environmental impacts potentially resulting from the proposed project. The analysis contained within this chapter addresses the changes to impacts identified in the MEMU EIR that could occur as a result of the proposed project.

A summary of the Final MEMU EIR findings is provided, followed by a discussion of the impacts associated with the proposed project and significance of the impacts. An environmental checklist form is included in Appendix A. Mitigation measures from the MEMU EIR are incorporated into the proposed project where applicable.

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4.1 Air Quality

Summary of MEMU EIR Findings

The certified *City of San Ana Metro East Mixed-Use Overlay Zone Environmental Impact Report* (MEMU EIR) found that implementation of the original MEMU Overlay Zone would have less-than-significant impacts on the air quality thresholds below. For the threshold regarding the Air Quality Management Plan, implementation of the proposed project, including the Elan Project, was also found to have a less-than-significant impact. For more details on this threshold, see Appendix A. For the threshold regarding localized carbon monoxide (CO) concentrations, because the proposed project would extend the boundaries of the MEMU Overlay Zone into an area of the City not previously evaluated in the MEMU EIR, it was determined that a new or substantially more severe impact related to air quality could occur. This threshold is fully evaluated in this Subsequent EIR (SEIR).

- The project would result in new sources of regional air emissions but would not conflict with or obstruct implementation of the Air Quality Management Plan.
- Operation of the project would not expose sensitive receptors to substantial localized CO concentrations, even though the project would generate increase local traffic volumes.

The certified MEMU EIR found the air quality impact below to be less than significant after implementation of mitigation. Implementation of the proposed project, including the Elan Project, was also found to have a less-than-significant impact on this threshold after implementation of mitigation; therefore, this threshold is not discussed further in this SEIR. For more details on this threshold, see Appendix A.

- Construction and operation of the project would not create objectionable odors affecting a substantial number of people with implementation of mitigation measure **MM-OZ 4.2-1**. Mitigation measure **MM-OZ 4.2-1** would require trash receptacles within the Overlay Zone to have lids that enable convenient collection and loading and be emptied on a regular basis, in compliance with the City's regulations for solid waste collection.

The certified MEMU EIR found the following air quality impacts to be significant and unavoidable, even with implementation of mitigation. Because the proposed project would extend the boundaries of the MEMU Overlay Zone into an area of the City not previously evaluated in the MEMU EIR, and the build-out year for the proposed project is 2040 as opposed to 2030, the year that was analyzed in the MEMU EIR, it was determined that a new or substantially more severe impact related to air quality could occur. These thresholds are fully evaluated in this SEIR.

- Construction activities associated with the project would exceed South Coast Air Quality Management District (SCAQMD) standards for volatile organic compounds (VOCs) and nitrogen oxide (NO_x) and result in a projected air quality violation. Compliance with project requirements and implementation of mitigation measures **MM-OZ 4.2-2** through **MM-OZ 4.2-16** would reduce the impact but not to a less-than-significant level. Therefore, this impact would be considered significant and unavoidable.
- Operation of the project would result in emissions that would exceed SCAQMD standards for VOCs, NO_x, CO, and particulate matter less than or equal to 10 microns in diameter (PM₁₀) and

result in a projected air quality violation. This impact would be considered significant and unavoidable.

- Construction and operation of the project could result in a cumulatively considerable net increase in criteria pollutants for which the project region is in nonattainment status under an applicable federal or state ambient air quality standard. Implementation of mitigation measures **MM-OZ 4.2-2** through **MM-OZ 4.2-16** would reduce this impact but not to a less-than-significant level. Therefore, this impact would be considered significant and unavoidable.

Criteria of Significance

According to the California Environmental Quality Act (CEQA) Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make significance determinations for potential impacts on environmental resources. As described in the MEMU EIR, the City uses SCAQMD's thresholds to assess the significance of a project's potential air quality impacts. Thus, the applicable construction and operational air quality thresholds established by SCAQMD are used to assess potential impacts resulting from implementation of the proposed project. Table 4.1-1 presents the current quantifiable thresholds recommended by SCAQMD to determine the significance of regional air quality impacts from construction and operational emissions generated by projects.

Table 4.1-1. SCAQMD Regional Air Quality Significance Thresholds

Pollutant	Mass Daily Thresholds (pounds per day)	
	Construction	Operation
VOCs	75	55
NO _x	100	55
CO	550	550
PM10	150	150
PM2.5	55	55
SO _x	150	150
Pb ^a	3	3

Source: South Coast Air Quality Management District 2015.

VOCs = volatile organic compounds; NO_x = nitrogen oxide; CO = carbon monoxide; PM10 = particulate matter no more than 10 microns in diameter; PM 2.5 = particulate matter no more than 2.5 microns in diameter; SO_x = sulfur oxide; Pb = lead.

^a The proposed project would not result in lead emissions during construction or operation. As such, lead emissions are not evaluated herein.

In addition to the regional air quality thresholds, SCAQMD has also established localized significance thresholds (LSTs) for the purpose of analyzing localized air quality impacts associated with proposed projects (SCAQMD 2008). The LSTs developed by SCAQMD apply only to emissions of CO, NO_x, PM10, and particulate matter less than or equal to 2.5 microns in diameter (PM2.5), representing the pounds of emissions per day that can be generated by a project without causing or contributing to adverse localized air quality impacts. The analysis of localized air quality impacts focuses only on the on-site activities of a project and does not include emissions that are generated off-site, such as on-road haul or delivery truck trips (SCAQMD 2008).

Because LSTs are applicable at the project-specific level and not applicable to regional projects (SCAQMD 2008), these thresholds would not be applicable to the mass construction and operational emissions associated with buildout of the MEMU Overlay Zone (including the expansion area). These emissions are evaluated using a program-level environmental assessment that evaluates the effects of implementation of the entire Overlay Zone in the original MEMU area in addition to the expansion area. However, the LSTs would be applicable to the Elan Project because this component of the proposed project would be analyzed on the project-specific level. Thus, the LST analysis conducted for the proposed project in this SEIR would pertain only to the Elan Project. However, it should be noted that because each future development undertaken during the planning horizon of the proposed project in the Overlay Zone and expansion area would need to be approved individually by the City's Planning Department, the City Planning Commission, and the City Council, in compliance with CEQA, these individual development projects would be required to conduct their own respective LST analyses during their CEQA review to determine whether any potential localized air quality impacts would occur.

SCAQMD has developed mass rate look-up tables that present LST values in the form of allowable emissions (in pounds per day) as a function of receptor distance from a project's site boundary. These LST values were developed for 1-, 2-, and 5-acre sites. The LSTs established for each of the aforementioned site acreages represent the level of pollutant emissions that would not exceed the most stringent applicable federal or state ambient air quality standards. LSTs are based on the ambient concentrations of that pollutant for each of the 38 source receptor areas (SRAs) in the South Coast Air Basin (SCAB). Although the 6.4-acre Elan Project site exceeds 5 acres in size, the LST values for a 5-acre site from SCAQMD's mass rate look-up tables can still be applied as screening thresholds to determine whether localized air quality impacts could occur from the project. Where it is determined that the applicable construction and operational LSTs for a 5-acre site would not be exceeded at the 6.4-acre Elan Project site, then it can be concluded that the project's emissions would not result in localized air quality impacts. Where the Elan Project's emissions would exceed the applicable LSTs for a 5-acre site, then a more refined analysis, involving air dispersion modeling, would be required for the project. Table 4.1-2 presents the construction and operational LST values for a 5-acre project site in SRA 17 (Central Orange County), which is where the Elan Project site is located.

Methods

Air quality impacts associated with expansion of the MEMU Overlay Zone and development of the Elan Project are evaluated using the same approach used in the MEMU EIR, which focuses on the nature and magnitude of the change in air quality due to implementation of the proposed project. This analysis determines if implementation of the proposed project would result in additional impacts, other than those identified in the MEMU EIR.

This analysis provides a program-level overview of construction and operational emissions that could occur with buildout of the original MEMU Overlay Zone and expansion area. Subsequent project-level environmental review, including quantification of construction criteria pollutant emissions, would be required during the processing of individual applications for future development projects associated with the proposed project in the original MEMU Overlay Zone and expansion area. For the Elan Project, a project-level environmental assessment is conducted to evaluate the potential air quality impacts resulting from construction and operation of this mixed-use development.

Table 4.1-2. SCAQMD LST Screening Thresholds

Pollutant Monitored within SRA 17 – Central Orange County	Five-Acre Site ^a				
	Allowable Emissions (pounds/day) as a Function of Receptor Distance (feet) from Site Boundary				
	82 (ft)	164 (ft)	328 (ft)	656 (ft)	1,640 (ft)
Construction Screening Thresholds					
Nitrogen Oxides (NO _x) ^b	183	167	180	202	245
Carbon Monoxide (CO)	1,253	1,734	2,498	4,018	9,336
Respirable Particulate Matter (PM10)	13	39	55	88	188
Fine Particulate Matter (PM2.5)	7	9	15	32	109
Operational Screening Thresholds					
Nitrogen Oxides (NO _x) ^b	183	167	180	202	245
Carbon Monoxide (CO)	1,253	1,734	2,498	4,018	9,336
Respirable Particulate Matter (PM10)	3	10	14	22	45
Fine Particulate Matter (PM2.5)	2	3	4	8	27

Source: SCAQMD 2008.

^a The LSTs for a 5-acre site in SRA 17 are used to perform a screening-level analysis of the proposed Elan Project. Where it is determined that the construction and operational emissions generated at the 6.4-acre Elan Project site would not exceed the LSTs for a 5-acre site, it can be concluded that the Elan Project's emissions would not result in localized air quality impacts. Should the Elan Project's on-site emissions exceed these LST's values, then a more refined analysis, involving air dispersion modeling, would be required for the project.

^b The localized thresholds listed for NO_x in this table take into consideration the gradual conversion of nitric oxide (NO) to nitrogen dioxide (NO₂). The analysis of localized air quality impacts associated with NO_x emissions focuses on NO₂ levels because of their association with adverse health effects.

MEMU Overlay Zone Expansion Area

Construction Emissions

As noted in the MEMU EIR, because the specific size, location, and construction techniques, as well as scheduling, for each development project occurring in the project area with implementation of the Overlay Zone are not currently known, the provision of emissions estimates for each development project, or combination of projects, would require the City to speculate regarding the potential environmental impacts of such future projects. Thus, in the absence of the necessary construction information required to provide an informative and meaningful analysis, the evaluation of potential construction-related impacts resulting from implementation of the MEMU Overlay Zone expansion area is conducted qualitatively in this SEIR, relying on the construction emissions analysis conducted in the MEMU EIR. The analysis discusses the potential for future individual developments in the MEMU Overlay Zone expansion area to generate construction emissions that would exceed SCAQMD's project-level thresholds and, where necessary, the mitigation measures that would be available to reduce those emissions. The analysis focuses on whether changes to the impacts identified in the MEMU EIR could occur as a result of the new expansion area to the MEMU Overlay Zone.

Operational Emissions

Long-term (i.e., operational) regional emissions of criteria air pollutants and precursors, including mobile- and area-source emissions, that would occur from buildout of the proposed project were quantified using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. Modeling of mass mobile-source emissions was based on the daily vehicle trips data provided by KOA Corporation, the project traffic engineers, for existing (2017) and proposed build-out year (2040) conditions.

Area and energy (natural gas) emissions were modeled according to the number (e.g., number of dwelling units, or square footage) and types of land uses that would occur in the original MEMU Overlay Zone and expansion area. Area sources account for direct sources of air emissions and include hearth usage (e.g., natural gas fireplaces), consumer product use, landscape maintenance equipment, and architectural coatings used for painting buildings. Energy sources account for emissions associated with the combustion of natural gas for heating and hot water. Emissions were quantified for existing (2017) and proposed MEMU Overlay Zone build-out (2040) conditions, based on current and anticipated land uses. CalEEMod defaults were assumed, with the exception of wood-burning stoves and fireplaces, which were assumed to be prohibited for all new development under the proposed project per SCAQMD Rule 445 (Wood-Burning Devices). Please refer to Appendix B1 for the CalEEMod output files.

To evaluate potential operational air quality impacts from buildout of the proposed project, the increase in criteria pollutant emissions resulting from implementation compared with existing conditions is assessed against SCAQMD's project-level thresholds (refer to Table 4.1-1). The analysis focuses on whether changes to the impacts identified in the MEMU EIR could occur as a result of the new expansion area to the MEMU Overlay Zone.

Carbon Monoxide Hot Spots

Increased traffic in the MEMU Overlay Zone and expansion area may contribute to localized increases in CO, known as CO "hot spots." A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour ambient air standards for the pollutant. According to the Transportation Project-level Carbon Monoxide Protocol (CO Protocol) (Garza et al. 1997), projects may worsen air quality with respect to CO concentrations if they increase the percentage of vehicles in cold-start mode by 2 percent or more, significantly increase traffic volumes (by 5 percent or more) compared with existing volumes, or worsen traffic flow (i.e., increasing average delay at signalized intersections that operate at level of service [LOS] E or F or causing an intersection that would operate at LOS D or better without the project to operate at LOS E or F). However, it should be noted that ambient concentrations of CO have declined dramatically in California because of existing controls and programs. Most areas of the state, including the region in which the proposed project is located, have no problem meeting the state and federal CO standards (California Air Resources Board 2004). Thus, for the purpose of this analysis, CO concentrations were evaluated only for the three study intersections analyzed in the project traffic impact study where the highest traffic volumes would occur. Modeling these three intersections would ensure that the highest CO concentrations generated by roadway traffic would be evaluated. The CALINE-4 dispersion model was used for the evaluation, with vehicle emissions factors generated from California Air Resources Board's (CARB's) latest Emission FACTors (EMFAC) model (EMFAC2017), following the modeling parameters in the CO Protocol. The modeled CO concentrations were then compared with the California Ambient Air Quality Standards (CAAQS) for CO (1-hour and 8-hour standards) to determine significance.

Elan Project

Construction Emissions

To conduct a project-level analysis for the Elan Project, the latest version of CalEEMod (Version 2016.3.2) was used to model the construction-related pollutant emissions generated by this mixed-use project. The modeling was based on project-specific data provided by the applicant, where available. Where project-specific information was not available, default model settings were used to estimate criteria air pollutant and ozone precursor emissions. Because it is mandatory for all construction projects in the SCAB to comply with SCAQMD Rule 403 for fugitive dust control, the reduction in fugitive PM10 and PM2.5 emissions from implementation of Rule 403 was accounted for in the modeling. Specific Rule 403 control requirements include, but are not limited to, applying water to exposed soils, particularly during grading activities; washing equipment and vehicles or using another other method for removing material (e.g., washed gravel pad, wheel shaker, wheel spreading device) prior to leaving the project site; covering haul loads prior to haul vehicles leaving the project site; and removing any accumulated dirt/mud from roadways adjacent to the project site. The resulting construction emissions estimated from CalEEMod were then assessed against SCAQMD's applicable regional thresholds (refer to Table 4.1-1) to determine the project's effect on air quality. The modeling input and output files are provided in Appendix B of this SEIR.

In conducting the localized air quality analysis for the Elan Project's construction emissions, which focuses only on the on-site emissions, the project's peak on-site construction emissions from combustion sources (e.g., off-road construction equipment) and fugitive dust emissions were extracted from the CalEEMod model run outputs. These daily on-site combustion and fugitive dust emissions were evaluated against SCAQMD's LSTs for a 5-acre site (refer to Table 4.1-2) to determine whether localized air quality impacts would result.

Operational Emissions

The Elan Project's operational regional emissions of criteria air pollutants and precursors, including mobile- and area-source emissions, were also quantified using CalEEMod. Area-source emissions, which are widely distributed and composed of many small emissions sources (e.g., building heating and cooling units, landscaping equipment, consumer products, painting operations), were modeled according to the size and type of land use proposed. Modeling of mass mobile-source emissions was based on the number of daily vehicle trips that would result from the Elan Project's new multi-family residential and retail/commercial uses. Project trip generation rates for the Elan Project were obtained from the traffic impact study prepared for the project by Linscott, Law & Greenspan, Engineers. The long-term operational emissions that would be generated by the project were then compared with the applicable SCAQMD thresholds (refer to Table 4.1-1) for the determination of significance. Aside from regional air quality impacts, the Elan Project's localized air quality impacts during operation were also analyzed by extracting the project's on-site operational emissions from the CalEEMod model run and evaluating those emissions against SCAQMD's applicable operational LSTs (refer to Table 4.1-2).

Carbon Monoxide Hot Spots

Using the same approach discussed above for analysis of the MEMU Overlay Zone and expansion area, CO concentrations were evaluated for the three study intersections analyzed in the Elan Project's traffic impact study where the highest traffic volumes would occur. Modeling these three

intersections would ensure that the highest CO concentrations generated by roadway traffic would be evaluated. The CALINE-4 dispersion model was used for the evaluation, with vehicle emissions factors generated from CARB's latest EMFAC model (EMFAC2017), following the modeling parameters in the CO Protocol. The modeled CO concentrations were then compared with the CAAQS for CO (1-hour and 8-hour standards) to determine significance.

Impacts of Proposed Project

MEMU Overlay Zone Expansion

Expansion of the MEMU Overlay Zone would not result in new significant impacts or substantially increase the severity of a previously analyzed impact related to air quality that has not already been evaluated in the MEMU EIR. The proposed project involves expanding the boundaries of the existing MEMU Overlay Zone to add an additional 33.52 acres, or approximately 48 parcels, to the project area. The expanded project area, which would extend west, primarily along First Street, would be bound generally by Interstate 5 on the east, Grand Avenue on the west, East Chestnut Avenue on the south, and Fourth Street on the north. The parcels are either developed with a variety of commercial and residential land uses or vacant, undeveloped, or abandoned. Although the boundaries of the MEMU Overlay Zone would be modified to include a larger area, the development capacity would remain the same for the entire MEMU Overlay Zone.

Threshold: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Impact 4.1-1: Construction of the proposed project could violate an air quality standard or contribute to an existing or projected air quality violation.

As discussed in the MEMU EIR, because the specific size, location, and construction techniques, as well as scheduling, for each development project occurring in the MEMU Overlay Zone are not currently known, the provision of emissions estimates for each development project, or combination of projects, would require the City to speculate regarding the potential environmental impacts of such future projects. The MEMU EIR further noted that future projects in the MEMU Overlay Zone would be considered and evaluated by the City on a case-by-case basis through the environmental review process to ascertain whether an individual project would generate potentially significant air quality impacts and, where necessary, require implementation of mitigation measures to minimize emissions and reduce potentially significant impacts. For the purpose of the analysis, however, emissions associated with construction of all proposed land uses within the Overlay Zone were nonetheless estimated to show the magnitude of the pollutant emissions that would most likely result from implementation of the MEMU Overlay Zone project. Based on the emissions estimates, it was shown that both VOCs and NO_x emissions would exceed SCAQMD thresholds. Although mitigation measures **MM-OZ 4.2-2** through **MM-OZ 4.2-16** from the MEMU EIR would be implemented for each future development project where potentially significant air quality impacts associated with construction activities would occur, the MEMU EIR concluded that these mitigation measures may not reduce emissions to below the SCAQMD thresholds for each development project because the amount of emissions generated by each project would vary, depending on its size, the land area disturbed during construction, and the length of the construction schedule. Under these conditions, no further mitigation would be feasible, and impacts would be significant and

unavoidable. As such, when the MEMU Overlay Zone project is evaluated in its entirety, taking into consideration construction emissions generated from all development proposed in the Overlay Zone, impacts from construction emissions, even with implementation of mitigation measures **MM-OZ 4.2-2** through **MM-OZ 4.2-16** from the MEMU EIR, would also be significant and unavoidable.

Under the proposed project, the development capacity of the original MEMU Overlay Zone would remain the same for the entire MEMU Overlay Zone area. As such, because the total amount of development would not change, the programmatic-level analysis of construction emissions conducted in the MEMU EIR would still apply to the MEMU Overlay Zone expansion area. Thus, even with implementation of mitigation measures **MM-OZ 4.2-2** through **MM-OZ 4.2-16** from the MEMU EIR, construction-related air quality impacts resulting from the proposed project would remain significant and unavoidable. In addition, newly developed mitigation measures **MM-AQ-1** through **MM-AQ-3**, which would require future development projects within the MEMU Overlay Zone to use Tier 4 engines for off-road equipment, 2010 and newer haul trucks, and super-compliant VOCs paints, respectively, are further recommended in this SEIR to reduce emissions of VOCs and NO_x generated during construction activities from implementation of the proposed project. Such mitigation measures have come about since 2007 when the MEMU EIR was prepared and are recommended by SCAQMD as feasible mitigation that can be applied to projects. However, even with implementation of newly developed mitigation measures **MM-AQ-1** through **MM-AQ-3**, in addition to mitigation measures **MM-OZ 4.2-2** through **MM-OZ 4.2-16** from the MEMU EIR, there is still the potential for an individual project, or combination of projects, to generate construction emissions that would exceed SCAQMD's pollutant thresholds. Therefore, similar to the impact analysis in the MEMU EIR, the construction emissions associated with the proposed project would be *significant and unavoidable*.

Threshold: Would operation of the proposed violate an air quality standard or contribute to an existing or projected air quality violation?

Impact 4.1-2: Operation of the proposed project would violate an air quality standard or contribute to an existing or projected air quality violation.

Operation

Implementation of the proposed project would not change the development capacity that was analyzed in the MEMU EIR for the original MEMU Overlay Zone project. However, given the change of the build-out year from 2030 to 2040, along with the updated traffic impact study, with revised trip rates, that has been prepared for the proposed project, an updated analysis of the proposed project's long-term operational emissions at buildout has been conducted for this SEIR.

Buildout of the MEMU Overlay Zone has the potential to result in air quality impacts from mobile, area, and energy sources. Mobile sources would include vehicle trips generated by land uses proposed within the original MEMU Overlay Zone and expansion area. Area sources would include hearths, landscaping equipment, off-gassing during the reapplication of architectural coatings, and consumer products (e.g., solvents, cleaning supplies, cosmetics, toiletries). Energy sources would include on-site natural gas combustion for space and water heating. Each of these sources was taken into account in calculating the MEMU Overlay Zone Expansion Area project's long-term operational emissions, which were quantified using CalEEMod model.

Table 4.1-3 summarizes daily mobile-, area-, and energy-source emissions, which are estimated under existing (2017) conditions and 2040 conditions with and without the proposed project. To evaluate the magnitude of change in the air quality environment due to implementation of the proposed project, emissions under this project at buildout in 2040 are compared with emissions under both existing conditions and 2040 without-project conditions. The resulting net increase in emissions for the two scenarios are compared with SCAQMD's project-level thresholds.

Table 4.1-3. Estimated Regional Operational Daily Emissions from MEMU Overlay Zone Expansion Area Project (pounds per day)

Analysis Condition/Source	VOC	NO _x	CO	SO _x	PM10	PM2.5
Existing (2017)						
Area Sources	70.57	2.53	13.32	0.02	0.26	0.26
Energy Sources	1.84	16.68	13.80	0.10	1.27	1.27
Mobile Sources	94.10	345.35	1,105.46	3.12	248.21	69.02
Daily Maximum Existing ^a	166.52	364.56	1,132.59	3.24	249.74	70.55
2040 Without MEMU Overlay Zone Expansion Area Project						
Area Sources	70.55	2.53	13.14	0.02	0.26	0.26
Energy Sources	1.84	16.68	13.80	0.10	1.27	1.27
Mobile Sources	31.22	158.74	377.26	2.01	245.37	66.18
Daily Maximum 2040 No Project ^a	103.61	177.95	404.20	2.13	246.90	67.71
2040 With MEMU Overlay Zone Expansion Area Project						
Area Sources	246.58	97.35	495.60	0.61	9.99	9.99
Energy Sources	2.68	23.22	12.09	0.15	1.85	1.85
Mobile Sources	128.05	648.12	1,575.37	8.44	1,032.66	278.49
Daily Maximum 2040 with Project ^a	377.31	768.68	2,083.06	9.20	1,044.49	290.33
2040 With Project vs. Existing (2017)	211	404	950	6	795	220
2040 With Project vs. 2040 No Project	274	591	1,679	7	798	223
Threshold ^b	55	55	550	150	150	55
Exceed Threshold?	YES	YES	YES	NO	YES	YES

Notes:

Emission outputs from CalEEMod are generated for both the summer and winter seasons, with emission levels differing slightly for the pollutants in each season. Emission levels of VOC and NO_x tend to be generally higher during the winter, while emissions of CO tend to be generally higher in the summer. Emissions of PM10 and PM2.5 remain the same during both seasons. The maximum emissions for each pollutant over the course of the summer and winter seasons are shown in this table.

Exceedances of SCAQMD thresholds are shown in **bold**.

^a Values may not add because of rounding.

^b SCAQMD's project-level thresholds were developed to analyze emissions generated by a single project and therefore offer an extremely conservative evaluation of emissions from buildout of an entire Overlay Zone area, such as buildout under the MEMU Overlay Zone Expansion Project.

As shown in Table 4.1-3 above, the proposed project would generate net emissions of VOC, NO_x, CO, PM10, and PM2.5 that would exceed established SCAQMD thresholds compared with existing and 2040 without-project conditions. Area sources would contribute the majority of VOC emissions

(with most of those attributed to the use of consumer products), while mobile sources would contribute the majority of NO_x, CO, PM10, and PM2.5 emissions. Because the proposed project's mobile-source emissions would be generated by passenger vehicles that are not regulated at the City level, there are no feasible mitigation measures available that can be implemented by the City to reduce NO_x, CO, PM10 and PM2.5 emissions. In addition, the City also does not have the authority to regulate consumer products that would be purchased by residents and employees in the Overlay Zone. Accordingly, similar to the conclusion in the MEMU EIR, operational sources under the proposed project would result in a significant and unavoidable air quality impact associated with VOCs, NO_x, CO, PM10 and PM2.5 emissions.¹ Therefore, this impact would be ***significant and unavoidable***. No feasible mitigation is available.

Threshold: Would the project result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status under an applicable federal or state ambient air quality standard (including through the release of emissions that would exceed quantitative thresholds for ozone precursors such as VOCs and NO_x)?

Impact 4.1-3: The proposed project would result in a cumulatively considerable increase in criteria pollutants for which the project region is in nonattainment status.

A significant impact may occur if a project's contribution of a federal or state nonattainment pollutant is cumulatively considerable. The SCAB, which encompasses Orange County, the area where the proposed project is located, is currently in nonattainment status for ozone (for which VOCs and NO_x are precursors) and PM2.5 under national and state standards and in nonattainment status for PM10 under state standards. As such, cumulative projects, consisting of the proposed project along with other reasonably foreseeable future projects in the SCAB as a whole, could violate an air quality standard or contribute to an existing or projected air quality violation. As discussed in the MEMU EIR, with regard to determining the significance of a project's contribution to cumulative air quality impacts, SCAQMD neither recommends quantified analyses of cumulative construction or operational emissions nor provides separate methodologies or thresholds of significance to be used to assess cumulative construction or operational impacts. Instead, SCAQMD recommends that a project's potential contribution to cumulative impacts should be assessed using the same significance criteria as those for project specific-impacts (i.e., individual development projects that generate construction-related or operational emissions that exceed SCAQMD's recommended daily thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions of those pollutants for which the SCAB is in nonattainment status).

As discussed above, daily construction emissions resulting from implementation of the proposed project would most likely exceed SCAQMD's thresholds for VOCs and NO_x, both of which are ozone precursors. Therefore, the emissions generated by construction of the proposed project would be cumulatively considerable and would constitute a substantial contribution to an existing or projected air quality violation. As described above, implementation of mitigation measures **MM-OZ 4.2-2** through **MM-OZ 4.2-16** and mitigation measures **MM-AQ-1** through **MM-AQ-3** would reduce these emissions but not to a less-than-significant level. In addition, operation of the proposed project would also generate emissions that would exceed the thresholds of significance

¹ The MEMU EIR did not analyze emissions of PM2.5 because SCAQMD did not establish a threshold at the time the EIR was prepared.

recommended by SCAQMD for VOCs, NO_x, CO, PM₁₀, and PM_{2.5} (refer to Table 4.1-3). Because no feasible mitigation measures are available to reduce these operational emissions, operation of the proposed project would therefore also make a cumulatively considerable contribution to criteria air pollutants for which the SCAB is in nonattainment status (i.e., ozone [both VOCs and NO_x are precursors], PM₁₀, and PM_{2.5}).

Because construction and operation of the proposed project would generate emissions that would exceed SCAQMD thresholds for pollutants for which the SCAB is in nonattainment status, the project's contribution of such pollutants would be cumulatively considerable. Implementation of the aforementioned mitigation measures during construction would not reduce emissions to less-than-significant levels. Currently, no feasible mitigation is available to reduce the total daily operational pollutant emissions estimated to occur under the proposed project. Thus, implementation of the proposed project would also result in the cumulative air quality impacts that would occur under the original MEMU Overlay Zone project. As such, the cumulative impact conclusion in the MEMU EIR would remain the same for the proposed project. Cumulative air quality impacts would be ***significant and unavoidable***.

Threshold: Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact 4.1-4: The proposed project would not expose sensitive receptors to substantial pollutant concentrations.

Local Air Quality Impacts—Toxic Air Contaminants

Construction

Intermittent construction activities occurring throughout the MEMU Overlay Zone and expansion area over the course of the proposed project's buildout to 2040 would result in short-term emissions of diesel PM, which is a toxic air contaminant (TAC). During construction of each new individual development within the MEMU Overlay Zone and expansion area, the exhaust of off-road heavy-duty diesel equipment would emit diesel PM during general construction activities, such as site preparation (e.g., excavation, grading, and clearing), paving, installation of utilities, materials transport and handling, building construction, and other miscellaneous activities. The short-term emissions of diesel PM associated with each new development in the Overlay Zone and expansion area would only affect its own remote group of existing sensitive receptors that are located nearby. SCAQMD has not adopted a methodology for analyzing such impacts and has not recommended that health risk assessments (HRAs) be completed for construction-related emissions of TACs.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., the potential exposure to TACs to be compared to applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment (OEHHA), HRAs—which determine the exposure of sensitive receptors to TAC emissions—for residential uses should be based on a 30-year exposure period; however, such assessments should be limited to the period or

duration of activities associated with each of the future individual developments occurring under the proposed project.

The construction period for any individual development that would occur under the proposed project over the course of the buildout period would be finite and much less than the 30-year period used for risk determination for residents. Additionally, because construction activities generally would occur sporadically and are short-term in nature, emissions generated from these activities at an individual development site would not result in any long-term exposure of sensitive receptors to TAC emissions. Because off-road heavy-duty diesel equipment would be used only temporarily at each development site, the construction activities associated with individual development projects in the MEMU Overlay Zone and expansion area would not expose sensitive receptors to substantial emissions of TACs. The impact of TACs during construction within the Overlay Zone would be ***less than significant***.

Operation

Implementation of the proposed project, while expanding the boundaries of the original 200-acre MEMU Overlay Zone by approximately 33.5 acres, would maintain the potential development capacity for the residential, commercial (retail and service), and office uses analyzed in the MEMU EIR. Unlike large industrial facilities that emit large amounts of TAC emissions, these types of land uses (i.e., residential, commercial, and office), with the exception of certain large commercial uses that operate heavy diesel machinery, are not subject to any regulatory permits and thus are not considered to be stationary sources of TAC emissions that warrant regulation. While sources of TACs from residential land uses may include household solvents, cleaners, and motor vehicle emissions, the amount of TAC emissions generated from these sources would not be appreciable and would not exceed the SCAQMD thresholds for TACs. The threshold for sensitive receptors is a carcinogenic risk that exceeds 10 in 1 million or a non-cancer Hazard Index greater than 1.0. In addition, any large commercial use associated with the proposed project that would be a stationary source of TAC emissions would be subject to the rules and regulations of SCAQMD.² Specifically, SCAQMD Regulation XIV (Toxics and Other Non-Criteria Pollutants), and in particular Rule 1401 (New Source Review of Toxic Air Contaminants), would require that all sources that possess the potential to emit TACs be required to obtain permits from SCAQMD. Permits are granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. Overall, operational TAC emissions that would result from implementation of the proposed project would be ***less than significant***.

Local Air Quality Impacts – CO Hot Spots

Elevated levels of CO concentrations are typically found in areas with significant traffic congestion. A CO hot spot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. CO is a public health concern because it can cause health problems such as fatigue, headache, confusion, dizziness, and even death. Similar to the analysis conducted in the MEMU EIR, CO concentrations were analyzed at selected study intersections to determine whether sensitive receptors would be exposed to substantial levels of this pollutant. As discussed previously, for the purpose of this analysis, the three study intersections with the highest traffic volumes, which, in turn, would have the greatest potential to result in elevated CO

² TACs are regulated at the federal, state, and local levels.

concentrations, were analyzed to determine whether CO hot spots would occur from implementation of the proposed project. These three intersections are:

- Grand Avenue at First Street
- Tustin Avenue at 17th Street
- Newport Avenue at Irvine Boulevard

Table 4.1-4 presents the CO modeling results for these three intersections under existing, future (2040) without-project, and future (2040) with-project conditions.

Table 4.1-4. CO Modeling Concentration Results (parts per million)

Receptor ^a	Worst-Case Intersections					
	Grand Avenue at First Street		Tustin Avenue at 17 th Street		Newport Avenue at Irvine Boulevard	
	1-hour CO ^b	8-hour CO ^c	1-hour CO ^b	8-hour CO ^c	1-hour CO ^b	8-hour CO ^c
Existing (2017)						
1	6.2	3.1	6.4	3.3	6.4	3.3
2	6.2	3.1	6.3	3.2	6.2	3.1
3	6.1	3.1	6.1	3.1	6.3	3.2
4	6.3	3.2	6.4	3.3	6.1	3.1
Future (2040) without Project						
1	5.8	2.9	5.9	2.9	6.0	3.0
2	5.8	2.9	6.0	3.0	5.9	2.9
3	5.9	2.9	5.8	2.9	6.0	3.0
4	5.9	2.9	5.9	2.9	5.8	2.9
Future (2040) with Project						
1	6.0	3.0	5.9	2.9	6.0	3.0
2	5.9	2.9	6.0	3.0	5.9	2.9
3	5.9	2.9	5.9	2.9	6.0	3.0
4	5.9	2.9	5.9	2.9	5.8	2.9
NAAQS	35	9	35	9	35	9
CAAQS	20	9.0	20	9.0	20	9.0

Source: CO hot-spot modeling outputs provided in Appendix B.

^a Consistent with the CO Protocol (Garza et al. 1997), receptors are located at each of the four corners of the intersections and within the mixing zones to represent the nearest location where a receptor could be located adjacent to a traveled roadway (worst-case scenario). All modeled intersections have two intersecting roadways. Each set of receptors is unique to each intersection (i.e., Receptor 1 for the Grand Avenue and First Street intersection is not the same as Receptor 1 for the Tustin Avenue and 17th Street intersection or Newport Avenue and Irvine Boulevard intersection).

^b Average 1-hour background concentration between 2015 and 2017 was 5.1 parts per million (ppm) (U.S. Environmental Protection Agency 2017).

^c Average 8-hour background concentration between 2015 and 2017 was 2.4 ppm (U.S. Environmental Protection Agency 2017).

As indicated in Table 4.1-4, the study intersections with the highest traffic volumes under the proposed project would not result in CO concentrations that would exceed the state or federal 1- or 8-hour CO standards. Consequently, the remaining study intersections, which would have lower

traffic volumes, would also not result in CO concentrations that would exceed the state or federal 1- or 8-hour standards. Overall, consistent with the conclusion in the MEMU EIR, the impact of traffic conditions on ambient CO levels in the Overlay Zone from implementation of the proposed project would be *less than significant*.

Elan Project Impacts

Threshold: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Impact 4.1-E1: Construction of the Elan Project could violate an air quality standard or contribute to an existing or projected air quality violation.

Construction of the proposed Elan Project would occur generally in a single phase, with completion of one building preceding the other by a few months to facilitate staging. Construction associated with the Elan Project would generate pollutant emissions from the following activities: (1) demolition, grading, and excavation; (2) construction workers traveling to and from project site; (3) delivering construction supplies to, and hauling debris from, the project site; (4) fuel combustion by on-site construction equipment; and (5) building construction, the application of architectural coatings, and paving. These construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants. The amount of emissions generated on a daily basis would vary, depending on the intensity and types of construction activities occurring simultaneously.

Construction of proposed project is anticipated to commence in September 2018 and continue over a 16-month period before ending in December 2019. Construction activities would generally occur between the hours of 7:00 a.m. and 4:00 p.m. Monday through Friday. Table 4.1-5 presents the Elan Project's construction phases and their estimated durations.

Table 4.1-5. Anticipated Elan Project Construction Schedule

Phases	Start (month/date/year)	Finish (month/date/year)	Duration (work days)
Demolition	09/01/2018	09/28/2018	20
Grading/Excavation	09/29/2018	12/21/2018	60
Building Construction	12/22/2018	11/08/2019	230
Architectural Coatings	10/21/2019	12/13/2019	40
Paving	11/09/2019	12/06/2019	20

Construction would require demolition of the existing Elks Lodge building at the project site. Removal of the demolition debris is estimated to require approximately five haul truck trips per day during the demolition phase. In addition, an estimated 55,000 cubic yards of soil would need to be excavated and exported from the site, requiring approximately 57 haul truck trips per day during the grading phase.

Table 4.1-6 summarizes the modeled peak daily emissions of criteria air pollutants and ozone precursors associated with construction of the Elan Project. As shown, with the exception of VOC emissions, the maximum level of daily construction emissions generated by the proposed project

would not exceed SCAQMD's daily significance thresholds for any criteria pollutants during any of the construction phases. Please refer to Appendix B for model outputs.

Table 4.1-6. Estimated Maximum Daily Criteria Pollutant Emissions from Elan Project Construction (pounds per day) – Unmitigated

Construction Phase	VOC	NO _x	CO	SO _x	PM10	PM2.5
2018						
<u>Demolition</u>						
Fugitive Dust Emissions ^a	0.00	0.00	0.00	0.00	0.77	0.12
Off-road Emissions	3.36	35.35	18.22	0.03	1.73	1.60
On-road Emissions	0.16	2.93	1.24	0.01	0.34	0.10
Maximum Daily Emissions ^b	3.52	38.28	19.45	0.04	2.84	1.82
<i>Regional Significance Threshold</i>	75	100	550	150	150	55
Exceed Threshold?	NO	NO	NO	NO	NO	NO
<u>Grading</u>						
Fugitive Dust Emissions Emissions ^a	0.00	0.00	0.00	0.00	2.60	1.32
Off-road Emissions	3.01	33.74	16.11	0.04	1.48	1.36
On-road Emissions	1.09	36.33	9.20	0.09	2.31	0.73
Maximum Daily Emissions ^b	4.11	70.06	25.31	0.13	6.39	3.41
<i>Regional Significance Threshold</i>	75	100	550	150	150	55
Exceed Threshold?	NO	No	NO	NO	NO	NO
<u>Building Construction</u>						
Off-road Emissions	2.68	23.39	17.58	0.03	1.50	1.41
On-road Emissions	3.84	19.47	29.78	0.11	8.26	2.33
Maximum Daily Emissions ^b	6.52	42.86	47.36	0.14	9.76	3.74
<i>Regional Significance Threshold</i>	75	100	550	150	150	55
Exceed Threshold?	NO	NO	NO	NO	NO	NO
2019						
<u>Building Construction plus Architectural Coatings</u>						
Building Construction						
Off-road Emissions	2.36	21.08	17.16	0.03	1.29	1.21
On-road Emissions	3.54	18.37	27.18	0.11	8.24	2.32
Subtotal Emissions ^b	5.90	39.45	44.35	0.14	9.53	3.53
Architectural Coatings						
Architectural Coating	99.66	0.00	0.00	0.00	0.00	0.00
Off-road Emissions	0.36	2.45	2.46	0.00	0.17	0.17
On-road Emissions	0.30	0.61	4.63	0.02	1.45	0.39
Subtotal Emissions ^b	100.62	3.05	7.08	0.02	1.63	0.57
Total Maximum Daily Emissions	106.52	42.51	51.43	0.15	11.16	4.09
<i>Regional Significance Threshold</i>	75	100	550	150	150	55
Exceed Threshold?	YES	NO	NO	NO	NO	NO

Construction Phase	VOC	NO _x	CO	SO _x	PM10	PM2.5
Architectural Coatings plus Paving						
Architectural Coatings						
Architectural Coating	99.6	0.00	0.00	0.00	0.00	0.00
Off-road Emissions	0.36	2.45	2.46	0.00	0.17	0.17
On-road Emissions	0.60	0.61	4.63	0.02	1.45	0.39
Subtotal Emissions ^b	100.62	3.05	7.08	0.02	1.63	0.57
Paving						
Off-road Emissions	0.77	7.90	7.56	0.01	0.42	0.39
Paving	0.00	0.00	0.00	0.00	0.00	0.00
On-road Emissions	0.05	0.14	0.39	0.00	0.12	0.03
Subtotal Emissions ^b	0.82	8.04	7.95	0.01	0.54	0.42
Total Emissions	101.44	11.10	15.03	0.03	2.17	0.99
<i>Regional Significance Threshold</i>	75	100	550	150	150	55
Exceed Threshold?	YES	NO	NO	NO	NO	NO

Notes:

Exceedances of SCAQMD thresholds are shown in **bold**.

Emission outputs from CalEEMod are generated for both the summer and winter seasons, with emission levels differing slightly for the pollutants in each season. Emission levels of VOC and NO_x tend to be generally higher during the winter, while emissions of CO tend to be generally higher in the summer. Emissions of PM10 and PM2.5 remain the same during both seasons. The maximum emissions for each pollutant over the course of the summer and winter seasons are shown in this table.

^a Fugitive dust emissions accounts for dust control measures required under SCAQMD Rule 403 (Fugitive Dust).

^b Values may not add because of rounding.

As shown in Table 4.1-6, in 2019, the overlap of the Elan Project's building construction and architectural coating phases, as well as the architectural coating and paving phases, would generate emissions of VOCs that would exceed SCAQMD's threshold. VOC emissions would be generated primarily from the application of architectural coatings (paint and primer) on the two proposed buildings at the project site. Although mitigation measures **MM-OZ 4.2-14** through **MM-OZ 4.2-16** were included in the MEMU EIR to address VOC emissions from the application of architectural coatings, implementation of these measures would not be enough to reduce the Elan Project's VOC emissions to below SCAQMD's threshold. However, implementation of mitigation measure **MM-AQ-3**, which would require the use of super-compliant VOC paint with a VOC content of 10 grams/liter (g/L) or less during construction, would reduce the Elan Project's VOC emissions to below SCAQMD's threshold.

Table 4.1-7 shows the mitigated construction emissions of VOCs after implementation of mitigation measure **MM-AQ-3**, which would be below SCAQMD's VOC threshold. Therefore, with implementation of **MM-AQ-3**, this impact would be reduced to a *less-than-significant* level.

Table 4.1-7. Estimated Maximum Daily Criteria Pollutant Emissions from Elan Project Construction (pounds per day) – Mitigated

Construction Phase	VOC
2019	
<u>Building Construction plus Architectural Coatings</u>	
Building Construction	
Off-road Emissions	2.36
On-road Emissions	3.54
Subtotal Emissions ^a	5.90
Architectural Coatings	
Architectural Coating	19.40
Off-road Emissions	0.36
On-road Emissions	0.30
Subtotal Emissions ^a	20.36
Total Maximum Daily Emissions	26.26
<i>Regional Significance Threshold</i>	75
Exceed Threshold?	NO
<u>Architectural Coatings plus Paving</u>	
Architectural Coatings	
Architectural Coating	19.40
Off-road Emissions	0.36
On-road Emissions	0.60
Subtotal Emissions ^a	20.36
Paving	
Off-road Emissions	0.77
Paving	0.00
On-road Emissions	0.05
Subtotal Emissions ^a	0.82
Total Emissions	21.18
<i>Regional Significance Threshold</i>	75
Exceed Threshold?	NO

^a Values may not add because of rounding.

Threshold: Would operation of the proposed violate an air quality standard or contribute to an existing or projected air quality violation?

Impact 4.1-E2: Operation of the Elan Project would not violate an air quality standard or contribute to an existing or projected air quality violation.

Implementation of the Elan Project would result in long-term regional emissions of criteria air pollutants or ozone precursors associated with area sources, such as natural gas consumption, landscaping activities, applications of architectural coatings, and use of consumer products, in addition to operational mobile emissions. According to the traffic impact study prepared by Linscott, Law &

Greenspan, Engineers for the Elan Project, development of the new multi-family residential uses and retail/commercial area would result in net vehicle trip generation totaling 4,648 trips per day. Table 4.1-8 presents the daily emissions that are estimated to occur during operation of the Elan Project.

Table 4.1-8. Estimated Regional Operational Daily Emissions from Elan Project (pounds per day)

Source	ROG	NO _x	CO	SO _x	PM10	PM2.5
Area Sources	16.07	10.58	54.30	0.07	1.08	1.08
Energy Sources	0.20	1.74	0.74	0.01	0.14	0.14
Mobile Sources	7.11	29.84	95.48	0.34	29.81	8.20
Total Emissions ^a	23.38	42.16	150.52	0.42	31.03	9.42
<i>Regional Significance Threshold</i>	55	55	550	150	150	55
Exceed Threshold?	NO	NO	NO	NO	NO	NO

Notes:

Emissions would be slightly different during the summer and winter seasons. Emission levels of VOC and NO_x tend to be generally higher during the winter, while emissions of CO and SO_x tend to be generally higher in the summer. Emissions of PM10 and PM2.5 remain the same during both seasons. The maximum emissions for each pollutant over the course of the summer and winter seasons are shown in this table.

ROG = reactive organic gas

^a Values may not add because of rounding.

As shown in Table 4.1-8, operation of the Elan Project would not generate emissions that would exceed the thresholds of significance recommended by SCAQMD for reactive organic gas (ROG), NO_x, CO, SO_x, PM10, or PM2.5. Therefore, operation of the proposed project would not result in an air quality violation, and the impact would be *less than significant*. No mitigation measures are required.

Threshold: Would the project result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status under an applicable federal or state ambient air quality standard (including through the release of emissions that exceed quantitative thresholds for ozone precursors such as VOCs and NO_x)?

Impact 4.1-E3: The proposed Elan Project would not result in a cumulatively considerable increase in criteria pollutants for which the project region is in nonattainment status.

A significant impact may occur if a project's contribution of a federal or state nonattainment pollutant is cumulatively considerable. The SCAB, which encompasses Orange County, the area where the Elan Project is located, is currently in nonattainment status for ozone (for which ROG and NO_x are precursors) and PM2.5 under national and state standards and in nonattainment status for PM10 under state standards. As such, cumulative development, consisting of the Elan Project along with other reasonably foreseeable future projects in the SCAB as a whole, could violate an air quality standard or contribute to an existing or projected air quality violation.

According to SCAQMD, if an individual project would result in emissions of criteria pollutants that would exceed SCAQMD's recommended daily thresholds for project-specific impacts, then the project would also result in a cumulatively considerable net increase in such criteria pollutants. As discussed above in Threshold 2 and Table 4.1-6, construction-related daily emissions associated

with project development would exceed SCAQMD thresholds for VOCs during overlap of the building construction and architectural coating phases, with the vast majority of the emissions resulting from the application of paints and primers on the new buildings. Consequently, emissions generated by construction of the Elan Project would be cumulatively considerable and would constitute a substantial contribution to an existing or projected air quality violation without mitigation. However, with implementation of mitigation measure **MM-AQ-3**, which would require the use of super-compliant VOC paints with a VOC content of 10 g/L or less during construction, the Elan Project's VOC emissions would be reduced to below SCAQMD's threshold. Thus, with mitigation, the Elan Project's construction-related regional emissions would not make a cumulatively considerable contribution to criteria pollutants for which the SCAB is in nonattainment status, and impacts would be **less than significant**.

As discussed above in Threshold 2 and Table 4.1-8, operation of the Elan Project would not generate daily emissions that would exceed the thresholds of significance recommended by SCAQMD for any of the criteria pollutants (i.e., ROG, NO_x, CO, SO_x, PM10, and PM2.5). Thus, operation of the Elan Project would not make a cumulatively considerable contribution to criteria air pollutants for which the SCAB is in nonattainment status. Impacts would be **less than significant**.

Threshold: Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact 4.1-E4: The proposed Elan Project would not expose sensitive receptors to substantial pollutant concentrations.

Local Air Quality Impacts—Criteria Pollutants

Construction

To assess potential localized air quality impacts associated with criteria pollutants resulting from the Elan Project on nearby sensitive receptors during construction, daily on-site construction emissions generated at the Elan Project site were evaluated against SCAQMD's applicable construction LSTs for a 5-acre site for the purposes of conducting a screening-level analysis. The nearest sensitive receptors that may be exposed to localized air quality impacts from the Elan Project include the multi-family residential uses directly adjacent to the project site to the south and the multi-family residential uses to the west, across Lyon Street, which are approximately 76 feet from the westernmost boundary of the Elan Project site. Because the mass rate look-up tables provided by SCAQMD provide only LSTs at receptor distances of 82, 164, 328, 656, and 1,640 feet, the LSTs for a receptor distance of 82 feet were used to evaluate the potential localized air quality impacts associated with the project's peak-day construction emissions.³

Table 4.1-9 presents the unmitigated localized on-site emissions that are estimated to occur during peak construction days for each year of the Elan Project's construction schedule. As shown in Table 4.1-9, the daily unmitigated emissions generated on-site by construction of the Elan Project would not exceed any of the applicable SCAQMD LST screening thresholds for a 5-acre site in SRA 17 over the course of the entire construction schedule. Thus, the localized construction air quality impacts of the Elan Project would be **less than significant**.

³ According to SCAQMD's LST methodology, it is recommended that projects with boundaries closer than 82 feet (25 meters) from the nearest receptor use the LSTs for receptors located at 82 feet.

Table 4.1-9. Elan Project Localized Criteria Pollutant Construction Emissions (pounds per day)

Construction Phase	NO_x	CO	PM10	PM2.5
2018				
Demolition				
Fugitive Dust Emissions ^a	0.00	0.00	0.77	0.12
Off-road Emissions	35.35	18.22	1.73	1.60
Total Emissions ^b	35.35	18.22	2.50	1.72
<i>Localized Significance Threshold</i>	183	1253	13	7
Exceed Threshold?	NO	NO	NO	NO
Grading				
Fugitive Dust Emissions ^a	0.00	0.00	2.60	1.32
Off-road Emissions	33.74	16.11	1.48	1.36
Total Emissions ^b	33.74	16.11	4.08	2.68
<i>Localized Significance Threshold</i>	183	1253	13	7
Exceed Threshold?	NO	NO	NO	NO
Building Construction				
Off-road Emissions	23.39	17.58	1.50	1.41
Total Emissions ^b	23.39	17.58	1.50	1.41
<i>Regional Significance Threshold</i>	183	1253	13	7
Exceed Threshold?	NO	NO	NO	NO
2019				
Building Construction				
Off-road Emissions	21.08	17.16	1.29	1.21
Subtotal Emissions ^b	21.08	17.16	1.29	1.21
Architectural Coatings				
Architectural Coating	0.00	0.00	0.00	0.00
Off-road Emissions	2.45	2.46	0.17	0.17
Subtotal Emissions ^b	2.45	2.46	0.17	0.17
Total Emissions	23.53	19.62	1.46	1.38
<i>Localized Significance Threshold</i>	183	1253	13	7
Exceed Threshold?	NO	NO	NO	NO
Architectural Coatings				
Architectural Coating	0.00	0.00	0.00	0.00
Off-road Emissions	2.45	2.46	0.17	0.17
Subtotal Emissions ^b	2.45	2.46	0.17	0.17
Paving				
Off-road Emissions	7.90	7.56	0.42	0.39
Paving	0.00	0.00	0.00	0.00
Subtotal Emissions ^b	7.90	7.56	0.42	0.39
Total Emissions	10.35	10.02	0.59	0.56
<i>Localized Significance Threshold</i>	183	1253	13	7
Exceed Threshold?	NO	NO	NO	NO

Construction Phase	NO _x	CO	PM10	PM2.5
^a Fugitive dust emissions accounts for dust control measures required under SCAQMD Rule 403 (Fugitive Dust).				
^b Values may not add because of rounding.				

Operations

Similar to the analysis of construction emissions, the daily amount of localized criteria pollutant emissions generated on-site by the Elan Project during operations was also assessed for its potential localized air quality impacts on nearby sensitive receptors. Table 4.1-10 presents the Elan Project's on-site operational emissions. As shown, the Elan Project's on-site operational emissions generated would not exceed SCAQMD's applicable operational LST screening thresholds. Thus, localized air quality impacts during the Elan Project's operations would be *less than significant*.

Table 4.1-10. Elan Project Localized Criteria Pollutant Operational Emissions (pounds per day)

Source	NO _x	CO	PM10	PM2.5
Area Sources	10.58	54.30	1.08	1.08
Energy Sources	1.74	0.74	0.14	0.14
Total Emissions ^a	12.33	55.04	1.22	1.22
<i>Localized Significance Threshold</i>	183	1253	13	7
Exceed Threshold?	NO	NO	NO	NO

Notes:

^a Values may not add because of rounding.

Local Air Quality Impacts—TACs

Construction

The operation of off-road heavy-duty diesel equipment during construction of the Elan Project would generate short-term emissions of diesel PM, which is a TAC. Emissions of diesel PM would result during site grading and excavation, paving, installation of utilities, materials transport and handling, building construction, and other miscellaneous activities at the Elan Project site. As discussed previously under the analysis for the MEMU Overlay Zone Expansion, OEHHA recommends that HRAs analyzing the exposure of sensitive receptors to TAC emissions be based on a 30-year exposure period for residential uses; however, such assessments should be limited to the period or duration of activities associated with the project. As the Elan Project is anticipated to be constructed over a 16-month period from September 2018 through December 2019, this construction period would be much less than the 30-year period used for risk determination for residents. Given the relatively short duration of the construction schedule, the Elan Project would not result in a substantial, long-term (i.e., 30-year) source of TAC emissions. Additionally, the SCAQMD CEQA guidance does not require an HRA for short-term construction emissions. Overall, because the Elan Project's construction activities would be short-term in nature, combustion emissions generated from construction activities at the development site would not result in any long-term exposure of nearby sensitive receptors to TAC emissions. The impact of TACs during construction of the Elan Project would be *less than significant*.

Operation

The proposed Elan Project, which consists of two mixed-use (residential and commercial) structures that would include a total of 603 residential units and approximately 8,500 square feet of commercial uses at the ground floor, is not a type of land use that would generate substantial TAC emissions during its operations. The Elan Project would not introduce any stationary sources of TACs, such as diesel-fueled backup generators that are more commonly associated with large commercial and industrial uses, or involve any manufacturing processes (e.g., chrome plating, electrical manufacturing, petroleum refining processes) that would be sources of TACs. While sources of TACs from the new residential uses of the Elan Project may include household solvents, cleaners, paints, and motor vehicle emissions, the amount of TAC emissions generated from these sources would not be appreciable and would not exceed the SCAQMD thresholds for TACs. The threshold for sensitive receptors is a carcinogenic risk that exceeds 10 in 1 million or a non-cancer Hazard Index greater than 1.0. Overall, operation of the proposed residential uses and associated commercial space associated with the Elan Project would not expose surrounding sensitive receptors to substantial TAC emissions such that health risks could result. As such, this impact would be *less than significant*.

Off-Site TAC Sources

The proposed Elan Project site is located less than 500 feet from I-5 and the I-5 on-ramp at 1st Street, which is considered to be a major source of traffic-generated pollutants because of the high volume of vehicles that travel on this freeway on a daily basis. According to CARB, locating a sensitive land use within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural road with 50,000 vehicles per day can expose the sensitive land use to an estimated increased cancer risk of 300 to 1,700 per million. CARB requires site-specific analysis to determine the actual risk near a particular land use, considering prevailing wind direction, local topography, and climate. For the Elan Project, an HRA was conducted to evaluate the cancer-risk associated with the project's proximity to the I-5 Freeway. This HRA is included in Appendix B2 of this SEIR.

In conducting the HRA analysis, the AMS/EPA Regulatory Model AERMOD was used to assess the impact of emitted compounds on individuals at the proposed Elan Project site. The analysis involved use of CARB's EMFAC2017 emission factor model to identify pollutant emission rates for total organic gases (TOG), diesel particulates (DPM), PM10, PM2.5, CO, and NO_x compounds. Vehicle fleet distribution was developed using CARB's Orange County population estimates for the 2020 calendar year. Assumptions for daily breathing rates, exposure frequency, and exposure duration were obtained from relevant distribution profiles presented in the 2015 OEHHA Guidelines, and guidance from SCAQMD.

According to SCAQMD *CEQA Air Quality Handbook (1993)*, emissions of TACs are considered significant if an HRA shows an increased cancer risk of greater than ten in one million. This significance threshold is used to evaluate emissions of a project on the surrounding environment, and is typically not used to assess the impact of the existing environmental conditions on a project's future users or residents. This issue was the topic of the CBIA vs. BAAQMD California Supreme Court case in 2015⁴, which concluded that CEQA does not generally require an agency to consider the effects of existing environmental conditions on a proposed project's future uses or residents. The

⁴ California Building Industry Association v. Bay Area Air Quality Management District. December 2015. Available at: <https://caselaw.findlaw.com/ca-supreme-court/1721100.html>.

case did find that there may be certain special circumstances where the project risks exacerbating existing conditions would require the “reverse-CEQA” analysis. Although these special circumstances do not pertain to the proposed project, an HRA was performed as an informative practice and for the purpose of disclosure under CEQA of how existing conditions might affect the Elan Project’s future residents. While the assessment and significance determination are not required for the proposed Elan Project’s environmental analysis, the SCAQMD significance threshold of ten in one million will be used here for reference.

For carcinogenic exposures resulting from toxics from the I-5 freeway, the HRA found that the risk for the maximum exposed residential receptor at the proposed Elan Project site totaled 14.22 in one million.⁵ This risk level implies a likelihood that up to 14.22 people, out of one million equally exposed people, would contract cancer if exposed continuously to the levels of TACs from the I-5 freeway and I-5 on-ramp. This risk level exceeds the SCAQMD threshold of ten in one million.

Local Air Quality Impacts—CO Hot Spots

Elevated levels of CO concentrations are typically found in areas with significant traffic congestion. CO is a public health concern because it can cause health problems such as fatigue, headache, confusion, dizziness, and even death. As discussed previously, for the purpose of this analysis, the three study intersections with the highest traffic volumes, which, in turn, would have the greatest potential to result in elevated CO concentrations, were analyzed to determine whether CO hot-spots would occur from implementation of the proposed project. These three intersections are:

- State Route 55 (SR-55) northbound (NB) ramps at Fourth Street
- Tustin Avenue at Fourth Street
- Grand Avenue at First Street

Table 4.1-11 presents the CO modeling results for these three intersections under existing, future (2020) without-project, and future (2020) with-project conditions.

⁵ This risk level estimated for the residents of the Elan Project accounts for the installation and maintenance of air filtration systems at the two mixed-use buildings that have efficiencies equal to or exceeding a Minimum Efficiency Reporting Value (MERV) 13, as defined by the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 52.2. The MERV 13 air filtration systems, which can reduce diesel PM and particulates, are proposed as part of the Elan Project design.

Table 4.1-11. CO Modeling Concentration Results (parts per million)

Receptor ^a	Worst-Case Intersections					
	SR-55 NB Ramps at Fourth Street		Tustin Avenue at Fourth Street		Grand Avenue at First Street	
	1-hour CO ^b	8-hour CO ^c	1-hour CO ^b	8-hour CO ^c	1-hour CO ^b	8-hour CO ^c
Existing						
1	6.3	3.2	6.2	3.1	6.2	3.1
2	6.2	3.1	6.1	3.1	6.2	3.1
3	6.0	3.0	6.2	3.1	6.1	3.1
4	6.0	3.0	6.1	3.1	6.3	3.2
Future (2020) without Project						
1	6.1	3.1	6.0	3.0	6.0	3.0
2	6.0	3.0	6.0	3.0	5.9	3.0
3	5.9	2.9	6.0	3.0	5.9	3.0
4	5.8	2.9	6.0	3.0	6.1	3.0
Future (2020) with Project						
1	6.1	3.1	6.1	3.1	6.0	3.0
2	6.0	3.0	6.0	3.0	5.9	3.0
3	5.9	2.9	6.0	3.0	5.9	3.0
4	5.8	2.9	6.0	3.0	6.1	3.0
NAAQS	35	9	35	9	35	9
CAAQS	20	9.0	20	9.0	20	9.0

Source: CO hot-spot modeling outputs provided in Appendix B.

- a. Consistent with the CO Protocol (Garza et al. 1997), receptors are located at each of the four corners of the intersections and within the mixing zones to represent the nearest location where a receptor could be located adjacent to a traveled roadway (worst-case scenario). All modeled intersections have two intersecting roadways. Each set of receptors is unique to each intersection (i.e., Receptor 1 for the SR-55 NB ramps and Fourth Street intersection is not the same as Receptor 1 for the Tustin Avenue and Fourth Street intersection or Grand Avenue and First Street intersection).
- b. Average 1-hour background concentration between 2015 and 2017 was 5.1 ppm (U.S. Environmental Protection Agency 2017).
- c. Average 8-hour background concentration between 2015 and 2017 was 2.4 ppm (U.S. Environmental Protection Agency 2017).

As indicated in Table 4.1-11, the study intersections with the highest traffic volumes under the Elan Project would not result in CO concentrations that would exceed the state or federal 1- or 8-hour CO standards. Consequently, all remaining study intersections, which would have lower traffic volumes, would also not result in CO concentrations that would exceed the state or federal 1- or 8-hour standards. Overall, the impact of the Elan Project's traffic conditions on ambient CO levels would be *less than significant*.

Mitigation Measures Applicable to the Proposed Project

Implementation of mitigation measures **MM-OZ 4.2-1** through **MM-OZ 4.2-16** from the MEMU EIR would apply to the proposed project.

- MM-OZ 4.2-1** Trash receptacles within the Overlay Zone will be required to have lids that enable convenient collection and loading and emptied on a regular basis, in compliance with City of Santa Ana regulations for the collection of solid waste.
- MM-OZ 4.2-2** The developer shall require by contract specifications that all diesel-powered equipment be retrofitted with after-treatment products (e.g., engine catalysts or other available technologies) when construction activities commence. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.
- MM-OZ 4.2-3** The developer shall require by contract specifications that all heavy-duty diesel-powered equipment operating and refueling at the project site use low-NO_x diesel fuel to the extent that it is readily available and cost effective (up to 125 percent of the cost of CARB diesel) in the South Coast Air Basin at the time construction activities commence. This requirement shall not apply to diesel-powered trucks traveling to and from the project site. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.
- MM-OZ 4.2-4** The developer shall require by contract specifications that alternative-fuel (e.g., compressed natural gas, liquid petroleum gas) construction equipment be used to the extent feasible in the South Coast Air Basin at the time construction activities commence. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.
- MM-OZ 4.2-5** The developer shall require by contract specifications that construction equipment engines be maintained in good condition and in proper tune per manufacturer's specification for the duration of construction. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.
- MM-OZ 4.2-6** The developer shall require by contract specifications that construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, be turned off when not in use for more than 5 minutes. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.
- MM-OZ 4.2-7** The developer shall require by contract specifications that construction operations rely on the electricity infrastructure surrounding the construction site rather than electrical generators powered by internal combustion engines to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.
- MM-OZ 4.2-8** The developer shall require by contract specifications that construction parking be configured to minimize traffic interference during the construction period

and, therefore, reduce idling of traffic. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.

- MM-OZ 4.2-9** The developer shall require by contract specifications that temporary traffic controls are provided, such as a flag person, during all phases of construction to maintain smooth traffic flow. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.
- MM-OZ 4.2-10** The developer shall require by contract specifications that construction activities that affect traffic flow on the arterial system be scheduled to off-peak hours (10:00 a.m. to 4:00 p.m.). Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.
- MM-OZ 4.2-11** The developer shall require by contract specifications that dedicated on-site and off-site left-turn lanes on truck hauling routes be used for the movement of construction trucks and equipment on-site and off-site to the extent feasible during construction activities. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.
- MM-OZ 4.2-12** Upon issuance of building or grading permits, whichever is issued earliest, notification shall be mailed to owners and occupants of all developed land uses within 0.25 mile of the Overlay Zone, and individual projects within the Overlay Zone shall provide a schedule for major construction activities that will occur through the duration of the construction period. In addition, the notification will include the identification and contact number for a community liaison and designated construction manager who would be available on-site to monitor construction activities. The construction manager shall be responsible for complying with all project requirements related to PM10 generation. The construction manager will be located at the on-site construction office during construction hours for the duration of all construction activities. Contract information for the community liaison and construction manager will be located at the construction office, City Hall, and police department and on a sign on-site.
- MM-OZ 4.2-13** As required by SCAQMD Rule 403, Fugitive Dust, all construction activities that are capable of generating fugitive dust are required to implement dust control measures during each phase of project development to reduce the amount of particulate matter entrained in the ambient air. These measures include the following:
- Limit the amount of area disturbed during site grading to 10 acres per day
 - Apply soil stabilizers to inactive construction areas
 - Replace ground cover quickly in disturbed areas
 - Water exposed surfaces three times daily
 - Water all unpaved haul roads three times daily

- Cover all stock piles with tarp
- Reduce vehicle speed on unpaved roads
- Post signs on-site, limiting traffic to 15 miles per hour or less
- Sweep streets adjacent to the project site at the end of the day if visible soil material is carried over to adjacent roads
- Cover or water the exposed surface of all trucks hauling dirt, sand, soil, or other loose materials prior to leaving the site to prevent dust from affecting surrounding areas
- Install wheel washers where vehicles exit unpaved roads and enter paved roads

MM-OZ 4.2-14 The developer shall require by contract specifications that the architectural coating (paint and primer) products used have a VOC rating of 100 g/L or less. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed and approved by the City of Santa Ana Planning and Building Agency staff.

MM-OZ 4.2-15 The developer shall require by contract specifications that materials that do not require painting be used during construction to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed and approved by the City of Santa Ana Planning and Building Agency staff.

MM-OZ 4.2-16 The developer shall require by contract specifications that pre-painted construction materials be used to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed and approved by the City of Santa Ana Planning and Building Agency staff.

New Mitigation Measures Applicable to the Proposed Project

The following mitigation measures are newly developed for potential impacts from implementation of the proposed project. **MM-AQ-1** and **MM-AQ-2** serve to reduce pollutant emissions generated from construction activities with off-road equipment and on-road vehicles, respectively. **MM-AQ-3** addresses air quality impacts related to VOC emissions generated from the application of architectural coatings during the construction of the new land uses associated with expansion of the MEMU Overlay Zone.⁶

MM-AQ-1 **Require Tier 4 engines on Construction Equipment.** All applicants proposing development of projects within the MEMU Overlay Zone and expansion area shall require their contractors, as a condition of contract, to further reduce

⁶ Mitigation Measure MM-OZ 4.2-14 was included in the MEMU EIR to reduce VOC emissions from the application of architectural coatings by requiring use of paint and primer products that have a VOC rating of 100 grams per liter (g/L) or less. However, since publication of the MEMU EIR in 2007, architectural coating products that have an even lower VOC content (i.e., super-compliant VOC paints that have a VOC content of 10 g/L or less) have been introduced into the market and are readily available. As such, the inclusion of MM-AQ-3 in this SEIR is meant to supersede and replace MM-OZ 4.2-14.

construction-related exhaust emissions by ensuring that all off-road equipment greater than 50 horsepower and operating for more than 20 total hours over the entire duration of construction activities shall operate with an U.S. Environmental Protection Agency- (EPA-) approved Tier 4 or newer engine. Exemptions can be made for specialized equipment where Tier 4 engines are not commercially available within 200 miles of the MEMEU Overlay Zone and expansion area. The construction contract must identify these pieces of equipment, document their unavailability, and ensure that they operate on no less than an EPA-approved Tier 3 engine.

MM-AQ-2 **Require the Use of 2010 and Newer Haul Trucks during Construction.** All applicants proposing development of projects within the MEMU Overlay Zone and expansion area shall require their contractors, as a condition of contract, to use diesel trucks that have 2010 model year or newer engines. In the event that 2010 model year or newer diesel trucks cannot be obtained, the contractor must provide documentation to the City showing that a good-faith effort to locate such engines was conducted.

MM-AQ-3 **Require Low-VOC Coatings during Construction.** All applicants proposing development of projects within the MEMU Overlay Zone and expansion area shall require their contractors, as a condition of contract, to reduce construction-related fugitive VOC emissions by ensuring that low-VOC coatings with a VOC content of 10 g/L or less are used during construction. The project applicant will submit evidence of the use of low-VOC coatings to SCAQMD prior to the start of construction.

4.2 Cultural Resources

Summary of MEMU EIR Findings

The certified MEMU EIR found that that implementation of the MEMU Overlay Zone had the potential to result in impacts on cultural resources thresholds involving historical resources, archaeological resources, unique paleontological resources, and human remains. However, with incorporation of mitigation measures, these impacts were determined to be less than significant. Because the proposed project would extend the boundaries of the MEMU Overlay Zone into an area of the City not previously evaluated in the MEMU EIR, it was determined that a new or substantially more severe impact on cultural resources could occur, and therefore all of these thresholds were fully evaluated in this SEIR.

- Redevelopment within the MEMU Overlay Zone could result in demolition or major modification of buildings or structures that have reached the 50-year age benchmark for historical resource consideration, and that have not yet been evaluated to determine their significance as defined by Section 15064.5 of the State CEQA Guidelines. This is a potentially significant impact. Mitigation measure **MM-OZ 4.4-1** stipulates that the City of Santa Ana shall require as part of the environmental review of development projects within the MEMU Overlay Zone that impacts on potentially significant historical resources be considered. If any existing structures on a proposed development site are at or approaching 50 or more years of age at the time of CEQA review, the City shall retain the services of a qualified architectural historian to conduct a field survey of the structure in question and prepare a technical study to determine its potential historical significance and develop mitigation measures as necessary.
- Redevelopment within the MEMU Overlay Zone has the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.05 of the State CEQA Guidelines, and this would be considered a significant impact. Mitigation measure **MM-OZ 4.4-2** states that, as a result of a lack of cultural resource studies for the MEMU Overlay Zone, and in order to avoid damaging any unidentified cultural resources, a qualified archaeologist should be retained to monitor any significant ground-disturbing activities in undeveloped areas within the MEMU Overlay Zone, and any deep (10 inches or deeper) ground-disturbing activities in all areas of the MEMU Overlay Zone. As stipulated in **MM-OZ 4.4-3**, in the event that archaeological resources are unearthed during project subsurface activities, all earth-disturbing work within a 100-meter radius must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find. After the find has been appropriately mitigated, work in the area may resume.
- Implementation of the MEMU Overlay Zone has the potential to directly or indirectly destroy a unique paleontological resource or site, or a unique geologic feature, any of which would be considered a significant impact. Mitigation measure **MM-OZ-4.4-4** states that, in the event that paleontological resources are unearthed during subsurface construction activities, all earth-disturbing work within a 100-meter radius of the find must be temporarily suspended or redirected until a paleontologist has evaluated the nature and significance of the find. After the find has been appropriately mitigated, work in the area may resume.

- Implementation of the MEMU Overlay Zone could involve project-level construction activities with potential to result in the disturbance of human remains interred outside of formal cemeteries. Mitigation measure **MM-OZ 4.4-5** states that if human remains are unearthed, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC will then contact the most likely descendant of the deceased Native American, who will then serve as consultant on how to proceed with the remains.

Impacts of Proposed Project

MEMU Overlay Zone Expansion Area

Threshold: Would the proposed project cause a substantial adverse change in the significance of a historical resource as defined by Section 15064.5 of the State CEQA Guidelines?

Impact 4.2-1. Redevelopment of sites within the MEMU Overlay Zone expansion area could result in the demolition or major modification of historically aged structures that have not yet been evaluated to determine their significance as defined by Section 15064.5 of the State CEQA Guidelines.

As with the original MEMU Overlay Zone, redevelopment within the MEMU Overlay Zone expansion area could result in demolition or major modification of buildings or structures that have reached the 50-year age benchmark for historical resource consideration, and that have not yet been evaluated. Therefore, implementation of the proposed project could cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the State CEQA Guidelines. Demolition or alteration of a building or structure 50 years or older that has not been listed in the National Register of Historic Places (NRHP), and has not been evaluated for California Register of Historical Resources (CRHR) and Santa Ana Historic Property Register eligibility, could result in a significant impact on a historical resource. As with the original MEMU Overlay Zone and described above in the summary, implementation of mitigation measure **MM-OZ 4.4-1** would ensure that any historical resources within the MEMU Overlay Zone expansion area are identified, and that impacts on such resources are analyzed and mitigated if necessary at the project level. Impacts from implementation of the proposed project would be similar to those evaluated in the MEMU EIR. Implementation of mitigation measure **MM-OZ 4.4-1** would provide a means for reducing impacts to **less than significant**. Any project-specific action determined to have a significant unavoidable impact on a historical resource would need to be addressed at the project level.

Threshold: Would the proposed project cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5 of the State CEQA Guidelines?

Impact 4.2-2. Implementation of the proposed project has the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines.

The MEMU Overlay Zone expansion area contains no previously recorded prehistoric or historic archaeological resources. Two cultural resources studies cover portions of the expansion area. One historic archaeological resource has been recorded along a railroad line approximately 1,500 feet northwest of the expansion area. The MEMU Overlay Zone expansion area appears to have low prehistoric or historic archaeological resource sensitivity, though it is possible that deeper cultural deposits could be present below surface sediments. Therefore, construction activities at the project level have potential to cause a substantial adverse change in the significance of an archaeological resource within the expansion area. As with the original MEMU Overlay Zone and described above in the summary to this section, implementation of mitigation measure **MM-OZ 4.4-2** from the MEMU EIR would ensure that significant ground-disturbing activities in undeveloped areas within the MEMU Overlay Zone expansion area, and any deep (10 inches or deeper) ground-disturbing activities in the MEMU Overlay Zone expansion area, would be monitored by a qualified archaeologist. Mitigation measure **MM-OZ 4.4-3** from the MEMU EIR stipulates that in the event that subsurface activities unearth archaeological resources, all earth-disturbing work within a 100-meter radius would be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find, and that work in the area resumes only after the find has been appropriately mitigated. Implementation of mitigation measures **MM-OZ 4.4-2** and **MM-OZ-4.4-3** from the MEMU EIR would ensure that any impacts to the significance of an archaeological resource within the MEMU Overlay Zone expansion area would be reduced to *less than significant*.

Threshold: Would the proposed project directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature?

Impact 4.2-3. Implementation of the proposed project has the potential to directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature.

The younger terrestrial Quaternary Alluvium at the uppermost strata of the MEMU Overlay Zone expansion area surface is underlain by older Quaternary sediments. Because these older, deeper sediments have the potential to produce significant vertebrate fossils, the paleontological sensitivity of the expansion area is considered high. At the project level, surface grading or shallow excavation in the uppermost layers of younger Quaternary alluvial sediments within the MEMU Overlay Zone expansion area are unlikely to encounter fossil vertebrate remains. However, ground-disturbing construction activities that reach deeper, older Quaternary sediments with potential Pleistocene deposits do have the potential to result in direct or indirect destruction of a unique paleontological resource. Mitigation measure **MM-OZ-4.4-4** from the MEMU EIR is not sufficient in the current context of Orange County paleontological resource understanding and CEQA practice to ensure that potential impacts from the proposed project would be mitigated to less than significant. Therefore, mitigation measure **MM-CUL-1** has been developed to supersede **MM-OZ-4.4-4** and is required to

ensure that potential impacts on paleontological resources from implementation of the proposed project would be *less than significant*.

Threshold: Would the proposed project disturb human remains, including those interred outside of formal cemeteries?

Impact 4.2-4. Construction activities under the proposed project could result in the disturbance of human remain interred outside of formal cemeteries.

Although the prospect is unlikely, implementation of the proposed project could involve project-level ground-disturbing construction activities with the potential to result in the disturbance of human remains interred outside of formal cemeteries. As with the original MEMU Overlay Zone and described above in the summary to this section, mitigation measure **MM-OZ 4.4-5** from the MEMU EIR states that if human remains are unearthed, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC will then contact the most likely descendant of the deceased Native American, who will then serve as consultant on how to proceed with the remains. Therefore, implementation of mitigation measure **MM-OZ 4.4-5** would reduce impacts to *less than significant*.

Elan Project

Threshold: Would the proposed project cause a substantial adverse change in the significance of a historical resource as defined by Section 15064.5 of the State CEQA Guidelines?

Impact 4.2-E1. Development of the Elan Project would result in a substantial adverse change to a historical resource.

The Santa Ana Elks Lodge was been found eligible for listing in the CRHR and the Santa Ana Historic Property Register. The resource is considered a historical resource under CEQA. State CEQA Guidelines Section 15064.5(b)(1) defines a substantial adverse change as one that would materially impair the significance of a historical resource. Section 15064.5(2)(C) states that the significance of a historical resource is materially impaired when a project “demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for the purposes of CEQA.” Because the proposed Elan Project would demolish the Santa Ana Elks Lodge, it would result in a substantial adverse change to a historical resource. Mitigation measures **MM-CUL-2 through MM-CUL-4** would reduce impacts, but not to a less-than-significant level. As discussed in Chapter 6, *Alternatives*, the Santa Ana Elks Lodge property cannot be relocated or preserved. Therefore, there are no mitigation measures to reduce this impact to a less-than-significant level, and impacts would be *significant and unavoidable*.

Threshold: Would the proposed project cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5 of the State CEQA Guidelines?

Impact 4.2-E2. Implementation of the Elan Project has the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines.

Located within the MEMU Overlay Zone expansion area, the Elan Project area has the same low overall sensitivity for prehistoric or historic archaeological resources, though it is possible that deeper cultural deposits could be present below surface sediments. However, construction activities associated with the proposed Elan Project would involve excavation well below surface sediments, and could thereby disturb prehistoric archaeological remains and other cultural deposits. Therefore, the Elan Project has the potential to cause a substantial adverse change in the significance of an archaeological resource. As with the MEMU Overlay Zone expansion area, mitigation measures **MM-OZ 4.4-2** and **MM-OZ-4.4-3** from the MEMU EIR would be required for the Elan Project. With implementation of these two mitigation measures, impacts on an archaeological resource within the Elan Project site would be reduced to *less than significant*.

Threshold: Would the proposed project directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature?

Impact 4.2-E3. Implementation of the Elan Project has the potential to directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature.

The Elan Project area is within the MEMU Overlay Zone expansion area, which has high paleontological sensitivity. Impacts on paleontological resources could occur from subsurface grading and excavation that disturbs older, deeper Quaternary sediments containing Pleistocene deposits that could contain paleontological resources. Activities associated with the Elan Project, including excavation for and construction of two levels of underground parking, have the potential to result in direct or indirect destruction of a unique paleontological resource. As discussed above for the MEMU Overlay Zone expansion area, with implementation of newly developed mitigation measure **MM-CUL-1**, impacts on paleontological resources would be reduced to *less than significant*.

Threshold: Would the proposed project disturb human remains, including those interred outside of formal cemeteries.

Impact 4.2-E4. Construction of the Elan Project could result in the disturbance of human remains interred outside of formal cemeteries.

The Elan Project area's location within the MEMU Overlay expansion area gives it the same unlikelihood of producing human remains interred outside of formal cemeteries during ground-disturbing construction activities associated with the project. However, just as with the proposed project, it remains possible that human remains could be discovered during construction of the Elan

Project. Therefore, implementation of mitigation measure **MM-OZ 4.4-5** from the MEMU EIR would be required to reduce impacts on human remains to *less than significant*.

Mitigation Measures Applicable to the Proposed Project

Applicable Mitigation Measures from the MEMU EIR

Implementation of the following mitigation measures from the MEMU EIR would apply to projects proposed in the MEMU Overlay Zone expansion area, including the Elan Project.

- MM-OZ 4.4-1** The City of Santa Ana shall require as part of the environmental review of development projects within the Overlay Zone Expansion Area that impacts to potentially significant historical resources be considered. If any existing structures on a proposed development site are at or approaching 50 or more years of age at the time of CEQA review, the City shall retain the services of a qualified architectural historian to conduct a field survey of the structure in question and technical study to determine its potential historical potential significance and develop mitigation measures as necessary.
- MM-OZ 4.4-2** Due to the lack of cultural resource studies for the Overlay Zone Expansion Area, and in order to avoid damaging any unidentified cultural resources, a qualified archaeologist would be retained to monitor any significant ground-disturbing activities in undeveloped areas within the Expansion Area, and any deep (10" or deeper) ground-disturbing activities in all areas of the Expansion Area.
- MM-OZ 4.4-3** In the event that archaeological resources are unearthed during project subsurface activities, all earth-disturbing work within a 100-meter radius must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find. After the find has been appropriately mitigated, work in the area may resume.
- MM-OZ 4.4-5** If human remains are unearthed, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC will then contact the most likely descendant of the deceased Native American, who will then serve as consultant on how to proceed with the remains.

New Mitigation Measures Required for the MEMU Overlay Zone Expansion Area and the Elan Project

Implementation of newly developed mitigation measure **MM-CUL-1** would apply to projects proposed in the MEMU Overlay Zone expansion area, including the Elan Project.

- MM-CUL-1** **Paleontological Resources.** A qualified paleontologist shall review the paleontological records search prepared by the Vertebrate Paleontology Section of the Los Angeles County Natural History Museum for the Elan Project. For proposed projects in the MEMU Overlay Zone expansion area, a paleontological

records search from the Los Angeles County Natural History Museum shall be required if a proposed project would involve grading or excavation that could disturb older Quaternary sediments with high paleontological resource sensitivity below the uppermost few feet of younger Quaternary surface sediments. For any such project within the MEMU Overlay Zone expansion area, a qualified paleontologist shall review the paleontological records search. To ensure recovery of fossil remains before they are lost or destroyed, the following additional measures shall be implemented for the Elan Project and for any projects within the MEMU Overlay Zone Expansion Area that have potential to disturb sediments with high paleontological sensitivity below the uppermost few feet of surface sediments:

- All construction activities with potential to disturb sediments below the uppermost few feet of surface sediments shall be monitored by an Orange County-certified professional paleontologist (qualified paleontologist).
- A qualified paleontologist shall attend preconstruction meetings to consult with the grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues. All construction personnel shall receive training provided by a qualified paleontologist experienced in teaching non-specialists to ensure that they can recognize fossil materials in the event any are discovered during construction.
- A qualified paleontologist shall conduct onsite paleontological monitoring of all grading and excavation activities with potential to disturb paleontologically sensitive sediments below the uppermost few feet of surface sediments. Monitoring shall include inspection of exposed surfaces and microscopic examination of matrix to determine if fossils are present. The monitor shall have authority to divert grading away from exposed fossils temporarily in order to recover the fossil specimens. Cooperation and assistance from onsite personnel will greatly assist timely resumption of work in the area of the fossil discovery.
- If fossil remains are discovered during project-related construction, activities in the vicinity of the find shall stop immediately until a qualified professional paleontologist can assess the nature and importance of the find and a qualified professional paleontologist can recommend appropriate treatment. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and may also include preparation of a report for publication describing the finds. The City shall be responsible for ensuring that recommendations regarding treatment and reporting are implemented. The work shall be conducted in conformance with the Orange County guidelines as defined in Rivin and Sutton (2010) and meet the requirements for recovery, salvage, laboratory preparation, preparation to the point of taxonomic identification, transferal, and preparation and submittal.
- Fossil remains collected during the monitoring and salvage portion of the program shall be cleaned, repaired, sorted, and catalogued.

- Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall be deposited (as a donation) in a scientific institution with permanent paleontological collections.
- A final data recovery report shall be completed that outlines the results of the monitoring program. This report will include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils.

New Mitigation Measures Required for the Elan Project

Implementation of newly developed mitigation measures **MM-CUL-2** through **MM-CUL-4** would only apply to the Elan Project.

MM-CUL-2. Documentation. Prior to demolition the project applicant will commission the preparation of complete archival-quality photo documentation of the architecturally significant Santa Ana Elks Lodge along with a historical profile to accompany the photo documentation. The documentation will be prepared in accordance with Historic American Building Survey (HABS) Level 2 standards as outlined in the Historic American Building Survey Guidelines for Preparing Written Historical Descriptive Data. The photographic element of the documentation will consist of 20–30 archival quality large-format black-and-white photographs of the property’s character-defining exterior and interior architectural features. If available, original architectural plans will be reproduced to archival HABS standards and will be included in the documentation package with photographs and written data. Three copies of the documentation package will be produced. One set will include original photo negatives and one set will be placed in publicly accessible archive or history collection.

MM-CUL-3 Salvage. Prior to demolition the applicant will work with the City of Santa Ana to arrange for representatives of the Elks, the Santa Ana Historical Preservation Society, Preserve Orange County, the Santa Ana Planning and Building Agency, other potentially interested parties, and members of the community to identify and undertake salvage the of Santa Ana Elks Lodge’s exterior and interior architectural features. The applicant will also consider salvaging and reusing architectural features identified as significant in the historical resource evaluation or identified as significant by interested parties that those interested parties are not able to salvage. Such significant features not salvaged by interested parties would be considered for reuse in the design and construction of a community room or other publically accessible interior or exterior space that will be incorporated into the design of the project.

MM-CUL-4 Interpretation. The applicant will commission an interpretative exhibit that communicates the Santa Ana Elks’ significance as a noteworthy local expression of the important role that fraternal orders have played in American history. The exhibit will include a concise narrative explanation along with visual graphics such as historical photographs, and it will potentially make use of artifacts associated with the organization, such as regalia and other objects from the Santa Ana Elks Lodge, copies of important organization documents, or Elks-

related personal items that members of the organization might be willing to donate. Before the certificate of occupancy is issued, the interpretative exhibit will be installed at a location on the project site accessible to the general public, potentially in a community room or other publically accessible interior or exterior space to be incorporated into the design of the project.

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4.3 Greenhouse Gas Emissions

This section presents information and an analysis regarding the environmental impacts potentially resulting from the proposed project. Note that a climate change and greenhouse gas (GHG) emissions analysis was not included in the *City of San Ana Metro East Mixed-Use Overlay Zone Environmental Impact Report* (MEMU EIR). This analysis discusses the change in GHG emissions that would occur with implementation of the proposed project compared with existing conditions. Where applicable, mitigation measures from the MEMU EIR that would affect GHG emissions are incorporated into the proposed project.

Summary of MEMU EIR Findings

The certified MEMU EIR did not address GHG emissions and did not quantify GHG emissions from buildout of the MEMU Overlay Zone.

Criteria of Significance

The California Environmental Quality Act (CEQA) Guidelines were revised in 2010 to include specific criteria related to GHG emissions analysis. State CEQA Guidelines Appendix G (14 California Code of Regulations [CCR] 15000 et seq.) identifies significance criteria to be considered for determining whether a project could have significant impacts on existing air quality. In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs.

State CEQA Guidelines Section 15064.4 provides guidance to lead agencies for determining the significance of impacts from GHG emissions. Section 15064.4(a) provides that a lead agency should make a good-faith effort, based, to the extent possible, on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. Section 15064.4(a) further provides that a lead agency shall have the discretion to determine, in the context of a particular project, whether (1) to use a model or methodology to quantify GHG emissions resulting from a project and which model methodology to use and/or (2) to rely on qualitative analysis or performance-based standards.

State CEQA Guidelines Section 15064.4(b) also provides that, when assessing the significance of impacts from GHG emissions, a lead agency should consider (1) the extent to which the project may increase or reduce GHG emissions compared with existing conditions, (2) whether the project's GHG emissions exceed a threshold of significance that the lead agency determines applies to the project, and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The analysis of potential impacts from the project's GHG emissions follows this approach.

A number of lead agencies throughout the state have drafted and/or adopted various threshold approaches and guidelines for analyzing 2020 operational GHG emissions in CEQA documents,

consistent with Assembly Bill (AB) 32 reduction requirements. These different thresholds include compliance with a qualified GHG reduction strategy (i.e., a Climate Action Plan [CAP]), performance-based reductions,⁷ numeric bright-line thresholds, and efficiency-based thresholds. The recent California Supreme Court's Newhall Ranch decision confirmed that there are multiple potential pathways for evaluating GHG emissions, consistent with CEQA, depending on the circumstances of a given project.⁸ Although the decision did not foreclose other methodologies that may be used by lead agencies, it affirmed that "thresholds only define the level at which an environmental effect 'normally' is considered significant; they do not relieve the lead agency of its duty to determine the significance of an impact independently." Additionally, the decision also identified the need to analyze both near-term and post-2020 emissions, as applicable, stating that an "EIR taking a goal-consistency approach to CEQA significance may in the near future need to consider the project's effects on meeting longer term emissions reduction targets."

The analysis of GHG emissions for the proposed project will require an evaluation that is based on two separate time periods, given that the Elan Project has a projected opening year of 2020, while buildout of the expanded MEMU Overlay Zone area is expected to occur in 2040. For the Elan Project, which would be operational by 2020, consistency with the City's qualified GHG reduction strategy (i.e., CAP) is the most relevant approach for analyzing the project's incremental contribution to the cumulative effect of GHG emissions because the City's CAP is consistent with AB 32 and considered to be a qualifying plan through 2020 under State CEQA Guidelines Section 15183.5. As discussed previously, compliance with an applicable qualified CAP is an approved approach to determining consistency with GHG emissions reduction requirements under AB 32. Thus, the Elan Project is analyzed relative to the City's CAP. However, for the MEMU Overlay Zone expansion component of the proposed project, which has a 2040 buildout year, a different analysis approach will need to be used because, as noted above, the City's CAP is not qualified for tiering beyond 2020. As such, the long-term trajectory of the GHG emissions associated with the expansion of the MEMU Overlay Zone is analyzed relative to reductions required to meet the state's long-term GHG reduction targets. Development of the threshold criteria used to assess the proposed project's GHG emissions in 2020 and 2040 is discussed below.

Threshold Criteria

The Association of Environmental Professionals (AEP) Climate Change Committee recommended in a 2016 white paper that CEQA analyses for multiple-phase projects with post-2020 development, such as the proposed project (excluding the Elan Project, which would be in operation by 2020), not only "consider consistency with the 2020/AB 32-based framework but also analyze the consequences of post-2020 GHG emissions in terms of their impacts on the reduction trajectory from 2020 toward 2050." AEP further recommends that the "significance determination...should be based on consistency with 'substantial progress' along a post-2020 trajectory." The 2016 AEP white paper is advisory only and not binding guidance or an adopted set of CEQA thresholds. However, the CEQA Guidelines do authorize a lead agency to consider thresholds of significance recommended by experts, such as members of the AEP Climate Change Committee, which consists of leaders of

⁷ Performance-based reductions include the "percent below business as usual" threshold approach, which has been used widely in the past. This approach was the subject of the Newhall Ranch case and presently is subject to uncertainty until the issues raised in the Supreme Court ruling are resolved.

⁸ *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal. 4th 204, known as the Newhall Ranch decision.

climate action planning practices from consulting firms and agencies that have lead many of the local GHG reduction planning efforts across California.

Based on the available threshold concepts recommended by air districts or other lead agencies as well as recent case law, the thresholds of significance that will be applied to the proposed project's GHG emissions for both the 2020 and post-2020 periods are as follows:

- For **2020**, impacts from the Elan Project's GHG emissions would be evaluated using the criteria listed below:
 - (1) Consistency with the growth assumptions and reduction measures within the City's CAP, and
 - (2) Compliance with regulatory programs adopted by the California Air Resources Board (CARB) or other California agencies for achieving reductions by 2020.

The analysis for 2020 is qualitative with respect to the CAP and AB 32 consistency and compliance with the CAP measures and regulatory programs outlined in the scoping plan and adopted by CARB or other California agencies. Project emissions are quantified for purposes of disclosure.

- For **2040**, impacts from the proposed project's buildout GHG emissions would be evaluated using the criteria below:
 - (1) Comparison to the "substantial progress" efficiency indicator of 1.37 metric tons of carbon dioxide equivalent (MTCO₂e) per service population,⁹ which is based on emissions projections in the City's CAP and the statewide reduction target, to determine whether emissions would be in excess of the efficiency indicator, and
 - (2) Compliance with regulatory programs adopted by CARB or other California agencies for achieving reductions by 2030 and 2050.

The analysis for 2040 is quantitative with respect to the "substantial progress" indicator and qualitative with respect to compliance with regulatory programs outlined by CARB for achieving emission reductions beyond 2020.

The South Coast Air Quality Management District (SCAQMD) previously considered draft GHG guidance for evaluating the GHG significance of residential, commercial, mixed-use projects, and industrial projects, but only the industrial threshold (for projects where SCAQMD is the lead agency) was adopted. The GHG Stakeholder Working Group also discussed adopting an efficiency-based threshold for both plan-level and project-level documents for two target dates: 2020 and 2035. The SCAQMD meeting minutes discussed an efficiency threshold for plans of 6.6 MTCO₂e per year and an efficiency threshold at the project level of 4.8 MTCO₂e per service population for 2020; for 2035, the minutes discussed an efficiency threshold for plans of 4.1 MTCO₂e per year and an efficiency threshold at the project level of 3.0 MTCO₂e per service population (SCAQMD 2010). The efficiency metric considers the GHG reduction measures integrated into a project's design and operation (including through mitigation) and is based on the net increase in emissions; however, the significance conclusion is not based on the magnitude of the increase in mass emissions (AEP 2016). SCAQMD has not adopted these thresholds. Moreover, these thresholds are based on the statewide 1990 emissions target and 2020 projected statewide employment and population in the land use sector and, thus, are not specific to any given City. Because the City of Santa Ana has adopted its own

⁹ The efficiency metric commonly used is GHG emissions divided by the "service population," which is the sum of people who live (residents) and work (employees) at the project site.

CAP, which has a 1990 emissions target that is based on 2020 projected employment and population, efficiency thresholds can be derived that are specific to the City's emissions, population, and employment projections. Thus, for the purpose of this analysis, an efficiency threshold for 2040 that would be specific to the City is derived from emissions data included in the City's CAP to assess whether the proposed project's GHG emissions at buildout would be consistent with the state's trajectory of long-term GHG reduction goals.

As discussed previously, the state has established GHG emissions reduction targets for specific milestone years (i.e., 1990 emission levels by 2020; 40 percent below 1990 emission levels by 2030; and 80 percent below 1990 emission levels by 2050).¹⁰ For projects that have buildout years that fall outside of milestone years 2020, 2030, and 2050, GHG efficiency thresholds can be estimated for those years by interpolating the mass emission targets between the appropriate milestone years and using the service population obtained for those years from the Southern California Association of Governments (SCAG). As such, for the proposed project, which has a buildout year of 2040, the mass emissions target can be calculated by interpolating a 60 percent reduction below 1990 emission levels between milestone years 2030 and 2050.

To estimate the 2040 GHG efficiency threshold for the City, Santa Ana's mass emissions target for 2040 was calculated by interpolating a 60 percent reduction below the CAP's 2020 emissions target of 1,665,516 MTCO_{2e} (refer to Table 3.3-1). This results in a 2040 emissions target of 666,207 metric tons. Population and employment data were obtained from SCAG using the same data that were used in the CAP, which is the 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The 2012 RTP/SCS has projections out to 2035.

The population of Santa Ana in 2020 is projected to be 337,600, with employment at 146,000. The population of Santa Ana in 2035 is projected to be 336,700, with employment at 149,500. When taken together, the service population (sum of population and employment) is 483,600 for 2020 and 486,100 for 2035. To estimate for the 2040 timeframe, the 2020 and 2035 service population was extrapolated to 2040, which results in an estimate of 486,933. Based on these estimates of emissions and service population for 2040, the efficiency metric for 2040 is calculated to be 1.37 MTCO_{2e} per service population (SP) (666,207 MTCO_{2e}/486,933 SP). Through the use of this efficiency threshold, the analysis of substantial progress through 2040, with a trajectory toward 2050 reduction targets, is used in this Subsequent Environmental Impact Report (SEIR) to disclose consistency of the proposed project with the long-term reductions called for in Executive Order (EO) S-3-05. Furthermore, although the proposed project's buildout would occur in the post-2020 period, consistency of the proposed project with the 2020/AB 32-based framework is addressed by analyzing the proposed project's consistency with the City's CAP as well as statewide reduction plans for 2020 and 2030.

Methods

GHG emissions generated from implementation of the proposed project are divided into construction and operations using the same methodology used to estimate emissions in the *Air Quality* section. The methodology for identifying construction- and operations-related emissions is presented below. As noted, GHG emissions were not evaluated in the previous EIR. This analysis will

¹⁰ As noted previously, the state's 2030 target has been codified in SB 32 but the 2050 target has not been codified at this juncture.

determine if implementation of the proposed project would result in additional impacts that were not identified in the MEMU EIR.

This analysis provides a program-level overview of construction and operational emissions that could occur with buildout of the proposed project. Subsequent project-level environmental review, including quantification of construction GHG emissions, would be required during the processing of individual applications for future development projects associated with the proposed project. For the Elan Project, a project-level environmental assessment is conducted and included in this SEIR to evaluate the potential GHG impacts resulting from construction and operation of this mixed-use development.

MEMU Overlay Zone Expansion Area

Construction Emissions

As was noted in the MEMU EIR in the *Air Quality* section, because the specific size, location, and construction techniques, as well as scheduling, that will be used for each individual development project occurring within the project area from implementation of the Overlay Zone are not currently known, the provision of emissions estimates for each individual development project, or a combination of these projects, would require the City to speculate regarding such potential future projects' potential environmental impacts. Thus, in the absence of the necessary construction information required to provide an informative and meaningful analysis, the evaluation of potential construction-related impacts resulting from implementation of the proposed project is conducted qualitatively in this SEIR and relies on the air quality construction emissions analysis conducted in the MEMU EIR. The analysis discusses the potential for future individual developments in the MEMU Overlay Zone expansion area to generate construction emissions and, where necessary, the mitigation measures that are available to reduce those emissions.

Operational Emissions

The buildout year for the proposed project is expected to be in 2040. Emissions from full buildout were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2, and based on vehicle trip generation rates from the traffic impact study as well as model defaults for energy and water consumption and wastewater and solid waste generation for the various land uses. Emissions are based on vehicle and electricity emissions rates for 2040.

Long-term (i.e., operational) GHG emissions that would occur from buildout of the proposed project were quantified using CalEEMod version 2016.3.2. Mass mobile-source emissions were based on the daily vehicle trips data provided by KOA Corporation, the proposed MEMU Overlay Zone expansion area project traffic engineers, for existing (2017) and proposed project buildout year (2040) conditions. Energy-, water-, and waste-related emissions were modeled according to the amount (i.e., number of dwelling units, or square footage) and type of land uses that would occur in the project area. Emissions were quantified for existing (2017) and proposed project buildout (2040) conditions, based on current and anticipated land uses. Electricity and water emissions take into account the level of the Renewables Portfolio Standard expected in 2040 (50 percent). Please refer to Appendix B for the land use assumptions and CalEEMod output files.

Elan Project

Construction Emissions

To conduct a project-level analysis for the Elan Project, the latest version of CalEEMod (version 2016.3.2) was used to model the construction-related pollutant GHG emissions generated by this mixed-use project. The modeling was based on project-specific data provided by the applicant, where available. Where project-specific information was not available, default model settings were used to estimate GHG emissions. Consistent with SCAQMD guidance, construction GHG emissions were summed and amortized over the life of the project, defined as 30 years, and added to operational emissions (described below). All emissions calculation worksheets and output files are provided in Appendix B of this SEIR.

Operational Emissions

The Elan Project's operational GHG emissions were also quantified using CalEEMod. Modeling is based on project trip generation rates from the traffic impact study prepared for the project by Linscott, Law & Greenspan, Engineers. The long-term activities that would be generated by the project were compared with activity levels assumed in the City's CAP, and the project as a whole was compared to statewide, regional, and local emissions reductions plans.

Impacts of Proposed Project

MEMU Overlay Zone Expansion Area

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

Impact 4.3-1: The proposed project could generate GHG emissions during construction and operations that may have a significant impact on the environment.

Construction

Similar to the air quality analysis in the MEMU EIR, because the specific size, location, and construction techniques, as well as scheduling, that would be used for each individual development project in the MEMU Overlay Zone are not currently known, the provision of GHG emissions estimates for each development project, or combination of projects, would not be feasible and would require the City to speculate regarding such potential future projects' potential environmental impacts. Future projects in the MEMU Overlay Zone would be considered and evaluated through the environmental review process by the City on a case-by-case basis to ascertain whether an individual project would generate potentially significant GHG impacts and, where necessary, require implementation of mitigation measures to minimize emissions and reduce potentially significant impacts. GHG emissions estimates were not presented in the MEMU EIR. However, criteria pollutant emissions associated with construction of all proposed land uses within the Overlay Zone were estimated, and mitigation measures were developed to reduce emissions of volatile organic compounds (VOCs) and nitrogen oxide (NO_x). Although mitigation measures **MM-OZ 4.2-2** through **MM-OZ 4.2-16** were devised to reduce VOCs and NO_x emissions, to some extent they would also

reduce GHG emissions. Moreover, the air quality analysis in this SEIR included additional mitigation measures to reduce construction emissions. Of these, **MM-AQ-2**, which requires use of 2010 and newer haul trucks, would marginally reduce GHG emissions as well. Similar to the air quality analysis for the proposed project, although measures may reduce GHG emissions, the extent of construction emissions is not yet known.

For construction GHG emissions, SCAQMD recommends that the total emissions for a project be amortized over a 30-year period and added to its operational emission estimates (SCAQMD 2008). Although the GHG emissions for buildout of the proposed project were not quantified, these emissions would be relatively small when compared with the proposed project's operational emissions on an annual basis at buildout because of their amortization over a 30-year period.

Operation

Under the proposed project, despite the expansion of the existing MEMU Overlay Zone boundaries to add an additional 33.52 acres to the project area and extending the buildout year from 2030 to 2040, the development capacity of the original MEMU Overlay Zone project would remain the same within the expanded Overlay Zone area. Although GHG emissions were not analyzed in the MEMU EIR that was certified in 2007, the City's CAP, which was prepared in 2015 and based on growth projections from SCAG, would have accounted for the growth that would result from development in the MEMU Overlay Zone. Because the proposed project would not change the development capacity of the original MEMU Overlay Zone project, it would also not result in an exceedance of the previous projections in population and employment growth that were forecast by SCAG over the long term at the time the MEMU EIR was prepared. However, because the proposed project's buildout would occur after 2020 and the CAP's post-2020 emissions reduction target (i.e., 2035) is not consistent with the state's GHG emissions reduction goals for the post-2020 period, further analysis is needed to assess the project's long-term impacts related to the generation of GHG emissions. To evaluate the change in GHG emissions due to implementation of the proposed project relative to existing conditions, the emissions under this project at buildout in 2040 are compared with existing conditions, and the net change is compared with the "substantial progress" efficiency metric of 1.37 MTCO_{2e} per SP discussed above in the Threshold Criteria section.

Emissions associated with both existing conditions within the MEMU Overlay Zone and proposed buildout of the MEMU Overlay Zone are presented in Table 4.3-1. As shown, operation of the proposed project at full buildout in 2040 would result in a net increase in emissions over existing conditions, and the net new emissions would exceed the "substantial progress" efficiency metric of 1.37 MTCO_{2e} per SP. Therefore, this impact is considered significant, and further mitigation is required.

As shown in Table 4.3-1, the proposed project's net operational GHG emissions in 2040 would exceed the "substantial progress" efficiency metric of 1.37 MTCO_{2e} per SP that was derived from the 2050 reduction target articulated in EO S-3-05. Additionally, it should be noted that the proposed project's emissions at buildout shown in Table 4.3-1 do not include the annual construction emissions that would also occur from implementation of the proposed project. As such, the net annual GHG emissions that would result from the proposed project at buildout in 2040 would be higher than the 88,556 MTCO_{2e} value shown. Overall, because the proposed project would exceed the efficiency metric of 1.37 MTCO_{2e} per SP, the project could conflict with the GHG emissions reduction trajectory for 2050 under EO S-3-05. Because the long-term climate change policy and regulatory changes to meet the 2050 emissions reduction target are unknown at this time, the extent to which the proposed project's emissions and resulting impacts would be mitigated through

implementation of statewide (and nationwide) changes is not known, and any calculation of post-2030 emissions cannot take into account future state or federal actions that may be taken to achieve long-term reductions.

Table 4.3-1. Estimated Unmitigated GHG Emissions with Operation of MEMU Overlay Zone (metric tons)

Condition/Source	CO ₂	CH ₄	N ₂ O	CO ₂ e
Existing (2017)				
Area Sources	37	< 1	< 1	37
Energy Sources	11,723	< 1	< 1	11,775
Mobile Sources	40,326	2	< 1	40,377
Waste Generation	764	45	< 1	1,893
Water Consumption	1,609	11	< 1	1,972
<i>Total Existing</i>	54,459	59	< 1	56,054
2040 With Project				
Area Sources	1,427	< 1	< 1	1,437
Energy Sources	18,038	< 1	< 1	18,118
Mobile Sources	117,315	4	< 1	117,424
Waste Generation	1,462	86	< 1	3,622
Water Consumption	3,105	28	< 1	4,011
<i>Total 2040 With Project</i>	141,347	120	1	144,611
Net New Emissions 2040	—	—	—	88,556
Net New Service Population 2040*	—	—	—	12,822
Proposed Project Efficiency (MTCO ₂ e/SP)	—	—	—	6.91
Efficiency Threshold (MTCO ₂ e/SP)	—	—	—	1.37

* The proposed project's service population is based on 1,720 jobs and 11,102 residents within the project area (see Section XIII, Population and Housing, of Appendix A).

To reduce the proposed project's GHG emissions in 2040, mitigation measures **MM-GHG-1** through **MM-GHG-6** are recommended, including measures to promote bicycle infrastructure improvements, energy and water efficiency improvements, and pedestrian-friendly amenities. However, given that the proposed project would need to reduce its net GHG emissions by more than 80 percent to meet the "substantial progress" efficiency metric, these mitigation measures would not be able to achieve such a drastic reduction in the proposed project's GHG emissions. Therefore, GHG emissions generated by buildout of the proposed project would be *significant and unavoidable*.

Threshold: Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Impact 4.3-2: The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

The AB 32 Climate Change Scoping Plan identifies specific measures to reduce GHG emissions to 1990 levels by 2020. The scoping plan considers a range of actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms (e.g., a cap-and-trade system). These measures include those related to improving transportation technology and infrastructure for mobile-source emissions reductions, such as the Advanced Clean Cars program, the low-carbon fuel standard, and various vehicle efficiency measures. The plan also includes measures to provide cleaner and more efficient energy, such as the Renewables Portfolio Standard, which aims to have at least 33 percent and 50 percent of electricity generation from renewable resources by 2020 and 2050, respectively. The plan addresses emissions from fluorinated gases through requiring refrigerants with low global warming potential (GWP) for new motor vehicle air-conditioning systems and a phasedown of high-GWP production and import. The proposed project would be consistent with a number of the measures within the AB 32 Scoping Plan and other measures adopted by CARB but not yet included in the scoping plan. As a result, project-related GHG emissions would be reduced through several of the AB 32 Scoping Plan measures. Accordingly, the project would not conflict with AB 32.

Implementation of the proposed expansion area project would allow for construction of up to 5,551 residential units, 1.5 million square feet of office space, and up to 3.1 million square feet of commercial space throughout the existing and proposed MEMU expansion areas. The project also allows for the potential increase in the City's population (i.e., 11,102 new residents). These growth capacities are consistent with the capacities previously analyzed in the original 2007 MEMU EIR, with no new units or additional population capacity proposed to the existing cap of 5,551 residential units and 11,102 residents. Because there are no proposed increases in development or population above the previously analyzed capacities, SCAG's 2016 RTP/SCS was developed with knowledge of these increases in population and land uses. Therefore, the project is consistent and would not conflict with SCAG's 2016 RTP/SCS.

The City's CAP, adopted in 2015, contains measures to reduce GHG emissions related to transportation and land use, community-wide energy, municipal operations, and solid waste, water, and wastewater. The MEMU Overlay Zone Expansion Area Project would be consistent with the relevant measures outlined in the plan. The project's consistency with applicable CAP measures is discussed in Table 4.3-2.

Table 4.3-2. Proposed Project’s Consistency with City of Santa Ana CAP

Policy, Objective, Goal, Measure	Elan Project Consistency Analysis	MEMU Plan Consistency Analysis
City of Santa Ana Climate Action Plan (2015): Transportation and Land Use		
<p>Development of Local Retail Service Nodes. Development that provides a mix of housing, commercial space, services, and job opportunities close to public transportation reduces dependency on cars and time spent in traffic and more closely links residents to jobs and services.</p>	<p>Consistent/Consistent after Mitigation. The Elan Project is a mixed-use development that incorporates housing and commercial space within the same complex. The development is in proximity (< 1 mile) to the Santa Ana Regional Transportation Center, which provides access to Amtrak and Metrolink. In addition, mitigation measure MM-OZ 4.12-1 involves improvements to transit near the proposed project, including adding bus stops along existing and proposed roadways, changing bus service to respond to increased demand, and adding shuttle service for employees within the Overlay Zone.</p>	<p>Consistent/Consistent after Mitigation. The MEMU Overlay Zone expansion area would apply the Active Urban District concept, which is intended to provide a location for well-designed, high-rise mixed-use developments in a highly urbanized environment. Developments in this district are also intended to combine office, commercial, and residential uses within one vertical mixed-use building with commercial on the ground floor and office or residential units on the upper floors or a mix of uses within freestanding buildings on the same site.</p> <p>The proposed project is in proximity (< 1 mile) to the Santa Ana Regional Transportation Center, which provides access to Amtrak and Metrolink. In addition, mitigation measure MM-OZ 4.12-1 involves improvements to transit within the Overlay Zone, including adding bus stops along existing and proposed roadways, changing bus service to respond to increased demand, and adding shuttle service for employees within the Overlay Zone.</p>
<p>Local Residential Nodes near Retail and Employment. Locate new residential development within retail and employment corridors to create a more optimal mix of land uses, which will be conducive to the increase use of transit.</p>	<p>Consistent. The Elan Project will, by design, locate new residential development within retail corridors. The project includes 603 residential units with 8,500 square feet of commercial uses on the ground floor. Commercial uses will therefore be in proximity to residents.</p>	<p>Consistent. The MEMU Overlay Zone expansion area would apply the Active Urban District concept, which is intended to provide a location for well-designed, high-rise mixed-use developments in a highly urbanized environment. Developments in this district are also intended to combine office, commercial, and residential uses within one vertical mixed-use building with commercial on the ground floor and office or</p>

Policy, Objective, Goal, Measure	Elan Project Consistency Analysis	MEMU Plan Consistency Analysis
<p>Traffic Synchronization Program. Corridors with synchronized and coordinated traffic signals tend to have shorter travel times, less delay, and reduced congestion, and studies indicate that these improvements can lead to a 10% reduction in GHG emissions.</p>	<p>Not Applicable. The Elan Project is a residential/ commercial mixed-use development that would not have the authority to adjust traffic signals within the City. MM-TRA-2 requires fair-share contributions to implement mitigation measures to reduce traffic congestion and thereby reduce emissions.</p>	<p>residential units on the upper floors or a mix of uses within freestanding buildings on the same site.</p> <p>Consistent after Mitigation. Mitigation measure MM-OZ 4.12-3 requires coordination between the City of Santa Ana Planning Department and the Department of Public Works to monitor traffic signals within the Overlay Zone study area once every 5 years to ensure that traffic signal timing is optimized.</p>
<p>Local Employment Nodes near Residential and Retail Areas. Develop higher levels of mixed-use development, including employment, retail, and housing, to lower vehicle miles traveled (VMT) compared with areas where only one of these uses predominates.</p>	<p>Consistent. The Elan Project is a mixed-use development that includes 603 residential units with 8,500 square feet of commercial uses on the ground floor.</p>	<p>Consistent. The MEMU Overlay Zone expansion area would apply the Active Urban District concept, which is intended to provide a location for well-designed, high-rise mixed-use developments in a highly urbanized environment. Developments in this district are also intended to combine office, commercial, and residential uses within one vertical mixed-use building with commercial on the ground floor and office or residential units on the upper floors or a mix of uses within freestanding buildings on the same site.</p>
<p>End-of-Trip Facilities in New Projects. End-of-trip facilities can include bike lockers, showers, and changing rooms, which can be used by cyclists and encourage cycling use.</p>	<p>Not Applicable. Residential units are inherently an end-of-trip facility and would not require further development beyond project design.</p>	<p>Consistent after Mitigation. Mitigation measure MM-GHG-1 requires future developments within the MEMU Overlay Zone to incorporate end-of-trip facilities into the project design where feasible to encourage cycling use within the planning area.</p>
<p>Safe Routes to School. A state and federally funded program that aims to increase safety for children walking and bicycling to school and encourage alternate modes of transportation. Activities include improvements to physical infrastructure such as sidewalks and bike paths, educational</p>	<p>Not Applicable. The Elan Project is a residential and commercial mixed-use development that does not have authority to implement such programs.</p>	<p>Consistent. The MEMU Overlay Zone expansion area is within the Tustin Unified School District, and in proximity (< 1 mile) to several schools. Measures to increase safety for students walking or biking to school is therefore pertinent in the proposed project area.</p>

Policy, Objective, Goal, Measure	Elan Project Consistency Analysis	MEMU Plan Consistency Analysis
<p>programming, and the planning needed to implement strategies.</p> <p>Design Guidelines for External Bike/Pedestrian/Transit Connectivity. The City plans to create guidelines that will mandate minimum levels of connectivity between various locations and the external transportation network.</p>	<p>Consistent/Consistent after Mitigation. The Elan Project is a mix-use development that incorporates housing and commercial space within the same complex. The development is in proximity (< 1 mile) to the Santa Ana Regional Transportation Center, which provides access to Amtrak and Metrolink. In addition, mitigation measure MM-OZ 4.12-1 involves improvements to transit near the proposed project, including adding bus stops along existing and proposed roadways, changing bus service to respond to increased demand, and adding shuttle service for employees within the Overlay Zone. Therefore, although the City has not yet created guidelines for minimum levels of connectivity, the Elan Project has already addressed these issues through design and mitigation. Once City</p>	<p>The expansion area would apply the Active Urban District concept, which highlights an “amenity-enhanced environment,” to provide open-space opportunities, including pedestrian connections between this district and the Village Center as well as other developments within the Overlay Zone. These enhancements would also benefit students walking to school through the Overlay Zone. In addition, implementation of mitigation measure MM-GHG-1 would require improvements to bike paths within the Overlay Zone, which could be used by students commuting to school. Although the Safe Route to Schools would not be implemented at the plan level, the above improvements would aid in the program’s mission.</p> <p>Consistent/Consistent after Mitigation. The proposed project is in proximity (< 1 mile) to the Santa Ana Regional Transportation Center, which provides access to Amtrak and Metrolink. In addition, mitigation measure MM-OZ 4.12-1 involves improvements to transit, including adding bus stops along existing and proposed roadways, changing bus service to respond to increased demand, and adding shuttle service for employees within the Overlay Zone. In addition, the Active Urban District concept, which applies to the proposed project, highlights an “amenity-enhanced environment” that provides open-space opportunities, including pedestrian connections between this district and the Village Center as well as other</p>

Policy, Objective, Goal, Measure	Elan Project Consistency Analysis	MEMU Plan Consistency Analysis
<p>Design Guidelines for Internal Bike/Pedestrian/Transit Connectivity. The City plans to create guidelines that will address internal site connectivity within new development. The guidelines will address fencing, sidewalks, landscaping, etc.</p>	<p>guidelines have been adopted, the proposed project will comply to the extent feasible.</p> <p>Not Applicable. Guidelines to address internal site connectivity are not yet developed. Therefore, incorporation of the guidelines into the project design is not possible at this time.</p>	<p>developments within the Overlay Zone.</p> <p>Although the City has not yet created guidelines for minimum levels of connectivity, the proposed project has already addressed these issues through design and mitigation. Once City guidelines have been adopted, the proposed project will comply to the extent feasible.</p> <p>Consistent. This is a City initiative that requires no plan-level involvement at this time. Once the City develops guidelines, new developments within the MEMU Overlay Zone expansion area will be required to incorporate them into the project design.</p>
<p>Adjust Parking Ratios. Reduce the minimum amount of parking required in new multifamily residential developments by reducing the City’s existing parking ratios.</p>	<p>Consistent. Local initiative that requires no action at the project level. Benefits to project-related transportation emissions will be realized.</p>	<p>Consistent. The proposed project includes updating development standards within the existing document. Parking standards are included in the updates and involve a decrease from 2.0 to 1.8 spaces per residential or live/work unit for mixed-use developments with less than 10 percent of the gross floor area devoted to commercial activity. (For more information, refer to Table 2-1 <i>Proposed Modifications to MEMU Overlay Zone</i>, in Chapter 2, <i>Project Description</i>.)</p>
<p>Community-wide Bike Sharing Stations. Development of bike-sharing stations at several locations throughout the City, including the Santa Ana Regional Transportation Center, major bus stop locations, City Hall, etc. These bicycles will help to extend trips possible through transit or directly substitute automobile trips.</p>	<p>Consistent after Mitigation. Implementation of bike-sharing stations is subject to review and approval by the City. However, MM-GHG-1 would require improvements to bike paths within the MEMU Overlay Zone expansion area, which is where the proposed Elan Project would be located.</p>	<p>Consistent after Mitigation. Implementation of bike-sharing stations is subject to review and approval by the City. However, MM-GHG-1 would require improvements to bike paths and infrastructure, including bike-sharing stations, to the extent feasible within the MEMU Overlay Zone expansion area.</p>
City of Santa Ana Climate Action Plan (2015): Community		
<p>Property Assessed Clean Energy (PACE) Financing for Commercial and Residential Properties. PACE financing is available for energy</p>	<p>Consistent After Mitigation. Mitigation measure MM-GHG-2 requires the developer to incorporate renewable energy</p>	<p>Consistent After Mitigation. Mitigation measure MM-GHG-2 requires project applicants to incorporate renewable energy</p>

Policy, Objective, Goal, Measure	Elan Project Consistency Analysis	MEMU Plan Consistency Analysis
<p>and water saving measures as well as renewable energy generation. Energy efficiency projects financed through the program include air-conditioning and heating systems, lighting upgrades, cool roofing materials, and solar installations.</p> <p>Southern California Edison (SCE) Small and Medium Business Direct Install. Energy efficiency contractors help small business identify ways to save electricity.</p>	<p>sources and energy and water saving measures into the project design. Financial programs such as PACE can provide assistance to the developer to implement these measures.</p> <p>Consistent after Mitigation. Mitigation measure MM-GHG-2 requires the developer to incorporate energy saving measures into the project design. Programs such as SCE Direct Install can assist the developer with implementing these measures.</p>	<p>sources and energy and water saving measures into the design of new developments. Financial programs such as PACE can provide assistance to the developers to implement these measures.</p> <p>Consistent after Mitigation. Mitigation measure MM-GHG-2 requires project applicants to incorporate energy saving measures into the design of new developments within the MEMU Overlay Zone expansion area. Programs such as SCE Direct Install can assist developers with implementing these measures.</p>
<p>Solar Photovoltaic Systems—New Private Installs. The City is offering solar incentives that include permit fee waivers, free plan check services, and free building inspections for solar photovoltaic systems.</p>	<p>Consistent after Mitigation. Mitigation measure MM-GHG-2 requires the developer to incorporate renewable energy sources into the project design. The solar incentives offered by the City can be used to assist the developer with solar photovoltaic installations and comply with this mitigation measure.</p>	<p>Consistent after Mitigation. Mitigation measure MM-GHG-2 requires project applicants to incorporate renewable energy sources into the design of new developments within the MEMU Overlay Zone expansion area. The solar incentives offered by the City can be used to assist developers with solar photovoltaic installations and comply with this mitigation measure.</p>
<p>SCE and Southern California Gas Company (SCG) Residential Programs. SCE offers rebates for air-conditioner replacement, energy-efficient appliances, pool pumps and motors, etc. SCG offers rebates for energy-efficient upgrades of furnaces, insulation, and water heaters.</p>	<p>Not Applicable. The proposed project is a new development that will incorporate efficient appliances into the project design and would not require replacements.</p>	<p>Consistent after Mitigation. Mitigation measure MM-GHG-2 requires project applicants to incorporate energy-saving measures into the design of new developments within the MEMU Overlay Zone expansion area. Programs such as the SCE and SCG rebates can assist developers with implementing these measures.</p>
<p>Weatherization. The City assists low-income households with energy-saving measures, such as air duct sealing, insulation, window glazing, and tune-up or replacement for air-conditioning and heating systems. This program is delivered through the Community Action Partnership and</p>	<p>Not Applicable. Because the Elan Project is a new development, it will be subject to California’s Title 24 Building Energy Efficiency Standards. These standards address the energy-saving issues targeted by the weatherization strategies listed.</p>	<p>Consistent after Mitigation. Mitigation measure MM-GHG-2 requires project applicants to incorporate energy-saving measures, such as weatherization, into the design of developments within the MEMU Overlay Zone expansion area. The Community Action Partnership can assist</p>

Policy, Objective, Goal, Measure	Elan Project Consistency Analysis	MEMU Plan Consistency Analysis
<p>funded through grants and local utilities.</p> <p>SCG Commercial Programs. SCG offers rebates for replacement of inefficient equipment, such as water heaters, oilers, and food service equipment, for energy savings.</p>	<p>Not Applicable. The Elan Project is a new development that will incorporate efficient equipment and appliances into the project design and would not require replacements.</p>	<p>developers with implementing such measures.</p> <p>Consistent after Mitigation. Mitigation measure MM-GHG-2 requires project applicants to incorporate energy-saving measures into the design of new developments within the MEMU Overlay Zone expansion area. Financing incentives such as those offered by SCG can assist developers with implementing these measures.</p>
<p>Streetlight Purchase and Retrofit. City to purchase SCE-owned streetlights and convert them from high-pressure sodium lamps to LED bulbs.</p>	<p>Not Applicable. This measure is a City program and would not be implemented at the project level.</p>	<p>Consistent after Mitigation. Mitigation measure MM-GHG-3 calls for purchase of the SCE-owned streetlights within the MEMU Overlay Zone expansion area to convert from the high-pressure sodium lamps to LED bulbs.</p>
<p>Benchmarking and Retro-commissioning. A City ordinance that would require all nonresidential buildings larger than 10,000 square feet report to an EnergyStar portfolio manager to receive an energy performance score. Those with scores less than 75 points would be required to complete retro-commissioning.</p>	<p>Not Applicable. The nonresidential component of the Elan Project is only 8,500 square feet in size and would therefore not be subject to the local ordinance.</p>	<p>Consistent. All nonresidential buildings larger than 10,000 square feet within the expanded MEMU Overlay Zone are required through City ordinance to report to an EnergyStar portfolio manager and follow up with retro-commissioning if necessary. This is an ordinance that is regulated at the local level and requires no further action.</p>
<p>Title 24 Energy Efficiency Standards. Minimum energy efficiency for new construction in California effective January 1, 2014.</p>	<p>Consistent. State program that requires no additional action at the local or project level. Benefits to project-related electricity consumption will be realized.</p>	<p>Consistent. Title 24 is a state code that requires no additional action at the local or plan level. Benefits to project-related electricity consumption will be realized.</p>
<p>Solar Hot Water Heating Systems for Laundromats. The City will contact laundromat owners and encourage them to take advantage of a rebate on commercial installation of solar hot water heating systems offered by SCG.</p>	<p>Not Applicable. The Elan Project is a new development that will incorporate efficient equipment and appliances into the project design and would not require replacements or upgrades.</p>	<p>Consistent after Mitigation. Mitigation measure MM-GHG-2 requires project applicants to incorporate energy-saving measures into the design of new developments within the MEMU Overlay Zone expansion area. Rebate programs, such as that offered by SCG for the installation of solar hot water heating systems, can assist</p>

Policy, Objective, Goal, Measure	Elan Project Consistency Analysis	MEMU Plan Consistency Analysis
<p>Green Business Challenge Program. The City will partner with the Chamber of Commerce to launch the challenge, which will establish competition between local businesses to improve performance in energy efficiency, water conservation, waste reduction, and other areas.</p>	<p>Not Applicable. This measure is a City program that would not be implemented at the project level.</p>	<p>developers with implementing these measures.</p> <p>Not Applicable. This measure is a City program that would not be implemented at the plan level.</p>
<p>City of Santa Ana Climate Action Plan (2015): Solid Waste, Water, and Wastewater Measures</p>		
<p>AB 341. Adopted by the state in 2011 and requires businesses that generate 4 cubic yards or more of commercial solid waste per week and multifamily residential dwellings of five units or more to recycle.</p>	<p>Consistent. The Elan Project would consist of 603 residential units, which is well above the five-unit threshold. The project would therefore be required to recycle and would work with Waste Management to implement a recycling system during operation at the project site.</p>	<p>Consistent. The City is currently working with Waste Management to support commercial and multifamily customers in meeting the requirements of AB 341. This coordination would continue in the MEMU Overlay Zone expansion area.</p>
<p>Food Waste Digestion. The City will work with waste haulers and potential digestion facilities to arrange for dedicated treatment of Santa Ana food waste, which could go to dedicated facilities or be added to existing anaerobic digesters at wastewater treatment plants that use digester gas for energy.</p>	<p>Consistent. This is a City program that would not be initiated at the project level. Once a food waste program has been implemented, the project sponsors will cooperate with City officials in the capacity necessary to participate in food waste hauling.</p>	<p>Consistent. This is a City program that requires no plan-level involvement at this time. Once a food waste program has been implemented, MEMU residents and business owners will cooperate with City officials in the capacity necessary to participate in food waste hauling.</p>
<p>Rainwater Harvesting. Collecting and re-using rainwater can minimize the amount of water flowing into storm drains, sewer systems, and local waterways and can reduce potable water consumption and electricity consumption from distribution.</p>	<p>Consistent after Mitigation. With implementation of mitigation measure MM-GHG-4, the developer will incorporate rainwater harvesting into the project design to the extent feasible.</p>	<p>Consistent after Mitigation. With implementation of mitigation measure MM-GHG-4, residences and businesses within the MEMU Overlay Zone expansion area will incorporate rainwater harvesting into the individual project design to the extent feasible.</p>
<p>Turf Removal. The City will promote turf removal and conversion to drought-tolerant landscaping and encourage use of rebates through SoCal Water Smart.</p>	<p>Consistent after Mitigation. Mitigation measure MM-GHG-5 requires the use of drought-tolerant landscaping in the project design to the extent feasible.</p>	<p>Consistent after Mitigation. Mitigation measure MM-GHG-5 requires the use of drought-tolerant landscaping in the project design for new development within the MEMU Overlay Zone expansion area to the extent feasible.</p>
<p>City of Santa Ana Climate Action Plan (2015): Municipal Operations</p>		

Policy, Objective, Goal, Measure	Elan Project Consistency Analysis	MEMU Plan Consistency Analysis
<p>Building Energy Efficiency Retrofits. The City will make energy-efficient improvements in municipal buildings, including heating, ventilation, and air-conditioning (HVAC) systems; lighting, controls; and potentially the building envelope (e.g., windows and insulation).</p>	<p>Not Applicable. The proposed Elan Project mixed-use development is a private project and would therefore not implement improvements to municipal buildings.</p>	<p>Not Applicable. This is a City program that requires no additional action at the plan level. All municipal buildings within the MEMU Overlay Zone expansion area will comply with City improvements.</p>
<p>Street Lighting LED Retrofits. The City will replace existing City-owned fixtures with LED lighting.</p>	<p>Not Applicable. This measure is a City-wide program and would not require any action by the developer at the project level.</p>	<p>Consistent after Mitigation. This measure is a City-wide program that is not directly applicable to the proposed project. However, mitigation measure MM-GHG-3 would require the purchase of the SCE-owned streetlights within the MEMU Overlay Zone expansion area by the City to convert from the high-pressure sodium lamps to LED bulbs.</p>
<p>Retro-commissioning. The City will retro-commission its buildings and facilities to improve operations and enhance overall building performance.</p>	<p>Not Applicable. The proposed Elan Project mixed-use development is a private project and would therefore not implement improvements to municipal buildings.</p>	<p>Consistent. This is a City-wide program that requires no additional action at the plan level. All municipal buildings within the MEMU Overlay Zone expansion area will comply with City improvements.</p>
<p>Water Pump Retrofits. The City will convert all remaining pumping stations to variable frequency drives.</p>	<p>Not Applicable. This measure is a City-wide program and would not require any action by the developer at the project level.</p>	<p>Consistent. This is a City-wide program that requires no action at the plan level. All municipal buildings within the MEMU Overlay Zone expansion area will comply with City improvements.</p>
<p>Solar Photovoltaic Systems. The City can install solar photovoltaic systems on City facilities to reduce energy costs and emissions and set an example to encourage the installation of renewable energy by businesses and residents in the community.</p>	<p>Not Applicable. The proposed Elan Project mixed-use development is a private project and would therefore not implement improvements to City facilities.</p>	<p>Consistent. This is a City program that requires no additional action at the plan level. All municipal buildings within the MEMU Overlay Zone expansion area will comply with City improvements.</p>
<p>Vending Machine Retrofits. The City can install vending machines that use a controller and sensor to monitor room occupancy and temperature that can power down the vending machine when the area is vacant.</p>	<p>Not Applicable. The proposed Elan Project mixed-use development is a private project and would therefore not implement improvements to City facilities.</p>	<p>Consistent. This is a City program that requires no additional action at the plan level. All municipal buildings within the MEMU Overlay Zone expansion area will comply with City improvements.</p>

As outlined in Table 4.3-2, the proposed project would be consistent with the relevant goals, objectives, policies, and measures contained in the City's CAP, some after implementation of mitigation measures. However, because the CAP is qualified only through 2020, the proposed project's consistency with this document is applicable only through 2020. The individual developments associated with the proposed project would be developed and operating within the MEMU Overlay Zone and, therefore, would be emitting GHGs past 2020. Although the City's CAP will not be qualified past 2020, the proposed project would still be required to comply with the various federal and state regulations that address GHG emissions past 2020. As shown in Table 4.3-1, the majority of operational emissions within the MEMU Overlay Zone are due to mobile sources (approximately 81 percent in 2040). These emissions are expected to trend down parallel to the state's GHG emissions reductions over the long term because of the programs that were previously discussed, such as strengthening Pavley standards for vehicle models 2017–2025. The second-highest emissions sources during operation of the proposed project would be energy sources, which would account for about 12 percent of the project's total emissions in 2040. These emissions are also expected to decrease with time because of programs such as the Renewables Portfolio Standard, which requires 50 percent of electricity to be procured from renewable energy resources by 2030.

After implementation of mitigation measures **MM-GHG-1** through **MM-GHG-6**, the proposed project would comply with applicable planning documents whose policies and measures aim to reduce impacts related to GHG emissions. Therefore, this impact would be *less than significant*.

Elan Project

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

Impact 4.3-E1: The proposed project would not generate GHG emissions during construction and operations that would have a significant impact on the environment.

Construction

Short-term construction activities associated with the Elan Project would result in GHG emissions from fuel combustion associated with on- and off-road construction equipment and vehicles. Emissions associated with construction are summarized in Table 4.3-3. Consistent with SCAQMD guidance, construction emissions are summed and amortized over a 30-year project life and added to the Elan Project's operational emissions, which are discussed below, to determine the significance of potential GHG emissions impacts.

Table 4.3-3. Estimated GHG Emissions from Elan Project Construction^a

Source	CO ₂	CH ₄	N ₂ O	CO ₂ e
2018	452	< 1	0	454
2019	1411	< 1	< 1	1414
Total Emissions ^b	1863	< 1	0	1868
<i>Amortized Emissions^c</i>	62	< 1	< 1	62

^a Metric tons per year.

^b Totals may not add up exactly because of rounding.

^c Construction emissions are amortized over a 30-year period.

Operation

Area and indirect sources of GHG emissions associated with the Elan Project would result primarily from electricity and natural gas consumption, water and wastewater transport (the energy used to pump water and wastewater to and from a project site), and solid waste generation. GHG emissions from electricity consumed on-site by the Elan Project would be generated off-site through fuel combustion at the electricity provider. GHG emissions from water and wastewater transport are also indirect emissions resulting from the energy required to transport water from its source and the energy required to treat wastewater and transport it to its treated discharge point. In addition, operation of the Elan Project would also generate mobile-source emissions from motor vehicle trips generated by residents, employees, and visitors accessing the project site.

Table 4.3-4 presents the daily emissions that are estimated to occur during operation of the Elan Project. As shown, implementation of the Elan Project would result in approximately 7,376 MTCO₂e per year.

Table 4.3-4. Estimated GHG Emissions from Elan Project Operation (metric tons/year)

Source	CO ₂	CH ₄	N ₂ O	CO ₂ e	Percent of Total Emissions (%)
Area Sources	155	< 1	< 1	156	2
Energy Sources	1,406	< 1	< 1	1,411	19
Mobile Sources	5,386	< 1	0	5,392	74
Waste Generation	58	3	0	144	2
Water Consumption	168	1	< 1	210	3
<i>Total Emissions^a</i>	7,173	5	< 1	7,314	100
<i>Annual Emissions plus Amortized Construction</i>				7,376	

As discussed under *Criteria of Significance*, because the Elan Project would be operational by 2020, consistency with the City's CAP is the most relevant approach for analyzing the project's incremental contribution to the cumulative effect of GHG emissions because the City's CAP is consistent with AB 32 and considered to be a qualifying plan through 2020 under State CEQA Guidelines Section 15183.5.

Although GHG emissions were not analyzed in the MEMU EIR that was certified in 2007, the City's CAP, which was prepared in 2015 and based on growth projections from SCAG, would have

accounted for the growth that would result from development in the MEMU Overlay Zone, including the Elan Project. Because the development capacity of the original MEMU Overlay Zone project would not change under the proposed project, implementation of the proposed project (which includes the Elan Project) would also not result in an exceedance of the previous projections in population and employment growth that were forecast by SCAG over the long term at the time the MEMU EIR was prepared. Because it was determined that the City's CAP is a qualifying GHG emissions reduction plan through 2020 and the Elan Project would be operational in 2020, the GHG emissions associated with this project would have been accounted for in the CAP. Thus, the GHG emissions generated by the Elan Project would not have a significant impact on the environment, and this impact would be *less than significant*.

Threshold: Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Impact 4.3-E2: The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

As discussed above in *Criteria of Significance*, the proposed project would not have a significant effect on the environment if it is found to be consistent with the applicable regulatory plans and policies to reduce GHG emissions, including emissions reduction measures discussed within CARB's AB 32 Climate Change Scoping Plan, SCAG's RTP/SCS, the City of Santa Ana's General Plan, and the City of Santa Ana's CAP.

The AB 32 Climate Change Scoping Plan identifies specific measures to reduce GHG emissions to 1990 levels by 2020. The scoping plan considers a range of actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms (e.g., a cap-and-trade system). These measures include those related to improving transportation technology and infrastructure for mobile-source emissions reductions, such as the Advanced Clean Cars program, the low-carbon fuel standard, and various vehicle efficiency measures. The plan also includes measures to achieve cleaner and more efficient energy, such as the Renewables Portfolio Standard, which aims to have at least 33 percent and 50 percent of electricity generation from renewable resources by 2020 and 2050, respectively. The plan addresses emissions from fluorinated gases through requiring low-GWP refrigerants for new motor vehicle air-conditioning systems and a phasedown of high-GWP production and import. The Elan Project would be consistent with a number of the measures within the AB 32 Scoping Plan and other measures adopted by CARB but not yet included in the scoping plan. As a result, project-related GHG emissions would be reduced through several of the AB 32 Scoping Plan measures. Accordingly, the Elan Project would not conflict with AB 32.

The Elan Project includes 603 new residential units and 8,500 square feet of commercial uses within the MEMU Overlay Zone expansion area. This new development is consistent with the capacities analyzed in the MEMU Overlay Zone expansion area and original MEMU 2007 EIR. Because there is no proposed increases in development or population above the previously analyzed capacities, the 2016 RTP/SCS was developed with knowledge of these increases in population and land uses. Therefore, the Elan Project is consistent with, and would not conflict with, SCAG's 2016 RTP/SCS.

The City's CAP, adopted in 2015, contains measures to reduce GHG emissions related to transportation and land use, community-wide energy, municipal operations energy, and solid waste, water, and

wastewater. The Elan Project would be consistent with the relevant measures outlined in the plan. The project's consistency with applicable CAP measures is also discussed above in Table 4.3-2.

As outlined in Table 4.3-2, above, the proposed Elan Project would be consistent with the relevant goals, objectives, policies, and measures contained in the City's CAP, some after implementation of mitigation measures. However, because the Santa Ana CAP is certified only through 2020, the Elan Project's consistency with this document is applicable only through the first year of operation. The project is a residential mixed-use project that will be operating and, therefore, emitting GHGs past this initial year of operation. Although the City's CAP will not be qualified past this initial operation year, the Elan Project will still be required to comply with the various federal and state regulations that address GHG emissions past 2020. As shown in Table 4.3-4, the majority of Elan Project emissions are due to mobile sources (approximately 74 percent). These emissions are expected to trend down parallel to the state's GHG emissions reductions over the long term because of the programs that were previously discussed, such as strengthening of Pavley standards for vehicle models 2017–2025. The second-highest emitting sources for the Elan Project are energy sources, which account for about 19 percent of the project's total emissions. These emissions are also expected to decrease with time because of programs such as the Renewables Portfolio Standard, which requires 50 percent of electricity to be procured from renewable energy resources by 2030.

Because the Elan Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, this impact would be *less than significant*.

Mitigation Measures Applicable to the Proposed Project

Because a climate change and GHG emissions analysis was not included in the MEMU EIR, there are no applicable mitigation measures that would apply to the proposed project.

New Mitigation Measures Applicable to the Proposed Project

As discussed previously, the City's CAP has been determined to be a qualifying GHG emissions reduction plan through 2020. In turn, because the City's CAP was prepared in 2015 and based on growth projections from SCAG, the CAP would have accounted for the growth that would result from development in the MEMU Overlay Zone that was analyzed in the original MEMU EIR in 2007. As such, GHG emissions generated by developments associated with the proposed project that would be completed and operational by 2020 in the MEMU Overlay Zone, including the Elan Project, would have been accounted for in the CAP and would not have a significant impact on the environment. However, because the City's CAP is not a qualified emissions reduction plan for the post-2020 period and it has been determined that the proposed project's net operational GHG emissions in 2040 would exceed the "substantial progress" efficiency metric of 1.37 MTCO_{2e} per SP that was derived from the 2050 reduction target articulated in EO S-3-05, developments associated with the proposed project that would be operational in the post-2020 period could generate GHG emissions that may have a significant impact on the environment. Thus, the mitigation measures below are newly developed to reduce impacts related to GHG emissions from implementation of the proposed project in the post-2020 period.

MM-GHG-1: Bicycle Infrastructure Improvements

The following improvements should be implemented to encourage cycling within the planning area:

- Projects should be within at least 0.5 mile of an existing/planned Class I or Class II bike lane and include a network that provides connection to existing off-site facilities. Bicycle routes should also connect to all streets contiguous with the project site; the route should have minimum conflicts with automobile parking and circulation facilities. All streets internal to the project wider than 75 feet should have Class II bicycle lanes on both sides.
- Bike parking should be provided at nonresidential projects (one bike rack space per 20 vehicle/employee parking spaces) and multi-unit residential projects (one long-term bicycle parking space for each unit without a garage). Long-term facilities should be provided at multi-unit residential developments and consist of a bicycle locker, locked room with standard racks, or a standard rack location that is staffed or monitored.
- Non-residential projects should provide “end-of-trip” facilities, including showers, lockers, and changing spaces.
- Bike-share infrastructure installation.

MM-GHG-2: Energy Efficiency Improvements

The following improvements will be implemented, when feasible, to achieve more energy-efficient operations within the planning area:

- Projects should exceed Title 24 requirements by at least 20 percent.
- Projects will, to the extent feasible, incorporate on-site renewable energy systems, including solar, wind, geothermal, low-impact hydro, and biomass and bio-gas strategies.
- Projects will incorporate water and energy saving measures into the project design, including, but not limited to, the following:
 - Installation of low-water-use appliances,
 - Use of only natural gas or electric stoves,
 - Installation of EnergyStar-labeled roof materials,
 - Installation of highly reflective cool roofing materials,
 - Installation of electrical outlets at exterior areas,
 - Use of energy-efficient appliances (e.g., EnergyStar),
 - Installation of shading mechanisms for windows, patios, and walkways, and
 - Installation of programmable thermostats.
- Projects will “weatherize” any existing structures to achieve energy savings. Weatherization strategies can include sealing air ducts, insulating, glazing windows, and tuning up or replacing air-conditioning and heating equipment.

MM-GHG-3: Streetlight Replacements

Where feasible, SCE-owned streetlights within the planning area will be purchased by the City, and the high-pressure sodium fixtures will be replaced with LED fixtures. Those streetlights within the planning area that are currently owned by the City will also be replaced with LED fixtures.

MM-GHG-4: Rainwater Harvesting

Where feasible and applicable, projects within the planning area will incorporate rain barrels and rainwater re-use practices into project design.

MM-GHG-5: Drought-resistant Landscaping

The following measures should be implemented to reduce water use and electricity associated with water-intensive plants:

- Drought-resistant native plants, as well as plants with low emissions and high carbon sequestration potential, should substitute landscaping with turf grass and other water-intensive vegetation.
- Vegetable gardens, bunch grass, and low-water landscaping should be encouraged for development within the planning area.

MM-GHG-6: Sidewalk and Pedestrian Infrastructure Improvements

The following measures would be implemented by future development projects in the MEMU Overlay Zone to the extent practicable to improve pedestrian safety and encourage walking to and from the project area:

- Projects shall provide a pedestrian access network that links all internal uses to all existing/planned external streets and pedestrian facilities contiguous with the project site, where applicable. The route connecting internal and external networks should have minimal conflict with parking and circulation facilities.
- All internal and adjacent sidewalks associated with a project should be a minimum of 5 feet wide, with vertical curbs, where applicable.
- Where feasible, pedestrian barriers should be minimized using grade separation, wider sidewalks, and traffic calming. In addition, physical barriers such as walls, landscaping, and slopes between facilities that impede pedestrian movement should be avoided.

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4.4 Hazards and Hazardous Materials

Summary of MEMU EIR Findings

The certified MEMU EIR found that implementation of the original MEMU Overlay Zone would have no impacts on the following hazards and hazardous materials thresholds. Implementation of the proposed project, including the Elan Project, was also found to have no impact on these thresholds; therefore, they are not discussed further in this SEIR. For more details on these thresholds, see Appendix A.

- The project would not result in a safety hazard for people residing or working in the project area within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport.
- The project would not result in a safety hazard for people residing or working in the project area within the vicinity of a private airstrip
- The project would not expose people or structures to significant losses, injuries, or death involving wildland fires, including where wildlands are adjacent to urbanized and intermixed with residential areas.

The certified MEMU EIR found that implementation of the original MEMU Overlay Zone would have less-than-significant impacts on the following hazards and hazardous materials thresholds. Because the proposed project could potentially handle hazardous materials (either through new development construction or operation) within 0.25 mile of a school and because the potential exists that proposed project development could occur on a contaminated site, it was determined that new or substantially more severe impacts could occur and both of these thresholds are fully evaluated in this SEIR.

- The project would not result in the handling of hazardous materials, substances, or waste within 0.25 mile of an existing school.
- The project would not create a significant hazard to the public or environment as a result of being located on a site listed in the “Cortese List” pursuant to Government Code Section 65962.5.

The certified MEMU EIR found that implementation of the original MEMU Overlay Zone would have less-than-significant impacts after incorporation of mitigation on the following hazards and hazardous materials thresholds. Because the proposed project could handle hazardous materials during both construction and operation, potentially encounter contaminated media (previously unidentified and documented), and would potentially affect circulation of traffic (and potentially emergency response) around the project area, it was determined that new or substantially more severe impacts could occur; therefore, all three of these thresholds are fully evaluated in this SEIR.

- The project would not result in a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials with implementation of mitigation measure **MM-OZ 4.6-1**. Mitigation measure **MM-OZ 4.6-1** would require a Health Risk Assessment (HRA) for diesel emissions as part of the development under the Overlay Zone and within 500 feet of an existing freeway.

- The project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials with implementation of mitigation measures **MM-OZ 4.6-2** and **MM-OZ 4.6-3**. These measures would ensure investigation and remediation of contamination takes place. They also include the preparation of a Risk Management Plan that includes the identification of risks associated with contaminants along with measures to protect workers and the public.
- The project would not impair implementation nor physically interfere with an adopted emergency response plan or emergency evacuation plan with the implementation of mitigation measures **MM-OZ 4.6-5** through **MM-OZ 4.6-7**. The measures include the preparation of a traffic control plan and consultation with the police and fire department to discuss temporary closure and alternative travel routes. These measures also call for the fire department to update of the Emergency Preparedness Plan.

Impacts of Proposed Project

MEMU Overlay Zone Expansion Area

Threshold: Would the proposed project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Impact 4.4-1. Implementation of the proposed project would not result in a significant hazard to the public or the environment through future development's routine transport, use, or disposal of hazardous materials. However, it could result in exposure of future residents to diesel exhaust emissions, which could pose a significant hazard.

Construction activities associated with future development projects proposed in the MEMU Overlay Zone expansion area would involve the routine transport, use, and disposal of hazardous materials such as fuel, solvents, paints, oils, grease, and caulking. Such transport, use, and disposal must be compliant with applicable requirements; such as the Resource Conservation and Recovery Act (RCRA), Department of Transportation Hazardous Materials Regulations, and Occupational Safety and Health Administration (OSHA) regulations (regulations are discussed in detail in Chapter 3, Section 3.4). Although solvents, paints, oils, grease, and caulking would be transported, used, and disposed of during construction, these materials are typically used in construction projects and would not represent the transport, use, and disposal of acutely hazardous materials. Furthermore, future development projects proposed in the expansion area would be required to obtain coverage under the State Water Resources Control Board's (SWRCB's) Construction General Permit and, therefore, would be required to implement Best Management Plans (BMPs) to reduce or eliminate pollutants (including hazardous materials) in stormwater and non-stormwater discharges. Impacts resulting from the proposed project would be **less than significant** and would not represent a substantial change from the previous conclusions in the MEMU EIR.

The primary elements of the proposed project include a potential increase in residential land use along with the potential development of commercial (retail and service) space, as well as office space in the expansion area. As discussed in Chapter 3, Section 3.4, residential land uses do not typically handle or store significant amounts of hazardous materials; however, some commercial locations can, as they might include vehicle repair sites, gasoline fueling stations, and dry cleaning

facilities. New development as part of the MEMU Overlay Zone expansion area that handles hazardous materials would be required to adhere to applicable requirements and regulations (Section 3.4). Furthermore, the City of Santa Ana Certified Unified Program Agency's (CUPA's) (in this case, the Orange County Health Care Agency Environmental Health Department) Hazardous Material Disclosure and Business Emergency Plan programs require businesses that handle hazardous materials in quantities equal to or greater than 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of compressed gas, or extremely hazardous substances, report this information. The aforementioned programs would minimize potential impacts on the public and environment associated with a release of hazardous materials by disclosing hazardous materials being used, requiring implementation of an emergency plan and making training programs for employees handling those hazardous materials mandatory. Impacts resulting from the proposed project would be **less than significant** and would not represent a substantial change from the previous conclusions in the MEMU EIR.

The eastern portion of the MEMU Overlay Zone Expansion Area is adjacent to the (heavily traveled) I-5 Santa Ana Freeway, which could result in significant quantities of diesel exhaust to that portion of the MEMU Overlay Zone expansion area. Due to the potential increase in residential land uses and the proximity of the freeway, this could result in a significant impact. Impacts related to exposure of sensitive receptors to pollutant concentration are discussed in further detail in Section 4.1, *Air Quality*.

Threshold: Would the proposed project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Impact 4.4-2. Construction activities associated with implementation of the proposed project could result in the release of hazardous materials to the environment through reasonably foreseeable upset and accident conditions.

Construction of future development projects proposed in the MEMU Overlay Zone expansion area would involve the handling of hazardous materials typically used in construction sites. The use of these materials could result in a release into onsite soils. However, these materials are expected to be handled in small quantities and would be subject to applicable regulations. In addition, future development projects would be required to obtain coverage under the Construction General Permit to reduce or eliminate potential pollutant (including hazardous materials) discharges or releases into the environment.

As discussed in Section 3.4, one Leaking Underground Storage Tank (LUST) site was located within the MEMU Overlay Zone expansion area while several other hazardous materials sites were located in the proposed project's vicinity. Sites with history of releases to soil and groundwater under the LUST database (including the site within the MEMU Overlay Zone expansion area) have received closure by the Regional Water Quality Control Board (RWQCB). The Raymond A. Villa Fundamental Intermediate School remains a Department of Toxic Substances Control (DTSC) School Investigation Site under the Site Cleanup Program (status updated in 2002). Because information regarding the school investigation case is limited and the site is immediately adjacent to the MEMU Overlay Zone expansion area's southern border, there is a possibility that the site could pose a hazardous materials exposure risk to future development projects proposed in this area during construction. However, implementation of mitigation measure **MM-OZ 4.6-2** from the MEMU EIR would reduce

potential impacts (from the Raymond A. Villa Fundamental Intermediate School or any other site with a history of contamination in the vicinity) by requiring preparation of a preliminary environmental site assessment (and additional investigation and remediation, if applicable) for future development projects in the MEMU Overlay Zone expansion area. Furthermore, implementation of mitigation measure **MM-OZ 4.6-3** from the MEMU EIR during construction activities would address potential exposure impacts associated with previously unidentified contamination. It is also possible that construction activities in the MEMU Overlay Zone expansion area could come across previously unidentified USTs and/or their associated features. USTs uncovered during construction activities would be managed according to the County's CUPA standards and under their oversight. If it is determined that a release associated with the UST occurred, remediation would be conducted under the oversight of either the DTSC or the RWQCB.

As development within the expansion area could also involve demolition of existing structures, it is possible that (depending on the age of the building) construction personnel could be exposed to asbestos containing material (ACM) and/or lead based paint (LBP). However, adherence to applicable rules and regulations governing these types of hazardous materials—such as South Coast Air Quality Management District Rule 1403, Title 8 of the California Code of Regulations, Part 61, Subpart M of the Code of Federal Regulations, and Cal/OSHA standards—would reduce potential exposure to construction personnel by requiring ACM and LBP surveys and abatement (if required) prior to construction.

In addition, as mentioned under Impact 4.4-1, future development projects that handle hazardous materials would be required to adhere to applicable requirements and regulations. Also, implementation of the CUPA's Hazardous Material Disclosure and Business Emergency Plan programs (if the specified thresholds are exceeded) would further minimize potential impacts on the public and environment associated with a release of hazardous materials. Therefore, impacts resulting from the proposed project would be *less than significant* and would not represent a substantial change from the previous conclusions in the MEMU EIR.

Threshold: Would the proposed project emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Impact 4.2-3. Implementation of the proposed project could result in the handling of hazardous materials, substances, or waste within 0.25 mile of an existing school.

There are no schools within the MEMU Overlay Zone expansion area; however, there are several within 0.25 mile. As previously mentioned, future construction activities would only involve the use of small amounts of hazardous materials typically used in construction such as fuel, solvents, paints, oils, grease, and caulking. The handling of these materials would be compliant with applicable regulations (as described in Chapter 3, Section 3.4) and would not represent the transport, use, and disposal of acutely hazardous materials. Furthermore, implementation of BMPs during construction activities would further reduce the potential for a hazardous materials release to the surrounding environment, including to nearby schools.

Operation of future development projects are not expected to involve the use acutely hazardous materials. Moreover, commercial operations within the MEMU Overlay Zone expansion area that handle hazardous materials would be required to adhere to applicable regulations and, if necessary, would implement Hazardous Material Disclosure and Business Emergency Plan programs to further

minimize potential impacts on the surrounding environment (including nearby schools) from a potential release of hazardous materials. Therefore, impacts resulting from the proposed project would be ***less than significant*** and would not represent a substantial change from the previous conclusions.

Threshold: Would the proposed project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Impact 4.4-4. The proposed project area includes sites that are included on a list of hazardous materials sites and, as a result, could create a significant hazard to the public or environment

One LUST site was identified within the MEMU Overlay Zone expansion area, however, the site has received closure by the oversight agency. The Raymond A. Villa Fundamental Intermediate School is immediately adjacent to the southern border of the MEMU Overlay Zone expansion area and remains a DTSC School Investigation Site. Information regarding the school investigation case is limited; therefore, there is a possibility that the site could pose an exposure risk to construction personnel. Implementation of mitigation measure **MM-OZ 4.6-2** would reduce potential impacts (from Raymond A. Villa Fundamental Intermediate School and any other site with a history of contamination in the vicinity) by requiring preparation of a preliminary environmental site assessment and subsequent investigation, if necessary, for development sites in the MEMU Overlay Zone expansion area. Therefore, impacts resulting from the proposed project would be ***less than significant*** and would not represent a substantial change from the previous conclusions in the MEMU EIR.

Threshold: Would the proposed project Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact 4.4-5. Implementation of the proposed project could interfere with an adopted emergency response plan or emergency evacuation plan.

Future development projects in the MEMU Overlay Zone expansion area would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Implementation of the proposed project would not result in any substantial traffic queuing along major arterials surrounding the project area. It is expected that large construction vehicles entering and exiting construction sites would be guided by the use of personnel using signs and flags to direct traffic. Furthermore, as required for all development projects within the MEMU Overlay Zone, adequate emergency access to the project area and surroundings would be provided through implementation of mitigation measures **MM-OZ 4.6-5** and **MM-OZ 4.6-6** during construction. Moreover, the City's Emergency Preparedness Plan would be updated as required by MEMU EIR mitigation measure **MM-OZ 4.6-7** and would be implemented to address the potential for accidental release of hazardous materials during project operations. Therefore, impacts resulting from the proposed project would be ***less than significant*** and would not represent a substantial change from the previous conclusions in the MEMU EIR.

Elan Project

Threshold: Would the proposed project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Impact 4.4-E1. Development of the Elan Project would not result in a significant hazard to the public or the environment through future development's routine transport, use, or disposal of hazardous materials.

Construction activities associated with the Elan Project would involve the routine transport, use, and disposal of hazardous materials similar to what is described above for the MEMU Overlay Zone expansion area. Such transport, use, and disposal would be compliant with applicable requirements, and materials used in construction do not represent the handling of acutely hazardous materials. The Elan Project would be required to obtain coverage under the Construction General Permit and would implement BMPs to reduce or eliminate hazardous materials discharge or releases. Impacts would be *less than significant*.

The Elan Project consists of development of 603 residential apartments and approximately 8,500 square feet of commercial space. Residential land uses do not typically use or store significant amounts of hazardous materials, however, depending on the nature of the business, commercial locations do. Businesses that handle hazardous materials would be required to adhere to applicable requirements and regulations. In addition, businesses that handle hazardous materials in quantities equal to or greater than 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of compressed gas, or extremely hazardous substances, are required to report this information to the City's CUPA as part of the Hazardous Material Disclosure and Business Emergency Plan program requirements. The Hazardous Material Disclosure and Business Emergency Plan programs would minimize potential impacts on the public and environment by requiring disclosure of hazardous materials being used, and implementation of an emergency plan and training programs for employees handling hazardous materials. Impacts resulting from the proposed project would be *less than significant*.

The northern portion of the Elan Project is adjacent to the heavily utilized I-5 Santa Ana Freeway and could result in significant quantities of diesel exhaust emissions to that portion of the project. As the Elan Project also includes residential development, heavy diesel emissions could result in a significant impact in the area. As mentioned above for the expansion area, impacts related to exposure of sensitive receptors to pollutant concentration are discussed in further detail in Section 4.1, *Air Quality*.

Threshold: Would the proposed project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Impact 4.4-E2. Construction activities associated with implementation of the Elan Project could result in the release of hazardous materials to the environment through reasonably foreseeable upset and accident conditions.

The Raymond A Villa Fundamental Intermediate School and former EECO Inc. site are within 0.25 mile of the Elan project; therefore, there is a possibility that historic land uses at the site could pose a hazardous materials exposure risk during construction activities. Additionally, the site has a history of agricultural land use, so the Phase I environmental site assessment (ESA) recommended sampling for pesticides and herbicides prior to construction (if development of the site included residential land use). Implementation of mitigation measure **MM-OZ 4.6-2** from the MEMU EIR would reduce potential exposure impacts by requiring additional investigation and subsequent remediation if contamination is confirmed. As discussed in Chapter 3, Section 3.4, the Santa Ana Fire Station No. 2 and the Honeywell sites were identified in the LUST database and are within 0.25 mile of the Elan Project site. However, both sites were listed as having been granted closure status from the RWQCB, and the likelihood of these sites having impacted the Elan Project site is low. Furthermore, implementation of **MM-OZ 4.6-3** from the MEMU EIR during construction would address potential exposure impacts associated with previously unidentified contamination, if it exists.

In addition, the existing Elks Lodge was constructed in 1960 and thus, redevelopment of the site could expose construction personnel to ACM and/or LBP. Adherence to applicable rules and regulations related to these materials (discussed in Impact 4.4-2 for the MEMU Overlay Zone expansion area) would reduce potential exposure risks by requiring ACM and LBP surveys and abatement, if necessary. Therefore, potential impacts resulting from the Elan Project would be *less than significant*.

Furthermore, any commercial operations proposed as part of the Elan Project that handle hazardous materials would be required to adhere to applicable requirements and regulations. Implementation of the CUPA's Hazardous Material Disclosure and Business Emergency Plan programs (if the specified thresholds are exceeded) would further minimize potential impacts on the public and environment associated with a potential release of hazardous materials. Therefore, impacts resulting from the Elan Project would be *less than significant*.

Threshold: Would the proposed project emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Impact 4.4-E3. Development of the Elan Project could result in the handling of hazardous materials, substances, or waste within 0.25 mile of an existing school.

The Raymond A. Villa Fundamental Intermediate School is within 0.25 mile of the Elan Project site; however, potential impacts associated with the handling of hazardous materials would be reduced to less than significant by implementation of construction BMPs and adherence to applicable rules and regulations as mentioned under Impact 4.4-3 for the MEMU Overlay Zone expansion area. In

addition, hazardous materials used during the construction phase of the project would be materials typically used in construction projects and do not consist of acutely hazardous materials. Therefore, impacts resulting from development of the Elan Project would be ***less than significant***.

Threshold: Would the proposed project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Impact 4.4-E4. The Elan Project area includes sites that are included on a list of hazardous materials sites and, as a result, could create a significant hazard to the public or environment.

There were no hazardous materials sites identified within the Elan Project site during review of the site-specific ESA and also during the supplemental Geotracker and Envirostor database research. The analysis under Impact 4.4-E3 above discusses hazardous materials sites within the Elan Project's vicinity. Impacts resulting from development of the Elan Project would be ***less than significant***.

Threshold: Would the proposed project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Threshold 4.8-E5. Development of the Elan Project could interfere with an adopted emergency response plan or emergency evacuation plan.

As discussed above for future development projects proposed within the MEMU Overlay Zone expansion area, implementation of the Elan Project would not result in any substantial traffic queuing along major arterials surrounding the project area. Large construction vehicles entering and exiting construction sites would be guided by the use of personnel using signs and flags to direct traffic. In addition, adequate emergency access would be assured via implementation of mitigation measures **MM-OZ 4.6-5 and MM-OZ 4.6-6** from the MEMU EIR during construction. Therefore, impacts resulting from the Elan Project would be ***less than significant***.

Mitigation Measures Applicable to the Proposed Project

Implementation of mitigation measures **MM-OZ 4.6-1** through **MM-OZ 4.6-3** and **MM-OZ 4.6-5** through **MM-OZ 4.6-7** would apply to projects proposed in the MEMU Overlay Zone expansion area, including the Elan Project.

MM-OZ 4.6-1 For future residential uses that are developed under the Overlay Zone within 500 feet of an existing freeway, a HRA for diesel exhaust shall be prepared. Recommendations contained within the HRA shall be implemented in project design.

MM-OZ 4.6-2 Prior to the issuance of grading permits on any project site, the developer(s) shall:

- Investigate the project site to determine whether it or immediately adjacent areas have a record of hazardous materials contamination via the

preparation of a preliminary ESA, which shall be submitted to the City for review. If contamination is found, the report shall characterize the site according to the nature and extent of contamination that is present before development activities proceed at that site.

- If contamination is determined to be onsite, the City, in accordance with appropriate regulatory agencies, shall determine the need for further investigation and/or remediation of the soils conditions on the contaminated site. If further investigation or remediation is required, it shall be the responsibility of the site developer(s) to complete such investigation and/or remediation prior to construction of the project.
- If remediation is required as identified by the local oversight agency, it shall be accomplished in a manner that reduces risk to below applicable standards and shall be completed prior to issuance of any occupancy permits.

MM-OZ 4.6-3 In the event that previously unknown or unidentified soil and/or groundwater contamination that could be present a threat to human health or the environment is encountered during construction of the proposed project, construction activities in the immediate vicinity of the contamination shall cease immediately. If contamination is encountered, A Risk Management Plan shall be prepared and implemented that (1) identifies the contaminants of concern and the potential risk each contaminant would pose to human health and the environment during construction and post-development and (2) describes measures to be taken to protect workers, and the public from exposure to potential site hazards. Such measures could include a range of options, including, but not limited to, physical site controls during construction, remediation, long-term monitoring, post-development maintenance or access limitations, or some combination thereof. Depending on the nature of contamination, if any, appropriate agencies shall be notified (e.g., City of Santa Ana Fire Department). If needed, a Site Health and Safety Plan that meets Occupational Safety and Health Administration requirements shall be prepared and in place prior to commencement of work in any contaminated area.

MM-OZ 4.6-5 Prior to initiation of construction activities, any development within the Overlay Zone shall have a completed traffic control plan, prepared by the developer that will be implemented during construction activities. This may include, but is not limited to, the maintenance of at least one unobstructed lane in both directions on surrounding roadways. At any time only a single lane is available, the developer shall provide a temporary traffic signal, signal carriers (i.e. flagpersons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway segment, the developer should provide appropriate signage indicating alternative routes.

MM-OZ 4.6-6 The City Planning Department shall consult with the Santa Ana Police Department and the Santa Ana Fire Department to disclose temporary closures and alternative travel routes in order to ensure adequate access for emergency

vehicles when construction of future projects would result in temporary land or roadway closures.

MM-OZ 4.6-7

The Santa Ana Fire Department, in consultation with other applicable City Departments (e.g. Police), shall update their Emergency Preparedness Plan prior to occupancy of the first project developed under the Overlay Zone, to address potential for accidental release of hazardous materials that may be used, stored, and/or transported in association with operation of project implementation.

4.5 Hydrology and Water Quality

Summary of MEMU EIR Findings

The certified MEMU EIR found that implementation of the original MEMU Overlay Zone would have no impacts on the following hydrology and water quality thresholds. Implementation of the proposed project, including the Elan Project, was also found to have no impact on these thresholds; therefore, they are not discussed further in this SEIR. For more details on these thresholds, see Appendix A.

- The project would not place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- The project would not place within a 100-year flood hazard area structures, which would impede or redirect flood flows.
- The project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
- The project would not expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow.

The certified MEMU EIR found that implementation of the original MEMU Overlay Zone would have less-than-significant impacts on the following hydrology and water quality threshold. Implementation of the proposed project, including the Elan Project, was also found to have less-than-significant impacts on this threshold; therefore, it is not discussed further in this SEIR. For more details on this threshold, see Appendix A.

- The project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

The certified MEMU EIR found the following hydrology and water quality impacts to be less than significant after implementation of mitigation. Because the proposed project would extend the boundaries of the MEMU Overlay Zone into an area of the City not previously evaluated in the MEMU EIR, it was determined the proposed project could result in new or substantially more severe impacts related to these thresholds. Thus, these thresholds are fully evaluated in this SEIR.

- The project would not violate water quality standards, waste discharge, or otherwise substantially degrade water quality with implementation of mitigation measure **MM-OZ 4.7-1**. Mitigation measure **MM-OZ 4.7-1** would ensure future development projects would comply with existing regulations and prepare Storm Drain Plans, Stormwater Pollution Prevention Plans (SWPPPs), and Water Quality Management Plans (WQMPs) as necessary.
- The project would not alter the existing drainage pattern of the area and potentially result in erosion and siltation with implementation of mitigation measure **MM-OZ 4.7-1**. Mitigation measure **MM-OZ 4.7-1** would ensure future development projects would comply with existing regulations and prepare SWPPPs and WQMPs as necessary.

- The project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off site. Additionally, the project would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. With implementation of mitigation measures **MM-OZ 4.7-1** and **MM-OZ 4.7-2** impacts would be less than significant. Mitigation measure **MM-OZ 4.7-1** would require future development projects to prepare a WQMP and implement appropriate BMPs as necessary to reduce the volume of runoff generated, and mitigation measure **MM-OZ 4.7-2** would ensure that runoff generated by future development projects would not exceed the capacity of existing storm drain systems.

Impacts of Proposed Project

MEMU Overlay Zone Expansion Area

Threshold: Would the project violate any water quality standards, waste discharge requirements, or otherwise substantially degrade water quality?

Impact 4.5-1: Implementation of the proposed project would not violate water quality standards, waste discharge requirements, or otherwise substantially degrade water quality.

Construction

Expansion of the MEMU Overlay Zone would not result in new significant impacts, substantially increase the severity of a previously analyzed impact, or require new mitigation measures related to water quality standards or waste discharge requirements that have not already been evaluated in the MEMU EIR.

The proposed project involves expanding the boundaries of the existing MEMU Overlay Zone to add an additional 33.5 acres or approximately 48 parcels to the project area. The expanded project area would extend west primarily along First Street, and is generally bound by I-5 on the east, Grand Avenue on the west, East Chestnut Avenue on the south, and Fourth Street on the north. The existing parcels are currently developed with a variety of commercial and residential land uses or are vacant, undeveloped, or abandoned. Although the boundaries of the MEMU Overlay Zone would be modified to include a larger area, the development capacity would remain the same for the entire MEMU Overlay Zone as evaluated in the MEMU EIR.

As discussed in the MEMU EIR, construction of future development projects within the MEMU Overlay Zone would temporarily result in soil disturbance, alteration of drainage patterns, sedimentation, erosion, and generation of construction waste, as well as possible spills and leaks from construction equipment that could result in stormwater contamination and impacts on water quality. However, projects that disturb one or more acres of land are subject to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Order No. 2009-0009-DWQ, NPDES No. CAS000002, and any subsequent permits in effect at the time of construction. As part of coverage under the Construction General Permit for the

duration of construction activities, future projects would be required to implement a SWPPP. Construction contractors would implement erosion, sediment control, and waste and hazardous materials management BMPs specified in a project's Construction General Permit SWPPP to minimize discharges from any project site and entering receiving waters. Moreover, construction and operation of all development projects would be required to comply with regional and local regulations, including the City's Water Pollution Ordinance, adopted to ensure compliance with federal requirements for the control of urban pollutants to stormwater runoff that enter the network of storm drains throughout the County of Orange. Related to construction, the ordinance requires that prior to the issuance of grading permits, the City review project plans and impose terms, conditions, and requirements on projects to control pollutants in stormwater runoff from a projects site.

Operation

Similar to the existing MEMU Overlay Zone, operation of future development projects in the MEMU Overlay Zone expansion area could also result in the addition of contaminants into stormwater runoff entering the City's drainage system. It is possible that future development projects would increase the amount of impervious surfaces that could potentially increase the amount of stormwater runoff. However, because a majority of the MEMU Overlay Zone expansion area is already built-out, any increase in impervious surfaces is anticipated to be minor in relation to existing conditions. Future development projects would be required to comply with the County's MS4 Permit requirements as well as the conditions of the City's Local Implementation Plan (LIP) and the Drainage Area Master Plan (DAMP), including the implementation of appropriate BMPs to control stormwater runoff and to prevent deterioration of water quality. Additionally, as discussed in the MEMU EIR, discretionary projects would require the preparation of a WQMP that would identify site design, source control, and treatment control BMPs to be implemented in order to address the specific pollutants anticipated from future projects, and would detail the specific operation and maintenance of each BMP.

Thus, in order to ensure compliance with existing regulations, implementation of mitigation measure **MM-OZ 4.7-1** from the MEMU EIR would be required for future development projects in the MEMU Overlay Zone expansion area to minimize impacts on water quality during construction and operation. Therefore, with implementation of mitigation measure **MM-OZ 4.7-1** impacts on water quality from the proposed project would be *less than significant* and consistent with the findings of the MEMU EIR.

Threshold: Would the project 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 that would result in substantial erosion or siltation onsite or offsite?

Impact 4.5-2: Future development in the MEMU Overlay Zone expansion area could alter the existing drainage pattern of the area and potentially result in erosion and siltation.

Construction

Expansion of the MEMU Overlay Zone would not result in new significant impacts, substantially increase the severity of a previously analyzed impact, or require new mitigation measures related to alteration of existing drainage patterns that have not already been evaluated in the MEMU EIR.

As discussed under Impact 4.5-1, expansion of the MEMU Overlay Zone would result in the construction of future development projects which would alter existing drainage patterns. However, future development projects would be required to implement erosion, sediment control, and waste and hazardous materials management BMPs specified in a project's Construction General Permit SWPPP to minimize discharges from any project site and entering receiving waters. Moreover, construction and operation of all development projects would be required to comply with regional and local regulations, including the City's Water Pollution Ordinance. As described in Impact 4.5-1, compliance with NPDES regulations and the City's Municipal Code would reduce the risk of short-term erosion resulting from drainage alteration during construction to less than significant.

Operation

Similar to the original MEMU Overlay Zone area, the majority of the MEMU Overlay Zone expansion area is presently developed with general commercial uses with some residential uses in the northwest, central, and southeast portions. The introduction of new uses in the MEMU Overlay Zone expansion area is not expected to result in substantial changes to the existing drainage patterns because existing drainage facilities would continue to be used and the amount of runoff would remain similar to present levels. However, as discussed in the MEMU EIR, future development could result in minor alterations to drainage, such as changes in ground surface permeability via paving, or changes in topography via grading and excavation.

Impact 4.5-1 discusses applicable regulations that would limit pollutant discharges from future development in the expansion area. In addition, as discussed above and in the MEMU EIR, all development in the MEMU Overlay Zone would be subject to the provisions of the City's LIP and Orange County DAMP. These regulations include the implementation of appropriate BMPs, including a range of methods that could minimize offsite erosion, including but not limited to, hydromodification devices, swales/biofilters, basins, and various filters.

In addition, as discussed in Threshold 4.5-1, mitigation measure **MM-OZ 4.7-1** would require future developers to prepare a storm drain plan and WQMP. Implementation of these plans would reduce the volume of sediment-laden runoff discharging from sites within the MEMU Overlay Zone expansion area. Therefore, with implementation of mitigation measure **MM-OZ 4.7-1** from the MEMU EIR, impacts from alteration of existing drainage patterns during construction and operation would be *less than significant* and consistent with the findings of the MEMU EIR.

Threshold: Would the project substantially alter the existing drainage pattern and potentially result in increased downstream flooding through the addition of impervious surfaces, or exceed the capacity of existing or planned stormwater drainage systems?

Impact 4.5-3: Future development in the MEMU Overlay Zone expansion area could alter the existing drainage pattern and potentially result in increased downstream flooding through the addition of impervious surface, or exceeding the capacity of existing or planned stormwater drainage systems.

Expansion of the MEMU Overlay Zone would not result in new significant impacts, substantially increase the severity of a previously analyzed impact, or require new mitigation measures related to downstream flooding or exceeding the capacity of existing or planned stormwater drainage systems.

As discussed in the MEMU EIR, future development in the Overlay Zone would generally result in infill development or redevelopment. As such, most of the future development projects would not result in new development that would substantially alter drainage patterns because these areas are already developed with existing uses and impervious surfaces. However, similar to the existing MEMU Overlay Zone, because vacant land is also present within the expansion area, the MEMU EIR discussed that future development projects could increase stormwater runoff through development of vacant land and the creation of more impervious surfaces in the planning area. Additionally, the MEMU EIR recognized that the adequacy of the existing storm drain system was unknown and thus the increased runoff could exceed the capacity of existing and planned infrastructure and cause downstream flooding impacts. Therefore, the MEMU EIR required implementation of mitigation measure **MM-OZ 4.7-2** to ensure that build out of the MEMU Overlay Zone does not result in exceedance of the capacity of existing or planned stormwater drainage systems. These same conditions apply to the MEMU Overlay Zone expansion area, and mitigation measure **MM-OZ 4.7-2** would also be applicable to future development projects proposed with the expansion area because the existing capacity of the existing storm drain system in the expansion area is unknown.

In addition, adherence to mitigation measure **MM-OZ 4.7-1** would require the preparation of a WQMP and implementation of BMPs, which could incorporate stormwater detention facilities and would reduce the volume of runoff generated (and potential for flooding) in the expansion area. Thus, with implementation of mitigation measures **MM-OZ 4.7-1** and **MM-OZ 4.7-2** alteration of existing drainage patterns including the addition of impervious surface would not result in downstream flooding or exceed the capacity of existing or planned stormwater drainage systems. These findings are consistent with the findings of the MEMU EIR. No new impacts would occur and no new mitigation would be required. Impacts would be *less than significant*.

Elan Project

Threshold: Would the project violate any water quality standards, waste discharge requirements, or otherwise substantially degrade water quality?

Impact 4.5-E1: Implementation of the Elan Project would not violate water quality standards, waste discharge requirements, or otherwise substantially degrade water quality.

As with the MEMU Overlay Zone expansion area, construction and operation of the Elan Project would not result in new significant impacts, substantially increase the severity of a previously analyzed impact, or require new mitigation measures related to water quality or waste discharge requirements that have not already been evaluated in the MEMU EIR.

Construction

The central and southern portions of the Elan Project site are developed with the existing Elks Lodge and paved parking lot while the northern portion is currently a vacant lot. Under existing conditions, any runoff not naturally infiltrated into the ground drains towards the existing public storm drain system to the Santa Ana-Santa Fe Channel, Peters Canyon Channel (OCFCD Facility F06), San Diego Creek Reach 1 (OCFCD Facility F01), and ultimately out to the Newport Bay. San Diego Creek Reach 1 and both upper and lower Newport Bay are listed as impaired by the State Water Resources Control Board for sedimentation/siltation and have active TMDLs limits for siltation (Table 3.5-3).

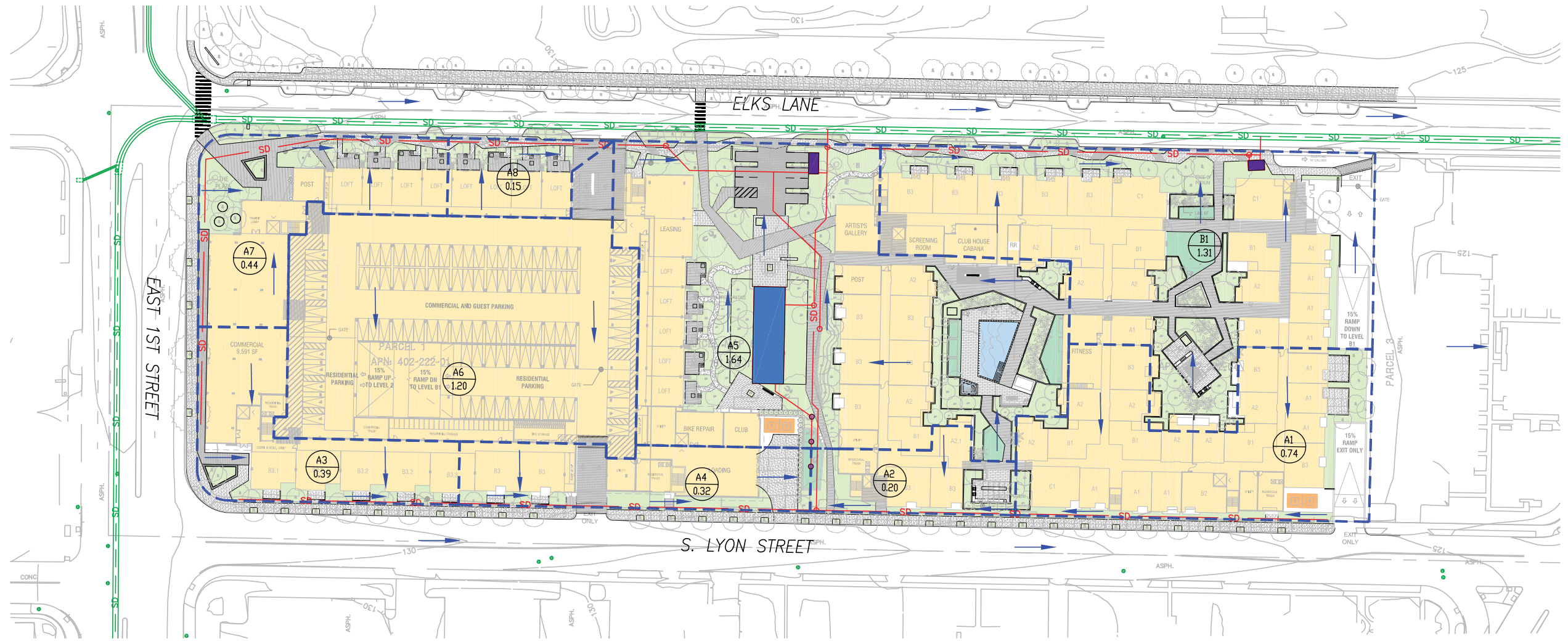
During construction, the Elan Project would generate surface water pollutants such as sediment, oil and grease, and miscellaneous wastes from construction activities. Water quality could be temporarily affected if disturbed sediments were discharged via existing stormwater collection systems to impaired water bodies. Increased turbidity resulting from construction-related sediment discharge can introduce compounds toxic to aquatic organisms, increase water temperature, and stimulate the growth of algae. Vegetation removal and pesticide use (including herbicides and fungicides) associated with site preparation work can also result in erosion and surface water contamination from runoff. Pesticide impacts on water quality include toxicity to aquatic species and bioaccumulation in larger species. In addition, the delivery, handling, and storage of construction materials and wastes, as well as use of construction equipment, could also introduce the risk of stormwater contamination if not properly conducted. Staging areas can also be sources of pollution because of the use and storage of equipment and materials during construction. Impacts associated with metals in stormwater include toxicity to aquatic organisms, such as bioaccumulation.

As discussed above under Impact 4.5-1 for the MEMU Overlay Zone expansion area, and required for all proposed development projects within the MEMU Overlay Zone, the Elan Project would be required to implement mitigation measure **MM-OZ 4.7-1**. Furthermore, construction of the proposed project would disturb more than 1 acre and, therefore, would be required to prepare and implement a SWPPP, in accordance with the General Construction Permit. The SWPPP would list BMPs that would be implemented to protect stormwater runoff, and monitoring of BMP effectiveness. At a minimum, BMPs would include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with stormwater. The SWPPP would also specify properly designed centralized storage areas that keep these materials out of the rain. If grading must be conducted during the rainy season, the primary BMPs selected would focus on erosion control (i.e., keeping sediment in place). Therefore, with implementation of mitigation measure **MM-OZ 4.7-1**, the Elan Project would have a *less-than-significant* impact on water quality standards and waste discharge requirements during construction activities.

Operation

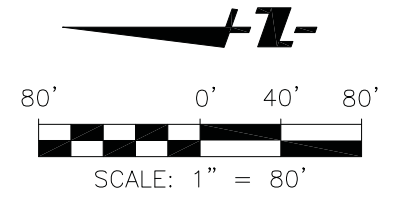
During operations, sources of pollution to runoff and groundwater would include contaminants that have accumulated on developed and land surfaces over which stormwater would pass and could be transported to receiving waters. Between rainstorms, material would be deposited on internal streets, paved areas, roof tops, and other surfaces from debris dropped or scattered by individuals; wastes from dirt from renovation, construction, or demolition; fecal droppings from animals; oils and various residues contributed by vehicular traffic; and fallout of airborne particles. Similar to construction, operations activities could exacerbate active TMDLs should polluted runoff enter the storm drain system.

To address the City's MS4 Permit requirements, the Elan Project includes the use of infiltration and biotreatment BMPs to prevent stormwater pollution. Figure 4.5-1 depicts the hydrology and drainage patterns on the site post construction as well as the proposed BMPs. Post construction, the Elan Project site would be approximately 15 percent pervious and 85 percent impervious, and drainage patterns would remain generally the same as the existing condition. The western portion of the Elan Project site would drain in a westerly direction towards South Lyon Street and into the proposed area along the western boundary of the project site. Low flows would be diverted to a detention gallery prior to infiltration via drywell, while high flows would continue towards the



LEGEND

- PROPERTY LINE
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- BMP DRAINAGE AREA BOUNDARY
- PROPOSED COMMON AREA LANDSCAPING
- PROPOSED BUILDING
- STREET SWEEPING PRIVATE STREETS & PARKING LOTS
- TRASH ENCLOSURE
- CATCH BASIN STENCILING & MAINTENANCE
- PROPOSED DETENTION GALLERY WITH PRE-TREATMENT CHAMBER
- PROPOSED MAXWELL IV DRYWELL
- PROPOSED MODULAR WETLAND SYSTEM
- DIRECTION OF FLOW



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Source: FUSCOE Engineering



Figure 4.5-1
Elan Project Preliminary Water Quality Management Plan
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR

existing storm drain along Elks Lane. Flows from the eastern portion of the Elan Project site would drain in a southerly direction, where low flows would drain to one of two Modular Wetland Systems for treatment, while high flows would connect directly to the existing storm drain along Elks Lane.

As shown on Figure 4.5-1, the Elan Project site has been divided into nine Drainage Management Areas (DMAs) based on the proposed site grading patterns, drainage patterns, storm drain, and catch basin locations. Table 4.5-1 summarizes the design capture volumes (DCV) and treatment flow rates (Q_{Design}) for each DMA.

Table 4.5-1. Summary of Drainage Management Areas

DMA ID	Tributary Drainage Area (ft ²)	Tributary Drainage Area (ac)	% Imp.	Design Storm Depth (in)	Estimated Tc (min)	Rainfall Intensity (in/hr)	Simple Method DCV (ft ³)	Q_{Design} (cfs)
A1, 2, 3, 4 & 6	124,161	2.85	92	0.75	5	0.26	6,518	0.622
A5, 7 & 8	97,200	2.23	76	0.75	5	0.26	4,355	0.416
B1	56,933	1.31	87	0.75	5	0.26	2,847	0.272
Total	278,294	6.39	85	0.75	5	0.26	13,707	1.309

Source: Appendix E

ac = acres

cfs = cubic feet per second

ft² = square feet

ft³ = cubic feet

imp. = impervious

in = inches

in/hr = inches per hour

min = minutes

Tc = time of concentration

Infiltration BMPs are low impact development (LID) BMPs that capture, store, and infiltrate runoff. These BMPs are engineered to store a specific volume of water and have no design surface discharge until this volume is exceeded. As infiltration was determined partially feasible on the site, the infiltration BMPs to be implemented include three drywell systems to be located within the drive aisles of each DMA. Each drywell would consist of an infiltration drywell below a concrete settling chamber. The drywell system would incorporate pre-treatment of runoff through a settling chamber that traps trash, floating debris, oil and grease, and large sediment. Pre-treated flows would then be diverted to the drywell and surrounding soil. With the incorporation of pretreatment and infiltration, drywells have high removal effectiveness for all stormwater pollutants of concern.

In order to maximize infiltration within the drywells, an underground detention system would be located upstream of the drywells. A detention gallery system is proposed to provide detention capacity in addition to the storage capacity of the drywell settling chambers (approximately 324 ft³ per drywell). The detention gallery is estimated to have a total storage of approximately 7,600 ft³ while the three drywells are estimated to have a total storage of approximately 972 ft³. The total amount of storage provided for infiltration is estimated at approximately 8,572 ft³, which exceeds the Simple Method DCV as well as the volume detained for hydrology purposes that will infiltrate into the series of drywells.

Biotreatment BMPs are a broad class of LID BMPs that reduce stormwater volume to the maximum extent practicable, treat stormwater using a suite of treatment mechanisms characteristic of biologically active systems, and discharge water to the downstream storm drain system or directly to receiving waters. Treatment mechanisms include media filtration (though biologically active

media) and vegetative filtration. The biotreatment BMPs proposed for the Elan Project include the installation of two Modular Wetland Systems. These would be implemented for the areas of the Elan Project site that are unable to infiltrate (specifically the eastern portion). These biotreatment systems were selected based on their ability to treat the project's pollutants of concern to a medium or high effectiveness. Modular Wetland Systems are proprietary biotreatment systems that utilize multi-stage treatment processes including screening media filtration, settling, and biofiltration. The pretreatment chamber contains the first three stages of treatment, and includes a catch basin inlet filter to capture trash, debris, gross solids and sediments, a settling chamber for separating out larger solids, and a media filter cartridge for capturing fine suspended solids, metals, nutrients, and bacteria. Runoff then flows through the wetland chamber where treatment is achieved through a variety of physical, chemical, and biological processes. As stormwater passes down through the planting soil, pollutants are filtered, adsorbed, biodegraded, and sequestered by the soil and plants, functioning similar to bioretention systems. The discharge chamber at the end of the unit collects treated flows and discharges back into the storm drain system.

Two Modular Wetland Systems would be installed on site to treat the remaining eastern portion of the site that cannot be feasibly treated via infiltration. One Modular Wetland System would treat the northeastern portion of the site for DMAs A5, A7, and A8. Another would be installed to treat DMA B1 within the southeastern portion of the project site. All runoff from these tributary areas would drain towards proposed storm drain lines that would direct low flows to their respective Modular Wetland System unit for treatment, while high flows would bypass treatment. All flows would eventually connect to the public storm drain line located along Elks Lane. Therefore, with compliance with the City's MS4 requirements, provisions of the City's LIP and Orange County DAMP, and the installation of infiltration and biotreatment BMPs, the Elan Project would have a *less-than-significant* impact on water quality standards and waste discharge requirements during project operation.

Threshold: Would the project 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 that would result in substantial erosion or siltation onsite or offsite?

Impact 4.5-E2: Development of the Elan Project could alter the existing drainage pattern of the site and potentially result in erosion and siltation.

As with the MEMU Overlay Zone expansion area, construction and operation of the Elan Project would not result in new significant impacts, substantially increase the severity of a previously analyzed impact, or require new mitigation measures related to alteration of existing drainage patterns that have not already been evaluated in the MEMU EIR.

Construction

Construction activities associated with the Elan Project would involve demolition, grading, excavation, paving, and other earth-disturbing activities, which could result in the alteration of existing drainage patterns. However, these activities would not alter the course of a stream or river in a manner that would result in substantial erosion or siltation on or off site. As described above under Impact 4.5-1 for the MEMU Overlay Zone expansion area, mitigation measure **MM-OZ 4.7-1** would require the Elan Project to implement erosion, sediment control, and waste and hazardous materials management BMPs specified in a project's Construction General Permit SWPPP to

minimize discharges from any project site and entering receiving waters. With implementation of mitigation measure **MM-OZ 4.7-1**, impacts related to erosion from short-term drainage alteration during construction would be less than significant.

Operation

As described above, any runoff not naturally infiltrated into the ground drains towards the existing public storm drain system. The western half of the Elan Project site drains in a westerly direction down South Lyon Street to a catch basin connecting to the existing storm drain line. The eastern half drains in an easterly direction into the existing storm drain line in Elks Lane. Post construction, drainage patterns would remain generally the same. The western portion of the Elan Project site would drain in a westerly direction towards South Lyon Street and into the proposed area drains along the site's western boundary. Low flows would be diverted to a detention gallery prior to infiltration via drywell, while high flows would continue towards the existing storm drain along Elks Lane. Flows from the eastern portion of the Elan Project site would drain in a southerly direction, where low flows would drain to one of two Modular Wetland Systems for treatment, while high flows would connect directly to the existing storm drain along Elks Lane.

As discussed above under Impact 4.5-1, the Elan Project would be in compliance with the City's MS4 Permit and would incorporate infiltration and biotreatment BMPs to minimize erosion and prevent stormwater pollution. In addition, as required by mitigation measure **MM-OZ 4.7-1**, the proposed project would be required to prepare a storm drain plan, comply with the 2003 DAMP and the City's corresponding LIP, and finalize the Preliminary Water Quality Management Plan (PWQMP). Implementation of these plans would reduce the volume of sediment-laden runoff discharging from the Elan Project site. Therefore, because the Elan Project would not substantially alter drainage patterns in comparison to existing conditions and would comply with existing regulations, operational impacts resulting in erosion or siltation would be *less than significant*.

Threshold: Would the project substantially alter the existing drainage pattern and potentially result in increased downstream flooding through the addition of impervious surfaces, or exceed the capacity of existing or planned stormwater drainage systems?

Impact 4.5-E3: Development of the Elan Project could alter the existing drainage pattern and potentially result in increased downstream flooding through the addition of impervious surfaces, or exceed the capacity of existing or planned stormwater drainage systems.

As with the MEMU Overlay Zone expansion area, construction and operation of the Elan Project would not result in new significant impacts, substantially increase the severity of a previously analyzed impact, or require new mitigation measures related to downstream flooding or exceeding the capacity of existing or planned stormwater drainage systems that have not already been evaluated in the MEMU EIR.

As discussed above, the Elan Project would not substantially alter existing drainage patterns on site; however, it is identified as susceptible to hydromodification. Because the Elan Project would involve development on currently vacant land, the impervious surfaces on site would significantly increase compared to the existing conditions and therefore increase the runoff volume and time of concentration. Table 4.5-2 provides a summary of the Elan Project's pre- and post-construction

impervious conditions, and Table 4.5-3 provides the project's pre- and post-construction 2-year, 24-hour storm summary.

Table 4.5-2. Elan Project Pre- and Post- Construction Pervious/Impervious Summary

Project Area	Pervious Area (ac)	Pervious Area %	Impervious Area (ac)	Impervious Area %
Pre-Construction	2.95	46 %	3.44 ac	54%
Post-Construction	0.96	15%	5.43 ac	85%

Source: Appendix E
ac = acre

Table 4.5-3. Elan Project Pre- and Post- Construction 2-Year, 24-Hour Storm Summary

Condition	Acreage	Tc	Peak Runoff	Volume
Pre-Construction	6.39	8.19 min	7.49 cfs	21,344 ft ³
Post-Construction	6.39	9.65 min	8.28 cfs	30,928 ft ³
Difference	0	+ 1.46 min	+ 0.79 cfs	+ 9,584 ft³
% Change		+ 18%	+ 11%	+ 50%

Source: Appendix E
cfs = cubic feet per second
ft³ = cubic feet
Tc = time of concentration

As depicted in the tables above, the 2-year peak runoff would increase compared to existing conditions, and the 2-year time of concentration would increase by 18 percent compared to existing conditions. In addition, the post-construction runoff volumes would increase by 50 percent, which is greater than 5 percent of the existing conditions. However, with implementation of the infiltration and biotreatment BMPs described in Impact 4.5-1, runoff volumes would be reduced to within 105 percent of the existing 2-year storm, and the hydromodification volumes would be retained on site via detention gallery and drywell infiltration to be located at the western boundary of the Elan Project site near Lyon Street.

In addition, as discussed under Threshold 4.5-3 for the MEMU Overlay Zone expansion area, because the adequacy of the existing storm drain infrastructure is presently unknown within the expansion area, it is possible that runoff generated by the Elan Project could exceed the capacity of existing and planned infrastructure and cause downstream flooding impacts. However, as required by mitigation measure **MM-OZ 4.7-2**, the Elan Project would be required to submit a Hydrology Study to the Public Works Department for review and approval. If existing infrastructure is identified as inadequate to handle runoff that may be generated by the Elan Project, then the applicant would be required to propose feasible remedies to assure adequate drainage facilities.

Therefore, with implementation of infiltration and biotreatment BMPs and mitigation measure **MM-OZ 4.7-2**, the Elan Project would not cause the rate or amount of surface runoff to result in flooding on or off site or exceed the capacity of existing or planned stormwater drainage systems. Impacts would be *less than significant*.

Mitigation Measures Applicable to the Proposed Project

Implementation of mitigation measures **MM-OZ 4.7-1** and **MM-OZ 4.7-2** would apply to projects proposed in the MEMU Overlay Zone expansion area, including the Elan Project.

MM-OZ 4.7-1 In order to comply with the 2003 DAMP, future development projects in the Overlay Zone shall prepare Storm Drain Plans, Stormwater Pollution Prevention Plans (SWPPP), and Water Quality Management Plans (WQMP) conforming to the current NPDES requirements, prepared by a Licensed Civil Engineer or Environmental Engineer, shall be submitted to the Department of Public Works for review and approval.

- (a) A SWPPP shall be prepared and updated as needed during the course of construction to satisfy the requirements of each phase of the development. The plan shall incorporate all necessary BMPs and other City requirements to eliminate polluted runoff until all construction work for the project is completed. The SWPPP shall include treatment and disposal of all dewatering operations flows, and for nuisance flows during construction.
- (b) A WQMP shall be prepared, maintained, and updated as needed to satisfy the requirements of the adopted NPDES program. The plan shall incorporate water quality measures for all improved phases of the project.
- (c) Location of the BMPs shall not be within the public right-of-way.

MM-OZ 4.7-2 Prior to issuance of grading permits, future development projects in the Overlay Zone shall submit a Hydrology and Hydraulic Study to the Public Works Department for review and approval. If existing facilities are not adequate to handle runoff that may be generated by the proposed development, then the applicant shall propose feasible remedies to assure that adequate drainage facilities will be available prior to issuance of occupancy permits. The applicant may propose storm drain improvements to be constructed in order to meet project needs. If necessary storm drain upgrades cannot be implemented prior to issuance of occupancy permits, on site detention facilities or other methods acceptable to the City shall be included with new development projects to ensure that post-construction runoff does not exceed pre-development quantities.

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4.6 Land Use and Planning

Summary of MEMU EIR Findings

The certified MEMU EIR found that implementation of the original MEMU Overlay Zone would have no impacts on the following land use and planning threshold. Implementation of the proposed project, including the Elan Project, was also found to have no impact on this threshold, and therefore it is not discussed further in this SEIR. For more details on this threshold, see Appendix A.

- The project would not conflict with any applicable habitat conservation plan or natural community conservation plan.

The certified EIR found that implementation of the original MEMU Overlay Zone would have a less-than-significant impact on the following land use and planning threshold. Implementation of the proposed project, including the Elan Project, was also found to have a less-than-significant impact on this threshold, and therefore it is not discussed further in this SEIR. For more details on this threshold, see Appendix A.

- The project would not physically divide an established community.

The certified MEMU EIR found the following land use and planning impacts to be less than significant. However, because the proposed project would extend the boundaries of the MEMU Overlay Zone into an area of the City not previously evaluated in the MEMU EIR, it was determined the proposed project could result in new or substantially more severe impacts related to these thresholds. Therefore, these thresholds are fully evaluated in this SEIR.

- The project would not introduce new land uses that would result in conflicts of use.
- The project would conflict with the Santa Ana General Plan by adopting standards and land uses not currently allowed within the proposed Overlay Zone area; however as part of the proposed project, the General Plan would be amended to incorporate the proposed land uses and development standards.

Impacts of Proposed Project

Because the proposed project involves specific changes related to land use and planning in the existing MEMU Overlay Zone, this section of the SEIR includes a separate analysis of land use and planning impacts that could occur as a result of modifications to land use districts, development standards, and a General Plan amendment in the existing MEMU Overlay Zone.

MEMU Overlay Zone Expansion Area

Threshold: Would the project introduce new land uses that would result in conflicts of use?

Impact 4.6-1: The proposed project would not result in conflicts of use.

Existing MEMU Overlay Zone Modifications

Implementation of the proposed modifications to the existing MEMU Overlay Zone would not result in new significant impacts, substantially increase the severity of a previously analyzed impact, or require new mitigation measures related to conflicts with new land uses that have not already been evaluated in the MEMU EIR. The land use conflicts analysis for the original MEMU Overlay Zone was included under Threshold 4.8-1 of the MEMU EIR and found that impacts would be to be less than significant. While the MEMU Overlay Zone has already been approved for this 200-acre area of land, certain proposed project activities—including modification to land use districts, modification to MEMU development standards, and a General Plan amendment—would occur within the existing MEMU Overlay Zone.

The modification to land use districts, specifically the change of a 6.4-acre area of land in the northern portion of the existing MEMU Overlay Zone, from Neighborhood Transitional to Village Center, would not result in a significant conflict of use with the surrounding land uses. The Village Center District is intended for shopping, dining, recreation, entertainment, and services accessed by extensively landscaped, wide sidewalks. This district would provide commercial, office, and residential uses in the same building in mid-rise buildings of between four and ten stories. Current uses in this area include commercial buildings, a religious facility, and medical office space. Adjacent land is currently a park and multi-family housing to the north, commercial properties to the east, medical facilities and social services to the south, and medical offices to the west. Building height ranges from one to three stories.

While the current surrounding land uses are less intense in design and scale than those proposed by the Village Center land use district, the provisions of the land use district would not supersede the underlying zoning districts or General Plan land use designations. All regulations, development standards, and requirements in the underlying zoning districts would continue to apply to those properties that are currently developed according to the existing standards, with the exception that certain standards contained in the MEMU Overlay Zone as to public realm improvements would be required. Therefore, modification of the land use district would not result in conflicts of use with the surrounding land uses.

The modification to MEMU development standards, specifically updating the Office and Village Center districts to permit residential development, would not result in a significant conflict with the surrounding land uses. As stated above, the provisions of the MEMU Overlay Zone would not supersede the General Plan land use designations or underlying zoning districts. Furthermore, the development standards contained in the MEMU Overlay Zone provide guidance to minimize conflicts among uses and the proposed mixed-use facilities. Lastly, the General Plan amendment to change the land use designation of several properties within the existing MEMU Overlay Zone would not result in a significant conflict with the surrounding land uses. For the 5.25-acre cluster of properties in the northwest corner of the existing MEMU Overlay Zone developed with multi-family residences, the General Plan land use designation change from District Center (DC) to Urban Neighborhood (UN) would better reflect the existing and planned uses with the surrounding uses,

particularly the single-family residences to the north that are also zoned for Single-Family Residence (R-1). The DC land use designation is intended for a mixture of high-rise office, commercial, and residential uses, whereas the UN land use designation allows for a mix of residential uses and housing types, such as mid- to low-rise multiple family, townhouses, and single-family dwellings. Amending the General Plan's land use designation from DC to UN would better align with the current and planned uses within and surrounding this area.

For the other two areas in the existing MEMU Overlay Zone that would change land use designations from PAO to DC, this proposed action would not result in conflicts of land uses. All adjacent properties (excluding Interstate 5) would be designated for DC. The General Plan amendment for these two areas would better align with the current land use designation for the surrounding area by making it uniformly DC. In addition, the General Plan amendment would not be in conflict with the uses of the surrounding area, which are zoned primarily for Professional (P) and General Commercial (C-2) and Arterial Commercial (C-5).

As the existing MEMU Overlay Zone modifications propose uses consistent with the surrounding area's existing and planned land uses, and because development standards would be implemented into the design of individual projects, land use impacts on the adjacent communities would be *less than significant*.

MEMU Overlay Expansion Area

Expansion of the MEMU Overlay Zone would allow for the introduction of residential, commercial, and entertainment uses in an area developed with primarily commercial uses; some residential uses; and vacant, undeveloped, or abandoned land. The transition of the area to a mixed-use center would occur over time as individual properties are developed under the MEMU Overlay Zone standards and guidelines.

As discussed in the MEMU EIR, land use incompatibility can occur where differences exist among uses that are near each other. These incompatibilities may result from differences in the physical scale of development, noise levels, traffic levels, hours of operation, and other factors. The potential for conflicts exists in particular where mixed-use development occurs. Expansion of the MEMU Overlay Zone would add new mixed land use designations to an area that is currently designated by the Santa Ana General Plan primarily as General Commercial (GC) with some Medium Density Residential (MR-15), UN, and Low Density Residential (LR-7) uses. Mixed-use development would be permissible within the proposed Neighborhood Transitional and Active Urban land use districts, such that residential uses could be placed in proximity to commercial, office, and entertainment uses, including those in a highly urbanized environment.

Development standards for each land use district contained in the MEMU Overlay Zone text provide guidance that would minimize conflicts among uses in mixed-use facilities. Of the four MEMU Overlay Zone land use districts, the Neighborhood Transitional and Active Urban land use districts would be applied in the MEMU Overlay Zone expansion area. The Neighborhood Transitional district would be applied to all of the land within the expanded MEMU Overlay Zone that is west of South Lyon Street, and the Active Urban District would be applied to all the land east of South Lyon Street. The objectives of, and principles to minimize conflicts for, these land use districts are as follows.

MEMU Overlay Zone Section 1.2 Objectives

- Achieve the harmonious integration of new mixed-use development within the existing fabric of themed-rise and high-rise environment

MEMU Overlay Zone Section 4.2 Development Intensity (FAR)

- The overall scale and massing of development within the Overlay Zone should transition from the existing low-scale intensity of the Neighborhood Transitional district to mid-rise development in the Village Center and high-rise in the Active Urban district adjacent to the Santa Ana Freeway.

Neighborhood Transitional

- New development in the Neighborhood Transitional district shall be of a low scale, and should serve as a visual transition between the Village Center and adjacent residential areas to the north.
- New develop shall be compatible in height, scale, and mass with adjacent residential development to the north, with heights ranging between two and three stories.

Active Urban

- New development shall relate in similarity of scale, height, and configuration with adjacent buildings.
- New development shall be designed and oriented to promote intensive public activity at the ground level that integrates and establishes a cohesive transition with adjacent districts.

Project-specific features would depend on the types of uses proposed and the specific design of individual projects. Examples of design elements that could be used to reduce conflicts include screening of mechanical equipment and locating such uses away from residential components; setting specific locations and hours of operation for service deliveries; and providing separate vehicular entrances for residential and commercial uses. Application of development standards therefore ensures that design of mixed-use development does not result in significant land use incompatibilities.

In many locations, the addition of uses encouraged by the MEMU Overlay Zone land use district would be similar to existing uses. For instance, one area within the MEMU Overlay Zone expansion area is currently designated by the Santa Ana General Plan as UN, which allows for primarily residential areas and neighborhood serving retail and service. This area would be overlaid with the Neighborhood Transitional land use district, which allows for residential, live/work, and office use development. Given the similarity of allowed uses, additional development that is the same as or similar to existing development could occur in this area and these uses would be compatible.

Land use changes are further discussed below for each land use district proposed for the expansion area. Land use changes are also summarized in Table 4.6-1 below.

Table 4.6-1. Summary of Key Land Use Changes by District in Overlay Zone Expansion Area

Land Use District	Existing Use	Future Permitted Uses	Existing Building Heights	Future Allowable Building Heights	Key District Features
Neighborhood Transitional	Hotel	Residential	One to ten stories	Maximum of four stories ^a	Transition neighborhood
	Retail/commercial	Live/work			
	Multi-family residential	Office			
	Single-family residential				
Active Urban ^b	Auto-related retail	Commercial Office Residential Entertainment	One and two stories	High Rise	Highly urban environment
	Religious facilities				
	Retail/commercial				
	Multi-family residential				
	Single-family residential				

^a With implementation of the proposed project, this development standard would be revised from a maximum of three stories to a maximum of four stories.

^b This district would also overlay the Elan Project site, which is discussed in detail below in Impact 4.6-E1.

Neighborhood Transitional: Existing development in the Neighborhood Transitional land use district primarily consists of hotels, motels, lodgings, and food-related retail/commercial with some multi-family residential. Future development projects that could be permitted under the proposed project within this district would be limited to residential, live/work, or office uses, and building heights would be limited to four stories in height.¹¹ The Neighborhood Transitional district would remain as a low-intensity neighborhood as it is intended in the General Plan. The Neighborhood Transitional district development will be designed to provide an appropriate interface with the adjacent single-family residential area to the north by incorporating high levels of landscaping and design features.

Active Urban: Existing development in the Active Urban land use district includes one- and two-story residential and retail use. Future development projects that could be permitted within this district under the proposed project include commercial, office, residential, and entertainment uses. Pursuant to the General Plan, the Active Urban district is intended as the location for well-designed high-rise mixed-use developments in a highly urbanized environment. Developments would be designed to showcase an amenity-enhanced environment that provides numerous open space opportunities for the enjoyment of residents, employees, and visitors, and to promote pedestrian connections between this district and open space areas, such as Prentice Park and the Santa Ana Zoo located east of the MEMU Overlay Zone expansion area.

Provided that the above objectives and development standards are implemented into the design of individual projects, land use impacts on adjacent communities would be less than significant. The land use character of the area would change from an underdeveloped area of residential and commercial uses to a mixed-use center with development divided into a series of land use districts and scaled in a variety of intensities.

¹¹ With implementation of the proposed project, this development standard would be revised from a maximum of three stories to a maximum of four stories

The General Plan amendment to change the land use designation for all land within the MEMU Overlay Zone expansion area—excluding a 2.0-acre property on the south side of East First Street where a mid-rise, mixed-use building would retain its UN land use designation—would not result in a significant conflict with the surrounding land uses. The General Plan land use designations for the properties located in the expansion area would be changed from primarily GC with some areas of UN south of East First Street as well as LR-7 north of East First Street, and MR-15 west of South Elk Lane. The MEMU Overlay Zone expansion area would change the land use designations to UN and DC, the latter being more appropriate for properties located away from existing single-family land uses and closer to I-5. The adjacent land is designated as GC and LR7 to the north, Open Space (O) to the east, Institutional (INS) to the south, and GC and UN to the west. These land uses allow for governmental facilities and public institutions, offices, retail and service establishments, recreational and entertainment uses, schools, single-family homes, and mid- to low-rise multiple-family dwellings. As discussed above, the DC land use designation is intended for a mixture of high-rise office, commercial, and residential uses; and the UN land use designation encourages a mix of residential uses and housing types, such as mid- to low-rise multiple-family, townhouses, and single-family dwellings. Amending the General Plan’s land use designation from the current mix to DC and UN would not encourage or facilitate unpermitted uses or conflicts of use based on the current uses within and surrounding the land.

In addition, the General Plan Amendment would not be in conflict with zoning designations for the surrounding area, which include Transit Zoning Code (SD-84) to the west, Light Industrial (M-1) and P to the north; O and the I-5 Freeway to the east; and Suburban Apartment (R-4), O, and M-1 to the south. The General Plan amendment would facilitate mixed-use development, and increase the development intensity, within the expanded area. The proposed project objective to achieve the harmonious integration of new mixed-use development within the existing fabric of the mid- and high-rise office environment would help ensure that surrounding zoning designations would not result in a land use conflict as a result of the General Plan amendment.

Lastly, the three properties just north of the MEMU Overlay Zone expansion area that would change land use designations from GC to LR-7 would not result in a conflict of use. These properties include two residences at the end of Linwood Avenue and one outside the expansion area’s northern boundary at Wright Street. The properties are zoned for R-2. These three properties would not fall within the MEMU Overlay Zone and therefore would not be designated with a MEMU Overlay Zone land use district. Adjacent land is designated as LR-7 to the north, east, and west, and as GC to the south. As the surrounding land is designated as and zoned for low-intensity residential use, the General Plan amendment to change these properties to LR-7 would not conflict with the current or planned surrounding land uses.

Because expansion of the MEMU Overlay Zone would not adversely affect existing land uses, impacts on established communities within and adjacent to the MEMU Overlay Zone expansion area would be ***less than significant***.

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

Impact 4.6-2: The proposed project would not conflict with the Santa Ana General Plan or Zoning Code by modifying MEMU Overlay Zone land use districts, development standards, and land uses.

Existing MEMU Overlay Zone Modifications

As stated above, in the MEMU EIR, the City prepared analysis for Threshold 4.8-1 of the potential impacts of the originally proposed MEMU Overlay Zone. Impacts were determined to be less than significant. While the MEMU Overlay Zone has already been approved for this 200-acre area of land, certain project activities—including modifying land use districts and MEMU development standards, and a General Plan amendment—would occur within the existing MEMU Overlay Zone.

The modification of land use districts, specifically the change of a 6.4-acre area of land in the northern portion of the existing MEMU Overlay Zone from Neighborhood Transitional to Village Center, would not result in a conflict with any applicable land use regulations. The provisions of the existing Overlay Zone would not supersede the General Plan land use designations or underlying zoning districts. All regulations, development standards, and requirements in the underlying zoning districts would continue to apply to those properties that are currently developed according to the existing standards, with the exception that certain standards contained in the Overlay Zone as to public realm improvements would be required. Properties within the existing Overlay Zone may choose to develop to the standards contained within the Overlay Zone as an alternative to developing to the standards of the underlying zoning districts. Therefore, adoption of the proposed Overlay Zone would be complementary to, and compatible with the existing Zoning Code.

The modification of MEMU development standards, specifically updating the Office and Village Center districts to permit residential development, would not result in a conflict with any applicable land use regulations. As stated above, the provisions of the existing Overlay Zone would not supersede the General Plan land use designations or underlying zoning districts. Furthermore, the proposal to update the Office and Village Center Districts would be included alongside a range of other development standard modifications (see Table 2-1). The MEMU Overlay Zone planning document would be updated with implementation of the proposed project to accommodate these development standard modifications. The modifications would align with the document's objectives to achieve mixed-use development within the existing environment. As these proposed changes to MEMU development standards would only occur with approval of updates to the MEMU Overlay Zone, this project element would not result in any conflicts with the MEMU Overlay Zone planning document.

The General Plan amendment to change the land use designation of several properties within the existing MEMU Overlay Zone would not result in a conflict with any applicable land use regulations. The Land Use Element Policy Plan, which includes the Land Use Map and Development Intensity Standards, would be amended to change their current land use designations in these designated areas from DC to UN and PAO to DC. As these proposed changes to land use designations would only occur with approval of a General Plan amendment, this project element would not result in any conflicts with the General Plan. The underlying zoning of the surrounding area is P, C-2, C-5, and

Specific Development 54 (SD-54). Land zoned for P permits uses such as offices, banks, art galleries, museums, restaurants and more. Land zoned for SD-54 permits uses including office and commercial/retail. Land zoned for C-2 and C-5 allows for office, retail, parking lot, government buildings, restaurants, schools, two-family dwellings, and more. The DC designation would allow for a mixture of high-rise office, commercial, and residential uses that provide shopping, business, cultural, education, recreation, entertainment, and housing opportunities. The UN designation applies to primarily residential areas with pedestrian oriented commercial uses, schools, and small parks. The uses encouraged by the DC and UN designations would be similar to those permitted in the zoning of the surrounding area. Therefore, the proposed General Plan amendment would not result in any conflicts with the Zoning Code.

Lastly, in terms of compatibility with the MEMU Overlay Zone planning document, the General Plan land use designations supersede the MEMU Overlay Zone planning document. All regulations, development standards, and requirements in the underlying land use designations, in addition to the zoning districts, would continue to apply to those properties that are currently developed according to the existing standards, with the exception that certain standards contained in the MEMU Overlay Zone as to public realm improvements would be required. Therefore, the proposed General Plan amendment would not result in any conflicts with the MEMU Overlay Zone planning document.

As the project elements proposed within the existing MEMU Overlay Zone would be consistent with the policies contained in the applicable plans described above for the City of Santa Ana, and because it is anticipated that the City's General Plan and Metro East Mixed-Use Overlay Zone will be amended to incorporate the expanded Overlay Zone, any conflict with applicable land use plans, policies, or regulations would be *less than significant*.

MEMU Overlay Expansion Area

The City's General Plan Land Use Element designates the MEMU Overlay Zone expansion area within the GC, UN, LR-7, and MR-15 land use categories (see Figure 2-3). Expansion of the MEMU Overlay Zone would conflict with the currently adopted General Plan by permitting additional uses beyond what is described as a typical use and development intensity (measured either by FAR or dwelling units per acre [du/ac]) for these land use categories. For instance, an area in the northeastern portion of the MEMU Overlay Zone expansion area, bounded to the south by East First Street and to the west by South Lyon Street, currently consists of one- to two-story multi-family residential buildings. This area's land use designation of GC allows typical uses of business and professional offices; retail and service establishments; recreational, cultural, and entertainment uses; and vocational schools. With implementation of the proposed project, the MEMU Overlay Zone would apply to this area the Active Urban land use district, which encourages uses of high-rise mixed-use developments, offices, hotels, and entertainment opportunities that are more intensive in scale and design. Encouraging the additional uses of building, such as a high-rise hotel, would conflict with the currently adopted General Plan. However, the General Plan would be amended as part of the approval process of the MEMU Overlay Zone expansion to include the new Overlay Zone. Therefore, impacts as a result of expansion of the MEMU Overlay Zone would be less than significant.

Under the City's existing zoning, there are six land use zones within the MEMU Overlay Zone expansion area. The provisions of the MEMU Overlay Zone would apply to all properties within the expanded area, but would not supersede the underlying zoning districts. All regulations, development standards, and requirements in the underlying zoning districts would continue to

apply to those properties that are currently developed according to the existing standards, with the exception that certain standards contained in the MEMU Overlay Zone as to public realm improvements would be required. Properties within the MEMU Overlay Zone expansion area may choose to develop to the standards contained within the MEMU Overlay Zone as an alternative to developing to the standards of the underlying zoning districts. Therefore, expansion of the MEMU Overlay Zone would not conflict with the existing Zoning Code.

As required by Section 15125(d) of the State CEQA Guidelines, the land use section of the an EIR must discuss any inconsistencies between the proposed project and applicable regional and local plan policies that pertain to land use. The regional plans relevant to expansion of the MEMU Overlay Zone, as listed in Section 3.6, is the Regional Comprehensive Plan (RCP) prepared by the Southern California Association of Governments (SCAG). The local plan relevant to expansion of the MEMU Overlay Zone and for which a consistency analysis is also provided includes the City of Santa Ana General Plan. Consistency of expansion of the MEMU Overlay Zone with applicable regional and local plans is provided in the following sections below.

Consistency with Applicable Regional Plan Policies

Southern California Association of Governments' Regional Transportation Plan

As mentioned in Section 3.6, since certification of the MEMU EIR, the Southern California Association of Governments' (SCAG's) 2004 *Regional Transportation Plan (RTP) – Adopted 2004 RTP Goals* has been updated with the 2016 *RTP/Sustainable Communities Strategy (RTP/SCS)*. The MEMU EIR consistency analysis determined that the originally proposed MEMU Overlay Zone was consistent with the RTP. The updated RTP/SCS poses a similarly applicable goal to the proposed project as the original RTP did for the originally proposed MEMU Overlay Zone. The 2004 goal to “[e]ncourage Land-use and growth patterns that complement our transportation investments,” is adequately approximated by the 2016 goal to “[e]ncourage land use and growth patterns that facilitate transit and active transportation” (SCAG 2004, 2016). Due to the similarity in the stated goal of the original RTP and the updated RTP/SCS, as well as the similarity in project activities analyzed in the MEMU EIR and the proposed project, an updated goal consistency analysis is not warranted.

Southern California Association of Governments' Compass Growth Vision

As mentioned in Section 3.6, the MEMU EIR also references the *Compass Growth Vision* document, which is still up-to-date and applicable to the MEMU Overlay Zone expansion area. The MEMU EIR consistency analysis determined that the originally proposed MEMU Overlay Zone was consistent with the *Compass Growth Vision*. Due to the similarity in project activities and objectives analyzed in the MEMU EIR and those of the proposed project, an updated goal consistency analysis is not warranted.

Southern California Association of Governments' Regional Comprehensive Plan

The SCAG RCP's housing and growth policies applicable to the proposed project are outlined in Table 4.6-2, which includes a consistency analysis of each policy is also provided.

Table 4.6-2. SCAG Regional Comprehensive Plan Policies

SCAG RCP Policies	Project Consistency
<i>Land Use and Housing</i>	
Focusing growth in existing and emerging centers and along major transportation corridors.	Growth and development under the proposed project would include infill development and redevelopment. The project area is also strategically located near the intersection of two major freeways in the City.
Creating significant areas of mixed-use development and walkable, “people-scaled” communities.	The proposed project involves expansion of a mixed-use overlay zone that would create a highly-integrated pedestrian system promoting connectivity between the residential areas and public recreation amenities to the north and east of the MEMU Overlay Zone expansion area.
Providing new housing opportunities, with building types and locations that respond to the region’s changing demographics.	The proposed project would provide for a mix of housing in order to encourage a continuum of living and a variety of household types.
Injecting new life into under-used areas by creating vibrant new business districts, redeveloping old buildings and building new businesses and housing on vacant lots.	Growth and development under the proposed project would include infill development and redevelopment with both commercial and residential use as well as a rich supply of public amenities. The expanded MEMU Overlay Zone would be ideally located for increased growth by its proximity to major transit systems and its adjacency to existing residential communities and an established open space and recreational network.
Source: SCAG 2008	

Consistency with Applicable Local General Plan Policies

Santa Ana General Plan

The MEMU EIR includes a consistency analysis with the goals of the Land Use Element and the Urban Design Element. The stated land use policies encourage projects that are intensive in scale, provide a mix of uses, are compatible and harmonious with surrounding development, and offer an array of pedestrian amenities. The stated design policies address the image of the community and encourage measures to enhance public/private interaction, the pedestrian experience, district character, and compatibility between land uses. The Land Use Element, last amended in 2014, has the same goals as those in the MEMU EIR. The Urban Design Element was first adopted in 1998 and has not been updated since certification of the MEMU EIR. As such, a replicated consistency analysis between the proposed project and the General Plan is not warranted. The original analysis presented in the MEMU EIR serves as analysis for the expanded Overlay Zone given the high degree of similarity in project activities and objectives.

The three properties just north of the MEMU Overlay Zone expansion area that would correct their land use designation from GC to LR-7 would not be in conflict with the General Plan. These properties are currently developed with single-family residences and zoned R-2. Adjacent land is

designated as LR-7 to the north, east, and west. Therefore, the proposed General Plan Amendment is consistent with the existing land uses and the zoning for the site.

Metro East Mixed-Use Overlay Zone

Expansion of the MEMU Overlay Zone would also be consistent with the MEMU Overlay Zone's development capacity. While expansion of the MEMU Overlay Zone boundaries could produce up to 1,888 residential units, 3,776 residents, and a maximum of approximately 2,835,000 square feet of building area, the original development capacity would not be exceeded.

Additionally, expansion of the MEMU Overlay Zone would be consistent with the MEMU Overlay Zone's development standards. The development standards would be updated to allow residential uses in all of the MEMU Overlay Zone land use districts, to facilitate the expansion of the OZ-1 designation, and to promote infill development opportunities in the MEMU Overlay Zone expansion area. Given that the update of the MEMU Overlay Zone document would be approved concurrently with the proposed project, there would be no conflict with this local planning document.

Overall Consistency

As expansion of the MEMU Overlay Zone would be consistent with the policies contained in the applicable plans described above for both SCAG and the City of Santa Ana, and as it is anticipated that the City's General Plan, Zoning Code, and MEMU Overlay Zone would be amended to incorporate the expansion area, conflict with these applicable documents would be *less than significant*.

Elan Project

Threshold: Would the project introduce new land uses that would result in conflicts of use?

Impact 4.6-E1: Implementation of the Elan Project would not result in conflicts of use.

Pursuant to the objectives of the MEMU Overlay Zone, the Active Urban District is the anticipated location for well-designed high-rise mixed-use developments in a highly urbanized environment. Land uses permitted within the Active Urban District include major office, residential, commercial, and entertainment uses intensive in scale and design. Developments in this district may combine office, commercial, and residential uses within one vertical mixed-use building with commercial on the ground floor and office or residential on the upper floors or within a mix of uses in freestanding buildings on the same site.

The Elan Project would be consistent with the objectives of the MEMU Overlay Zone for the Active Urban District. It includes two residential complexes—a seven-story building and a five-story building with commercial uses on the ground floor and two levels of underground parking. The surrounding area is a mix of one- to two-story commercial and residential buildings as well as the western border of the Santa Ana Zoo and Prentice Park. In order to soften the effects of the project's intensity on adjacent low-rise properties, the following standards are in place for the Active Urban District to integrate adjacent properties through both architectural design and pedestrian amenities:

MEMU Overlay Zone Section 4.2 Development Intensity

- New development shall be designed and oriented to promote intensive public activity at the ground level that integrates and establishes a cohesive transition with adjacent Districts.

MEMU Overlay Zone Section 4.4 Permitted Street Level Building Frontages

- Appropriate building frontages reinforce a continuous urban street wall defining the street edge and encouraging public-private interaction which results in active pedestrian urban spaces. All new development will be required to include one of the street frontage layouts specified by district below:
 - The Active Urban District. Fore court, shop front, gallery, and arcade building frontages are permitted.

MEMU Overlay Zone Section 4.5 Publicly Accessible Open Space

- In order to provide relief from the intensity of development within the Overlay Zone, it is necessary to provide a variety of open space opportunities. To achieve well-designed and highly amenitized open space areas that are accessible to the public, new development within the Overlay Zone will be required to include an open space component that is accessible to the public through the main street-facing entry of the project. Publicly accessible open space areas shall be designed to optimize linkages and connections with adjacent properties within the District. Further open space areas shall encourage active use and pedestrian activity between the public and the private realm.
 - Public open space areas shall be visible and accessible from the public rights-of-way to engage the interest of pedestrians and encourage public use.

The Elan Project would be consistent with the standards listed above for the Active Urban District. The development would include commercial uses at the ground level oriented to the street in order to serve the onsite residents and surrounding businesses. The ground floor also features a forecourt to define the street edge and encourage public/private interaction. The Elan Project would incorporate a large open central courtyard access from both Elk Lane and South Lyon Street that would be both visible and accessible to the public and encourage public use. The open space area would also break up the massing of the individual buildings on site in order to create pedestrian scale.

As the Elan Project proposes uses consistent with the MEMU Overlay Zone and incorporates features to soften the effects of mid-rise residential development on the existing community, and as no business or residential community would be displaced by the proposed project, land use conflicts would be ***less than significant***.

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

Impact 4.6-E2: Implementation of the Elan Project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

The local plan most specific to the Elan Project would be the MEMU Overlay Zone. The Elan project would be located within the Active Urban land use district of the MEMU Overlay Zone. Therefore, the project must meet the development standards of the Active Urban District, as summarized in Table 4.6-3 and for which a consistency analysis is provided below.

Section 4.2(a)-(d) for the Active Urban District of the MEMU Overlay Zone sets forth a minimum height standard of three stories, and general scale and massing standards listed below:

- a. New development in the Active Urban District is the most intensive in scale and design within the Urban Village, creating a highly urbanized environment.
- b. New development shall relate in similarity of scale, height, and configuration with adjacent buildings.
- c. New development shall be designed and oriented to promote intensive public activity at the ground level that integrates and establishes a cohesive transition with adjacent Districts.
- d. Larger buildings shall be broken down in scale through changes in massing, changes in plane and profile, façade subdivision, as well as other architectural means to ensure that the building is well proportioned and creates a satisfactory composition.

Table 4.6-3. Compatibility of Elan Project with the Active Urban District Development Standards

Category	Current Development Standard	Changes with Proposed Development Standard ^a	Elan Project Compatibility
4.1 Land Use Categories			
Live-Work	Yes	--	Included in proposed project.
Multiple-Family Residential	Yes	--	Included in proposed project.
Art Galleries and studios	Yes	--	Included in proposed project.
Eating establishments	Yes	--	Potential for commercial space.
Bakeries	Yes	--	Potential for commercial space.
Libraries, bookstores	Yes	--	Potential for commercial space.
Medical offices	Yes	--	None proposed.

Category	Current Development Standard	Changes with Proposed Development Standard ^a	Elan Project Compatibility
Professional, administrative and business offices	Yes	--	None proposed.
Child care facilities	Yes	--	None proposed.
Churches	Yes	Whereas church uses are not currently identified as an allowable non-residential use in any district, they would be allowable, subject to a conditional Use Permit.	None proposed.
Gymnasiums and health clubs	Yes	--	Included in proposed project.
Hotels	Yes	--	None proposed.
Indoor/outdoor entertainment	Yes	--	Included in proposed project.
Retail, personal and convenience service stores	Yes	--	Included in proposed project.
Schools	Yes	--	None proposed.
Tattoo Parlors	Yes	Whereas tattoo uses are not currently identified as an allowable non-residential use in any district, they would be allowable.	None proposed.
Temporary outdoor activities	Yes	--	Included in proposed project.
Theaters and cinema	Yes	--	Included in proposed project.
Drive through establishments	No	--	None proposed.
4.2 Maximum Building Height	Minimum 3 stories	--	5 and 7 stories
4.3 Minimum Development Site Area	1 acre	--	6.4 acres
4.4 Permitted Street Level Building Frontages			
Front Porch	No	--	None proposed
Stoop	No	--	None proposed
Fore Court	Yes	--	Proposed
Shop Front	Yes	--	Proposed
Gallery	Yes	--	None proposed
Arcade	Yes	--	None proposed

Category	Current Development Standard	Changes with Proposed Development Standard ^a	Elan Project Compatibility
4.5 Publicly Accessible Open Space	15% of Total Lot Area	--	41,734 square feet (sf) required and 57,062 sf provided by project.
4.6 Private/Common Open Space	100 sf per unit	90 sf per unit	54,270 sf of publicly accessible open space area required and 122,000 sf provided by project.
4.7 Building Setbacks			
Front	0–20 ft	--	0–35 ft
Side 1	0–10 ft	--	0–10 ft
Side 2	0–10 ft	--	0–12 ft
Rear	25 ft		25 ft
4.8 Parking^b	Standalone non-residential: Per Division 3 of Article 15 of the Municipal Code	--	
	Standalone Residential: Per Division 3 of the Article 15 of the Municipal Code	--	
	Mixed-use with <10% of the gross floor area (gfa) devoted to commercial: Minimum of 2.0 spaces per unit, inclusive of guest parking and any non-residential uses.	1.8 spaces per unit	1,086 spaces required per 1.8 spaces per unit and 1,209 spaces provided by the project per 2.0 spaces per unit
	Mixed-use with >10% of the gfa devoted to commercial: No less than 2.25 spaces per unit inclusive of guest parking and any non-residential uses.	--	

^a As part of the proposed project, development standards would be modified. Where applicable to the Urban Active District, these modifications have been noted. Project compatibility is with regard to the proposed development standards, not the current standards.

^b In addition to the parking requirements above, “new developments in the MEMU Overlay Zone shall provide parking such that 1) Guest parking at a rate of 10% of the total required parking spaces shall be set aside and assigned for the exclusive use of guests in and development in the Overlay Zone, and 2) all residential units shall be provided a minimum of one assigned space per unit. Any development proposal that devotes 10% or more of the development’s gfs to a non-residential use shall be required to provide a parking study to establish an adequate parking requirement for the mixture of uses.”

The Elan Project would be intensive in scale and architectural design, consistent with Section 4.2 (a) of the MEMU Overlay Zone. The Elan Project buildings would be five and seven stories high, which would not relate in scale and height to the adjacent retail center and apartment units to the north, the Santa Ana Zoo and Prentice Park to the east, the multi-family housing and hotel to the south, or

the mix of multi-family housing, single-family housing, and commercial properties to the west. All surrounding buildings are one to two-stories high. However, the Elan Project would be consistent with the objectives of the Urban Active District to have a minimum building height of three stories. Also, the Elan Project is the first to be submitted within the MEMU Overlay Zone expansion area. It is anticipated that future adjacent projects, particularly in the parcels to the north with commercial uses, would be similar in scale and design as the Elan Project. Therefore, the Elan Project would be consistent with Section 4.2(b) of the MEMU Overlay Zone.

As described previously, the Elan Project would be designed with commercial and extensive open space and landscaping at the ground level to encourage public activity and public/private interaction. Therefore, the Elan Project would be consistent with Section 4.2(c) of the MEMU Overlay Zone.

Each building is separated by a large central courtyard. The ground floor of each is distinguished from the upper levels by use and design, featuring commercial storefronts and forecourts. The proposed project is therefore consistent with Section 4.2(d).

MEMU Overlay Zone Section 4.5 Publicly Accessible Open Space

The Elan Project site plan requires approximately 41,734 square feet (sf) of publicly accessible open space area. The site plan specifies a total area of 57,062 sf of public open space, provided primarily by the central courtyard, visible and accessible from Lyon Street and Elk Street. Therefore, the Elan Project would be consistent with this development standard.

MEMU Overlay Zone Section 4.6 Private/Common Open Space

The Elan Project would construct 603 residential units in two buildings, thereby necessitating 54,270 sf of private and common open space. The project would provide a total of 122,000 sf of private open space through residential amenities, view decks, courtyards, and private decks. Amenities include a pet spa, yoga center, game studio, bike store, fitness center, study, club, resident lounge, screening room, artist's gallery, and club house—a total of 12,391 sf of common open space. Therefore, the Elan Project would exceed the private open space requirements.

MEMU Overlay Zone Section 4.6 Building Setbacks

Section 4.7 of the MEMU Overlay Zone contains the following setback standards for the Active Urban District. Requirements applicable to the Elan Project are also set forth as follows:

1. In order to encourage flexibility and authenticity in terms of design and building-street interaction, there is no minimum setback requirement within the Overlay Zone, with the exception that all structures shall maintain the maximum rear setback specified if the lot abutting on the rear property line is a parcel containing residential development.
2. Setbacks abutting public rights-of-way may be further recessed from the maximum setback specified for the purposes of a public open space, dining/gathering or special entry area.
3. Setbacks abutting public rights-of-way shall be landscaped with lawn, trees, shrubs, or other plants and/or decorated as hard surface expansion of the sidewalk. A combination of landscape and hardscape materials shall be provided as follows:

- a. Hardscape paving may include brick, stone, interlocking concrete pavers, textured concrete, and/or impressed patterned concrete. Hardscape elements shall also be provided when setback area is being used to satisfy publicly accessible open space areas. These elements may include, but are not limited to, seating areas, potent plant materials, water features, and public art installations.
- b. The balance of the setback areas shall be landscaped with turf, shrubs, or groundcover, and trees. All plant materials shall be in proportion to the height and mass of the building, and shall be permanently maintained.

Upper level setbacks along public right of ways on the Neighborhood Transitional District, the Village Center District, and the Active Urban District, shall be provided as a means to facilitate building articulation and private/common open space terraces or roof decks. The minimum upper level setback area shall be 10 feet wide (parallel to the building face) by 6 feet deep.

The Elan Project would be landscaped with a mixture of lawn, trees, shrubs, and plants and hardscaped with seating areas, water features, and public art installations. Upper level setbacks, mainly consisting of private and common decks, would be at least 10 feet wide by 6 feet deep. Therefore, the Elan Project would meet the building setback requirements of the MEMU Overlay Zone.

MEMU Overlay Zone Section 4.8 Parking and Access

The Elan Project would provide a total of 1,209 parking spaces, consisting of 1,047 secured residential parking stalls, 109 guest parking stalls, and 52 open retail parking stalls. The requirements of the MEMU Overlay Zone for the Active Urban District currently require 2.0 parking spaces per residential unit; however, the City is considering lowering this to 1.8 parking spaces per residential unit with the proposed modification to MEMU development standards incorporated into the proposed project. At the 2.0 parking ratio, the Elan Project would exceed the required number of parking spaces (1,206) by three spaces. At the 1.8 parking ratio, the Elan Project would exceed the required number of spaces (1,086) by 123 spaces. Therefore, the Elan Project would meet the parking requirement of the MEMU Overlay Zone.

In addition, Section 4.8 of the MEMU Overlay Zone contains additional parking requirements as follows:

1. Parking facilities (surface or structures) shall be located below grade, behind buildings, and/or screened from the main right of way, and all active public areas, except for areas designed for and devoted to vehicular access, drop off, or valet parking. Those portions of parking structures that are facing the main public right of way shall include commercial spaces along the right of way at ground floor level.
2. Parking space specifically designated for non-residential and residential uses shall be clearly marked by the use of posting, pavement markings, and/or physical separation. Parking design shall incorporate separate entrances and exits for the residents of the property.
3. Driveways shall be a maximum of 24 feet wide, in order to enhance the pedestrian experience. A maximum of one curb cut shall be permitted for each parcel with up to 150 feet of street frontage. Development sites exceeding 150 feet of street frontage shall be permitted a maximum of two curb cuts. Three curb cuts shall be permitted only if a separate residential entrance is required.

The Elan Project would meet the criteria listed above. For criteria 1, parking would be located below grade in a two-story underground structure. For criteria 2, residential access to the parking structure would be provided at two locations along Elk Lane and two locations along Lyon Street, one of which would not allow commercial or guest entry. Regarding criteria 3, driveways would be no wider than 24 feet. The Elan Project exceeds 150 feet of street frontage and provides a separate residential entrance; thus, it is permitted three curb cuts. Of the four entry ways to the underground parking structure, three would include curb cuts.

Overall Consistency

Given the Elan Project's consistency with the requirements of the MEMU Overlay Zone, the project would be consistent with the applicable plans governing development of the project site, and this impact would be *less than significant*.

Mitigation Measures Applicable to the Proposed Project

No mitigation measures are required.

4.7 Noise

Summary of MEMU EIR Findings

The MEMU EIR found the project would have no impacts on the following noise thresholds. Implementation of the proposed project, including the Elan Project, was also found to have no impact on these thresholds and therefore they are not discussed further in this SEIR. For more details on these thresholds, see Appendix A.

- The project is not anticipated to expose people residing or working in the project site to excessive airport-related noise. The project is not located within an airport land use plan or within 2 miles of a public airport or public use airstrip. The nearest public airport to the project site is the John Wayne Airport, approximately 4 miles to the southwest. Further, the proposed project is over 7,000 feet from the 60 CNEL noise contour for John Wayne Airport.
- The project is not anticipated to expose people residing or working in the project site to excessive airstrip-related noise. The project is not located within the vicinity of a private airstrip.

The MEMU EIR found the following noise and vibration impacts to be less than significant. Implementation of the proposed project, including the Elan Project, was found not to result in related new or substantially more severe impacts related to these issues and therefore they are not discussed further in this SEIR. For more details on these thresholds, see Appendix A.

- Operation of the proposed project would not generate and expose sensitive receptors on- or off site to excessive groundborne vibration or groundborne noise levels. This impact would be less than significant.
- Operation of the proposed project would not result in temporary or periodic increases in ambient noise levels. There would not be a substantial temporary or periodic increase, and therefore this impact would be less than significant.

The MEMU EIR found the following noise and vibration impacts to be less than significant after implementation of mitigation. Because the proposed project, including the Elan Project, would extend the boundaries of the MEMU Overlay Zone into an area of the City not previously evaluated in the MEMU EIR, it was determined the proposed project could result in new or substantially more severe impacts related to these thresholds. Therefore, these thresholds are fully evaluated in this SEIR.

- Construction activities associated with the proposed project would generate noise levels that exceed the noise standards established by the City of Santa Ana Municipal Code. This is considered a potentially significant impact. Implementation of mitigation measures **MM-OZ 4.9-1** through **MM-OZ 4.9-4** would reduce this impact, but noise levels could still be substantial. However, the project's construction noise impacts would be temporary and would be consistent with the exemption for construction noise that exists in the Municipal Code.
- Operation of the proposed project could expose noise-sensitive land uses to noise levels that exceed the standards established by the City of Santa Ana General Plan. This is considered a

potentially significant impact. Implementation of mitigation measures **MM-OZ 4.9-5** through **MM-OZ 4.9-7** would reduce this impact to a less than significant level.

- Construction activities associated with the proposed project would result in a substantial temporary or periodic increase in ambient noise levels. However, the project's construction noise impacts would be temporary, would not occur during recognized sleep hours, and would be consistent with the exemption for construction noise that exists in the Municipal Code with implementation of mitigation measures **MM-OZ 4.9-1** through **MM-OZ 4.9-4**.

The MEMU EIR found the following noise and vibration impacts to be significant and unavoidable. Because the proposed project, including the Elan Project, would extend the boundaries of the MEMU Overlay Zone into an area of the City not previously evaluated in the MEMU EIR, it was determined the proposed project could result in new or substantially more severe impacts related to these thresholds. Therefore, these thresholds are fully evaluated in this SEIR.

- Construction activities associated with the proposed project could generate or expose persons or structures to excessive groundborne vibration. While implementation of mitigation measures **MM-OZ 4.9-1** through **MM-OZ 4.9-4** would minimize this impact, it would remain significant and unavoidable.
- Operation of the proposed project would generate increased local traffic volumes that would cause a substantial permanent increase in ambient noise levels in the project vicinity.

Impacts of Proposed Project

MEMU Overlay Zone Expansion Area

Threshold: Would the proposed project expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Impact 4.7-1. Construction activities associated with the proposed project would generate temporary noise levels in excess of the noise limits typically imposed by the City of Santa Ana Municipal Code.

Two types of short-term noise impacts could occur due to construction of future development projects within the expansion area. First, construction worker vehicles and haul trucks that would transport equipment and materials would incrementally increase noise levels on access roads. This would include construction worker vehicles and haul trucks traveling to and from the future development project sites. Although there would be a relatively high single-event noise level, which could cause an intermittent noise nuisance (e.g., passing trucks at 50 feet could generate up to 77 dBA), the effect on longer-term ambient noise levels (e.g., the daily average noise levels [CNEL] considered in the City's General Plan guidelines) would be small. Therefore, there would be no impacts related to the short-term noise associated with commuting construction workers and transporting equipment and materials to future development project sites in the MEMU Overlay zone expansion area.

The second category of construction noise would be noise generated during onsite construction of future development projects. Development of projects under the MEMU Overlay Zone expansion

area could require the use of heavy equipment for demolition, site excavation, installation of utilities, site grading, paving, and building fabrication. Construction activities could also involve the use of smaller power tools, generators, and other sources of noise. During each stage of construction there would be a different mix of equipment operating, and noise levels would vary based on the amount of equipment in operation and the location of the activity.

Typical construction equipment and associated noise levels are listed in Table 4.7-1. The noise levels are provided for a reference distance of 50 feet. These noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 86 dBA measured at 50 feet from the noise source to the receptor would reduce to 80 dBA at 100 feet from the source to the receptor, and by another 6 dBA to 74 dBA at 200 feet from the source to the receptor.

Table 4.7-1. Noise Ranges of Typical Construction Equipment

Equipment	Maximum Noise Level (L_{max}) at 50 feet, dBA^{a,b}
Front Loader	79.1
Trucks	76.5
Cranes	80.6
Concrete Saw	89.6
Pneumatic Impact Equipment	85.2
Jackhammers	88.9
Pumps	80.9
Generators	80.6
Compressors	77.7
Concrete Mixers (Vibratory)	80.0
Concrete Pump Truck	81.4
Back Hoe	77.6
Pile Driver (Impact)	101.3
Tractor	84.0
Vibratory Roller	80.0
Scraper	83.6
Grader	85.0
Paver	77.2

^a Obtained or estimated from Federal Highway Administration 2008 (Roadway Construction Noise Model).

^b Machinery equipped with noise control devices or other noise-reducing design features does not generate the same level of noise emissions as shown in this table.

The nearest sensitive uses to construction activities would vary at different locations in and around the MEMU Overlay Zone expansion area. Because specific development plans have not yet been determined at individual sites, for the purpose of this analysis it is assumed that sensitive receptors could be as close as 25 feet from where construction would take place. Sensitive receptors in the project vicinity could experience noise levels up to 95.6 dBA as a result of construction activities, or as high as 107.3 dBA in the event that pile drivers are used. However, the construction equipment used on any given day could be mobile across the entire project site. Therefore, the duration of

activity close to any individual receptor would be limited, and noise levels would reduce rapidly as work moves away from the receptor location.

The City of Santa Ana Municipal Code, Section 18-314(e), allows for noise resulting from construction activities to be exempt from noise limits established in the Code. In accordance with the Municipal Code, construction activities would also be limited to between 7 a.m. and 8 p.m. on Monday through Saturday, and would be prohibited on Sundays and federal holidays. As construction would not occur except during times permitted in the City's Municipal Code, and as the Municipal Code, Section 18-314(e), allows construction noise in excess of standards to occur between these hours, the proposed project would not violate established standards.

Mitigation measures **MM-OZ 4.9-1** through **MM-OZ 4.9-4** proposed in the MEMU EIR would ensure that impacts associated with construction-related noise would be minimized and that that construction activity occurs only during the hours exempted by the City of Santa Ana Municipal Code. Therefore, this impact would be *less than significant*.

Impact 4.7-2. Operation of the proposed project could expose land uses to noise levels that exceed the standards established by the City of Santa General Plan.

Sources of project-generated noise could include new stationary sources (such as rooftop heating, ventilation, and air conditioning [HVAC] systems). Such systems, which would be installed for new residential buildings, could result in noise levels that average between 50 and 65 dBA L_{eq} at 50 feet from the equipment. As 24-hour CNEL noise levels are approximately 6.7 dBA greater than 24-hour L_{eq} measurements, this means that the HVAC equipment could generate community noise levels that average between 57 and 72 dBA CNEL at 50 feet when the equipment is operating constantly over 24 hours. The installation of shielding around these HVAC systems would be required as part of the proposed project, as stated in mitigation measure **MM-OZ 4.9-7** from the MEMU EIR.

The shielding installed around these HVAC systems would typically reduce noise levels by approximately 15 dBA, which could reduce HVAC system noise to approximately 50 dBA L_{eq} at 50 feet from the equipment, which would be approximately 56.7 dBA CNEL. Implementation of mitigation measure **MM-OZ 4.9-7** from the MEMU EIR would ensure that impacts related to the HVAC systems would remain below the 65 dBA CNEL exterior noise standard established in the City's General Plan. As such, impacts of the proposed project relating to HVAC systems would be *less than significant*.

As shown in Table 3.7-1, long-term noise monitoring locations M-1 and M-2 currently exceed the 65 dBA CNEL exterior noise standard for residential land uses established in the City's General Plan. An analysis of traffic noise levels (refer to the analysis and discussion under Impact 4.7-5, below) also indicates multiple roadways within the project area that generate noise levels in excess of 65 dBA CNEL. Therefore, implementation of the proposed project would lead to the development of residential uses in areas where noise levels exceed the 65 dBA CNEL, which would lead to significant impacts. However, implementation of mitigation measure **MM-NOI-1**, which is newly developed as part of this SEIR, would ensure that exterior noise control is provided as necessary to comply with the City's exterior noise guidelines as specified in the Noise Element of the General Plan.. Furthermore, implementation of mitigation measure **MM-OZ 4.9-6** from the MEMU EIR would ensure that noise levels within interior living spaces of the residential units do not exceed the 45 dBA CNEL interior noise standard established in the City's General Plan. Therefore, this impact would be *less than significant*.

Threshold: Would the proposed project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact 4.7-3. Construction activities associated with the proposed project would generate a substantial temporary increase in ambient noise levels.

Noise measurements M-1 through M-3 indicate that the general daytime ambient noise levels in the project vicinity range from approximately 53 to 70 dBA L_{eq} (refer to Table 3.7-1). Referring to the analysis under Impact 4.7-1, above, sensitive receptors within 25 feet of future development project sites in the MEMU Overlay Zone expansion area could experience maximum noise levels up to 95.6 dBA as a result of construction activities, or as high as 107.3 dBA in the event that pile drivers are used. Allowing for typical duty cycles (i.e., the fact that equipment would not constantly generate maximum noise levels) and the mobility of equipment across a construction site (i.e., the fact that equipment would not stay constantly within 25 feet of a single receptor location) average noise levels would be lower than maximum noise levels, but would still likely be in excess of 70 to 80 dBA for the closest adjacent receivers. This would exceed the ambient noise levels by up to approximately 27 dB, which would be very noticeable and could generate a temporary nuisance. However, implementation of mitigation measure **MM-OZ 4.9-1** from the MEMU EIR would ensure that construction noise occurs only during the hours exempted by the Municipal Code, and mitigation measures **MM-OZ 4.9-2** through **MM-OZ 4.9-4** from the MEMU EIR would reduce noise levels to the extent practical. While construction noise levels would remain substantial, they would be consistent with the exemption for construction noise that exists in the Municipal Code. Therefore, this impact would be *less than significant*.

Threshold: Would the proposed project expose persons to or generate excessive groundborne vibration or groundborne noise levels?

Impact 4.7-4. Construction of the proposed project could generate or expose persons or structures to excessive groundborne vibration.

The potential effects of ground-borne vibration fall into two categories: building damage and annoyance for people. The potential for vibration from project construction to damage buildings represents a physical impact on the environment. However, annoyance potential, although a source of possible short-term nuisance, would not be considered a physical impact on the environment. Table 4.7-2 describes the general human response to different levels of groundborne vibration velocity levels. With regard to the potential for building damage from ground-borne vibration, the Federal Transit Administration (FTA) suggests the threshold criteria in Table 4.7-3.

Table 4.7-2. Human Response to Different Levels of Groundborne Vibration

Vibration Velocity Level (VdB) ^a	Human Response
65	Approximate threshold of vibration perception for many humans.
75	Approximate dividing line between barely perceptible and distinctly perceptible.
85	Vibration acceptable only if there are an infrequent number of events per day.

Source: Federal Transit Administration 2006

^a root mean square (RMS) vibration velocity in decibels (VdB) re 1 microinch per second ($\mu\text{in/s}$).

Table 4.7-3. Construction Vibration Damage Criteria

Building Category	Approximate VdB^a
I. Reinforced-concrete, steel or timber (no plaster)	102
II. Engineered concrete and masonry (no plaster)	98
III. Nonengineered timber and masonry buildings	94
IV. Buildings extremely susceptible to vibration damage	90

Source: Federal Transit Administration 2006.
^a RMS VdB re 1 μ in/s

Based on the typical construction equipment shown in Table 4.7-1, the worst-case vibration levels would be associated with the operation of heavy earthmoving and impact equipment such as pile-drivers, vibratory rollers, backhoes, and graders. Table 4.7-4 identifies various vibration velocity levels for the types of construction equipment that could potentially be expected to operate within the City during construction.

Table 4.7-4. Vibration Source Levels for Construction Equipment

Equipment		Approximate VdB^a			
		25 Feet	50 Feet	75 Feet	100 Feet
Pile Driver (Impact)	Upper Range	112	103	97.7	93.9
	Typical	104	95	89.7	85.9
Pile Driver (Vibratory)	Upper Range	105	96	90.7	86.9
	Typical	93	84	78.7	74.9
Clam Shovel Drop (Slurry Wall)		94	85	79.7	75.9
Hydromill (Slurry Wall)	In Soil	66	57	51.7	47.9
	In Rock	75	66	60.7	56.9
Vibratory Roller		94	85	79.7	75.9
Hoe Ram		87	78	72.7	68.9
Large Bulldozer		87	78	72.7	68.9
Caisson Drilling		87	78	72.7	68.9
Loaded Trucks		86	77	71.7	67.9
Jackhammer		79	70	64.7	60.9
Small Bulldozer		58	49	43.7	39.9

Source: Federal Transit Administration 2006
^a RMS vibration velocity in decibels (VdB) re 1 μ in/s

Groundborne vibration will attenuate with distance as described by the following equation (FTA 2006):

$$L_v(D) = L_v(25ft) - 30 \times \log(D/25)$$

where $L_v(D)$ is the vibration velocity level (in VdB) at distance D (in feet) and $L_v(25ft)$ is the reference vibration velocity level at 25 feet from the equipment.

The groundborne vibration generated during construction activities would primarily impact existing sensitive uses (e.g., residences, parks, and schools) that are adjacent to, or within, the vicinity of specific projects. These sensitive uses could sometimes be as close as 25 feet or as far as several hundred feet from the construction site. Due to the mobile nature of the construction equipment, the duration of activity close to any individual structure or sensitive receptor would be limited, and the vibration levels would reduce rapidly as work moves away from the structure or receptor location.

Based on the information presented in Table 4.7-4, vibration levels could reach up to 94 VdB at sensitive uses within 25 feet of construction, or as high as 112 VdB in the event that pile driving is used. Sensitive receptors that are at or within 50 feet of potential project construction sites may experience vibration levels during construction activities that exceed the FTA's vibration impact threshold of 85 VdB for human annoyance. So long as pile driving is not used and construction occurs more than 50 feet from sensitive receptors, the impact associated with groundborne vibration generated by the equipment would be below the 85 VdB threshold for human annoyance and would be below the potential for building damage, and thus would be less than significant. However, as specific site plans or construction schedules are unknown at this time, it may be possible that construction activities could occur as close as 25 feet from sensitive receptors. This would result in these sensitive receptors experiencing vibration impacts above the threshold of 85 VdB and could cause damage to buildings that are particularly susceptible to damage, in which case this impact would be potentially significant. Implementation of mitigation measures **MM-OZ 4.9-1** through **MM-OZ 4.9-4** from the MEMU EIR would help to reduce this impact, but not to less than significant; therefore, this impact would remain *significant and unavoidable*.

Threshold: Would the proposed project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact 4.7-5. Operation of the proposed project would generate increased local traffic volumes that would cause a substantial increase in ambient noise levels in the project vicinity.

The existing and expanded MEMU Overlay Zone would generate new vehicle trips that would add incrementally to existing traffic on surrounding streets and would change the associated traffic noise. The analysis of traffic noise in the study area was based on data from the Traffic Impact Study (TIS) for the proposed project (Appendix G1). The analysis was conducted using a proprietary traffic noise model, with calculations based on data from the Federal Highway Administration (FHWA) Traffic Noise Model, Version 2.5, Look-Up Tables (Federal Highway Administration 2004). The inputs used in the traffic noise modeling included average daily traffic (ADT) volumes, assumed traffic mix and daily distribution (the percentage of automobiles versus medium trucks and heavy trucks during each hour of the day), and traffic speeds (based on the posted speed limits). To quantify the effects of the proposed project, traffic noise was analyzed at a reference distance of 50 feet from the roadway centerline using two different scenarios: (1) existing, and (2) existing with project. The noise modeling is provided in Appendix F. Table 4.7-5 summarizes the predicted noise levels both with and without the project, from the roadway segments considered in the TIS (Appendix G1).

Table 4.7-5. Estimated Traffic Noise Levels for the MEMU Overlay Zone Expansion Area

Roadway Segment	Estimated Unmitigated Traffic Noise Levels at 50 feet from Roadway Centerline (dBA CNEL)				
	Existing (2017)	Existing (2017) + Project	Increase over Existing	Significance Threshold ^a (Increase)	Significant?
Fourth Street					
Grand Ave to I-5 SB Off-Ramps	65.7	66.9	1.2	3.0	No
Golden Circle Dr to Tustin Ave	68.3	71.9	3.6	3.0	Yes
First Street					
Grand Ave to Lyon St	69.7	72.7	3.0	3.0	Yes
Golden Circle Dr to Tustin Ave	67.8	71.9	4.1	3.0	Yes
Main St to Standard Ave	70.5	71.4	0.9	3.0	No
Lyon Street					
First St to Main St	63.9	66.9	2.9	3.0	No
Chestnut Ave to McFadden Ave	64.2	65.0	0.8	3.0	No
Elk Lane					
First St to Main St	58.7	61.8	3.0	5.0	No
Cabrillo Park Drive					
Fruit St to Park Court Place	63.7	64.3	0.6	5.0	No
Fourth St to First St	64.2	69.2	4.9	3.0	Yes
Tustin Avenue					
Fruit St to Sixth St	68.7	70.1	1.3	3.0	No
Fourth St to First St	66.9	70.7	3.7	3.0	Yes
Grand Avenue					
Fourth St to First St	70.4	72.1	1.7	3.0	No
First St to Chestnut Ave	71.3	71.6	0.3	3.0	No
Santa Ana Blvd to 4th St	70.4	71.9	1.6	3.0	No
Chestnut Ave to McFadden Ave	71.1	71.4	0.3	3.0	No
Chestnut Avenue					
Grand Ave to Lyon St	64.1	64.4	0.3	5.0	No

Source: Appendix F

^a Significance thresholds are defined as follows:

5.0 dBA CNEL if the existing + project noise level (rounded to the nearest whole number) is below the City of Santa Ana standard of 65 dBA CNEL.

3.0 dBA CNEL if the existing + project noise level (rounded to the nearest whole number) meets or exceeds the City of Santa Ana standard of 65 dBA CNEL.

As shown in Table 4.7-5, five roadway segments would exceed the 3.0 dBA CNEL increase with implementation of the proposed project. Fourth Street between Golden Circle Drive and Tustin Avenue would increase from 68.3 dBA CNEL to 71.9 dBA CNEL. First Street between Grand Avenue and Lyon Street would increase from 69.7 dBA CNEL to 72.7 dBA CNEL, and between Golden Circle Drive and Tustin Avenue would increase from 67.8 dBA CNEL to 71.9 dBA CNEL. Cabrillo Park Avenue between Fourth Street and First Street would increase from 64.2 dBA CNEL to 69.2 dBA

CNEL. Tustin Avenue between Fourth Street and First Street would increase from 66.9 dBA CNEL to 70.7 dBA CNEL.

These increases of 3.0 dBA CNEL and greater would constitute a substantial permanent increase in ambient noise levels due to implementation of the proposed project. As there is no feasible mitigation to reduce this impact, this impact would be considered *significant and unavoidable*.

Elan Project

Threshold: Would the proposed project expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Impact 4.7-E1. Construction activities associated with the Elan Project would generate temporary noise levels in excess of the noise limits typically imposed by the City of Santa Ana Municipal Code.

As discussed for the MEMU Overlay Zone expansion area, two types of short-term noise impacts could occur due to project construction. First, construction worker vehicles and haul trucks that would transport equipment and materials would incrementally increase noise levels on access roads. This would include construction worker vehicles and haul trucks traveling to and from the project site. Although there would be a relatively high single-event noise level, which could cause an intermittent noise nuisance (e.g., passing trucks at 50 feet could generate up to 77 dBA), the effect on longer-term ambient noise levels (e.g., the CNEL considered in the City's General Plan guidelines) would be small. Therefore, there would be no impacts related to the short-term noise associated with commuting construction workers and transporting equipment and materials to the project site.

The second category of construction noise would be noise generated during onsite project construction. During each stage of construction there would be a different mix of equipment operating, and noise levels would vary based on the amount of equipment in operation and the location of the activity.

Construction of the Elan Project would be implemented in six phases. A description of each and the anticipated construction equipment needed are provided in Table 4.7-6.

Table 4.7-6. Construction Phasing, Tasks, and Equipment

Construction Phase	Equipment (Number of Pieces)
Phase 1 – Demolition	Concrete/Industrial Saw (1)
	Excavators (3)
	Rubber Tired Dozers (2)
Phase 2 – Site Preparation	Rubber Tired Dozers (3)
	Tractors/Loaders/Backhoes (4)
	Excavators (2)
	Grader (1)
Phase 3 – Grading	Rubber Tired Dozer (1)
	Scrapers (2)
	Tractors/Loaders/Backhoes (2)

Construction Phase	Equipment (Number of Pieces)
Phase 4 – Building Construction	Crane (1)
	Forklifts (3)
	Generator (1)
	Tractors/Loaders/Backhoes (3)
	Welder (1)
Phase 5 – Paving	Pavers (2)
	Paving Equipment (2)
	Rollers (2)
Phase 6 – Architectural Coating	Air Compressor (1)

Construction-related noise was analyzed using FHWA’s Roadway Construction Noise Model (RCNM, 2008), which predicts average noise levels (L_{eq}) at nearby receptors by analyzing the type of equipment, usage factor, the distance from source to receptor, and the presence, or absence, of intervening shielding between source and receptor.

The distances used in the modeling were the acoustical average distances from the project site to nearby noise-sensitive receptors. The acoustical average distance is calculated by multiplying the shortest distance by the farthest distance and then taking the square root of the product. The construction equipment used on any given day could be mobile across the entire project site. Therefore, actual noise levels during construction will vary depending on the relative distance from a given receptor to the current construction activities. To provide a conservative assessment, noise barrier effects that might be provided by intervening buildings or topography were excluded from analysis. The results of the analysis at six of the closest noise-sensitive receptors are provided in Appendix F and summarized in Table 4.7-7. Figure 4.7-1 shows the locations of the noise-sensitive receptors in relation to the Elan Project site.

Table 4.7-7. Construction Noise Levels by Phase at Sensitive Receptors

Construction Phase	Hourly Average Noise Level (1-hour L_{eq}) Due to Construction, dBA					
	R-1: Multi- Family Residence at 34 E Chestnut Ave	R-2: Multi- Family Residence at 322 S Lyon St	R-3: Multi- Family Residence at 224 S Lyon St	R-4: Multi- Family Residence at 210 S Lyon St	R-5: Multi- Family Residence at 1659 E First St	R-6: Santa Ana Zoo at 1801 E Chestnut Ave
Phase 1 – Demolition	74.0	71.3	72.3	73.6	70.2	73.0
Phase 2 – Site Preparation	73.9	71.2	72.2	73.5	70.1	72.9
Phase 3 – Grading	75.3	72.6	73.6	74.9	71.5	74.3
Phase 4 – Building Construction	71.7	69.0	70.0	71.3	67.9	70.7
Phase 5 – Paving	69.2	66.5	67.5	68.8	65.4	68.2
Phase 6 – Architectural Coating	61.2	58.6	59.5	60.8	57.4	60.2

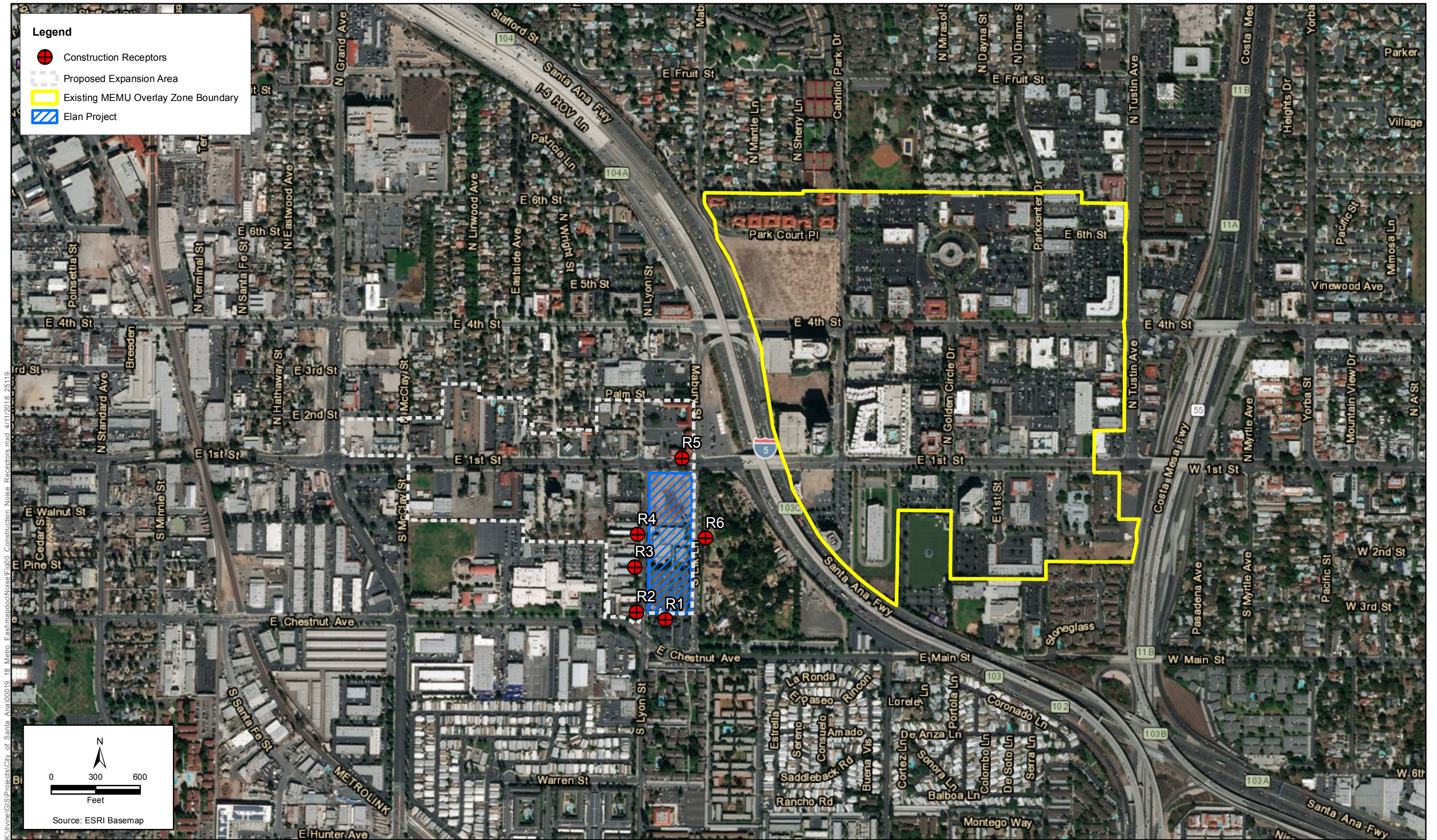


Figure 4.7-1
 Construction Noise Analysis Receptor Locations
 Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR

The City of Santa Ana Municipal Code, Section 18-314(e), allows for noise resulting from construction activities to be exempt from noise limits established in the Code. In accordance with the Municipal Code, construction activities would also be limited to the hours of 7:00 a.m. and 8:00 p.m. on Monday through Saturday, and is prohibited on Sundays and federal holidays. As construction would not occur except during times permitted in the City's Municipal Code, and as the Municipal Code, Section 18-314(e), allows construction noise in excess of standards to occur between these hours, the proposed project would not violate established standards.

Mitigation measures **MM-OZ 4.9-1** through **MM-OZ 4.9-4** from the MEMU EIR would limit noise-generating construction activity to the exempted daytime hours and to implement standard noise reduction methods to minimize potential annoyance at nearby noise-sensitive receptors. With the implementation of these measures, impacts would be *less than significant*.

Impact 4.7-E2. Operation of the Elan Project could expose land uses to noise levels that exceed the standards established by the City of Santa General Plan, which would be a significant impact.

As described above for the expansion area, sources of noise generated by implementation of the proposed project could include new stationary sources such as rooftop HVAC systems. The HVAC systems that would be installed for the new residential buildings associated with the Elan Project can result in noise levels that average between 50 and 65 dBA L_{eq} at 50 feet from the equipment. As 24-hour CNEL noise levels are approximately 6.7 dBA greater than 24-hour L_{eq} measurements, this means that the HVAC equipment could generate community noise levels that average between 57 and 72 dBA CNEL at 50 feet when the equipment is operating constantly over 24 hours. The installation of shielding around these HVAC systems would be required as part of the proposed project, as stated in mitigation measure **MM-OZ 4.9-7** from the MEMU EIR.

The shielding installed around these HVAC systems would typically reduce noise levels by approximately 15 dBA, which could reduce HVAC system noise to approximately 50 dBA L_{eq} at 50 feet from the equipment, which would be approximately 56.7 dBA CNEL. Implementation of mitigation measure **MM-OZ 4.9-7** from the MEMU EIR would ensure that impacts related to the HVAC systems would remain below the 65 dBA CNEL exterior noise standard established in the City's General Plan. As such, impacts of the Elan Project relating to HVAC systems would be *less than significant*.

As shown in Table 3.7-1, long-term noise monitoring location M-1, on the Elan Project site, is currently exposed to noise levels in excess of the 65 dBA CNEL exterior noise standard for residential land uses. Development of the project within an area where existing noise levels are over 65 dBA CNEL would constitute a significant impact. However, implementation of mitigation measure **MM-NOI-1**, which is newly developed as part of this SEIR, would ensure that exterior noise control is provided as necessary to comply with the City's exterior noise guidelines as specified in the Noise Element of the General Plan. Furthermore, implementation of mitigation measure **MM-OZ 4.9-6** from the MEMU EIR would ensure that noise levels within interior living spaces of residential units do not exceed the 45 dBA CNEL interior noise standard established in the City's General Plan. Therefore, this impact would be *less than significant*.

Threshold: Would the proposed project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact 4.7-E3. Construction activities associated with the Elan Project would generate a substantial temporary increase in ambient noise levels.

Noise measurement M-1, conducted on the proposed Elan site, indicates that the general daytime ambient noise levels range from approximately 65 to 70 dBA L_{eq} (see to Table 3.7-1). Referring to the analysis under Impact 4.7-3 for the MEMU Overlay Zone expansion area, the closest sensitive receptors to the Elan Project site would experience average noise levels in the range of 57 to 75 dBA as a result of construction activities. Noise levels at the higher end of this range would exceed the ambient noise levels by up to 10 dB, which would be clearly noticeable and could generate a temporary nuisance. However, implementation of mitigation measure **MM-OZ 4.9-1** from the MEMU EIR would ensure that construction noise occurs only during the hours exempted by the Municipal Code, and mitigation measures **MM-OZ 4.9-2** through **MM-OZ 4.9-4** from the MEMU EIR would reduce noise levels to the extent practical. While construction noise increases would remain substantial, they would be consistent with the exemption for construction noise that exists in the Municipal Code. Therefore, this impact would be *less than significant*.

Threshold: Would the proposed project expose persons to or generate excessive groundborne vibration or groundborne noise levels?

Impact 4.7-E4. Construction of the Elan Project could generate or expose persons or structures to excessive groundborne vibration.

Based on the anticipated construction equipment list shown in Table 4.7-6, the worst-case vibration levels would be associated with the operation of heavy earthmoving equipment such as pavers, backhoes, and graders. Table 4.7-8 identifies various vibration velocity levels for the types of construction equipment that could potentially be expected to operate around the Elan Project site during construction.

Table 4.7-8. Vibration Source Levels for Anticipated Construction Equipment at the Elan Project Site

Equipment	Approximate VdB ^a			
	25 Feet	50 Feet	75 Feet	100 Feet
Vibratory Roller	94	85	79.7	75.9
Hoe Ram	87	78	72.7	68.9
Large Bulldozer	87	78	72.7	68.9
Caisson Drilling	87	78	72.7	68.9
Loaded Trucks	86	77	71.7	67.9
Jackhammer	79	70	64.7	60.9
Small Bulldozer	58	49	43.7	39.9

Source: Federal Transit Administration 2006
^a RMS velocity in decibels (VdB) re 1µin/s

The groundborne vibration generated during construction activities would primarily impact existing sensitive uses (e.g., residences and parks) that are adjacent to, or within, the vicinity of the project site. These sensitive uses could sometimes be as close as 50 feet or as far as several hundred feet from the construction site. Due to the mobile nature of the construction equipment, the duration of activity close to any individual structure or sensitive receptor would be limited, and the vibration levels would reduce rapidly as work moves away from the structure or receptor location.

Based on the information presented in Table 4.7-8, vibration levels could reach up to 85 VdB at sensitive uses within 50 feet of construction. Sensitive receptors at or within 50 feet of potential project construction sites may experience vibration levels during construction activities that exceed the FTA's vibration impact threshold of 85 VdB for human annoyance. So long as construction activities do not occur within 50 feet of existing building structures, the vibration levels would be below the potential for building damage, and thus would be less than significant.

Any construction activities that occur within 50 feet of existing sensitive land uses could exceed the annoyance threshold of 85 VdB, in which case this impact would be potentially significant. Implementation of mitigation measures **MM-OZ 4.9-1** through **MM-OZ 4.9-4** from the MEMU EIR would help to reduce this impact, but not to a less than significant level; therefore, this impact would remain *significant and unavoidable*.

Threshold: Would the proposed project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact 4.7-E5. Operation of the Elan Project would generate increased local traffic volumes.

The Elan Project would generate new vehicle trips that would add incrementally to existing traffic on surrounding streets and would change the associated traffic noise. The analysis of traffic noise in the study area was based on data from the Traffic Impact Analysis (TIA) for the Elan Project (Appendix G2) which was finalized subsequent to the TIS prepared for the MEMU Overlay Zone expansion area (Appendix G1). The noise analysis was conducted using a proprietary traffic noise model, with calculations based on data from the FHWA Traffic Noise Model, Version 2.5, Look-Up Tables (Federal Highway Administration 2004). The inputs used in the traffic noise modeling included ADT volumes, assumed traffic mix and daily distribution (the percentage of automobiles versus medium trucks and heavy trucks during each hour of the day), and traffic speeds, based on the posted speed limits. To quantify the effects of the Elan Project, traffic noise was analyzed at a reference distance of 50 feet from the roadway centerline using two different scenarios: (1) existing and (2) existing with project. The noise modeling is provided in Appendix F. Table 4.7-9 summarizes the predicted noise levels both with and without the Elan Project, from the roadway segments considered in the TIA.

Table 4.7-9. Estimated Traffic Noise Levels for the Elan Project

Roadway Segment	Estimated Unmitigated Traffic Noise Levels at 50 feet from Roadway Centerline (dBA CNEL)				
	Existing	Existing + Project	Increase over Existing	Significance Threshold ^a (Increase)	Significant?
Fourth Street					
I-5 NB Ramps to Cabrillo Park Dr	68.5	68.6	0.1	3.0	No
Cabrillo Park Dr to Golden Circle Dr	69.0	69.0	0.0	3.0	No
First Street					
Grand Ave to Lyon St	70.1	70.2	0.1	3.0	No
I-5 SB Ramps to Cabrillo Park Dr	69.2	69.4	0.2	3.0	No
Cabrillo Park Dr to Golden Circle Dr	67.9	68.1	0.2	3.0	No
Lyon Street					
First St to Chestnut Ave	63.7	64.3	0.6	5.0	No
Chestnut Ave to Warren St	65.0	65.0	0.0	3.0	No
Elk Lane					
First St to Chestnut Ave	58.8	60.2	1.4	5.0	No
Cabrillo Park Drive					
State Fund to Xerox Centre	63.7	64.0	0.3	5.0	No
Tustin Avenue					
Fourth St to First St	67.1	67.3	0.2	3.0	No
Chestnut Avenue					
Grand Ave to Lyon St	63.9	64.0	0.1	5.0	No
Main Street					
Williams St to Stoneglass	64.2	64.3	0.1	5.0	No

Source: Appendix F

^a Significance thresholds are defined as follows:

5.0 dBA CNEL if the existing + project noise level (rounded to the nearest whole number) is below the City of Santa Ana standard of 65 dBA CNEL.

3.0 dBA CNEL if the existing + project noise level (rounded to the nearest whole number) meets or exceeds the City of Santa Ana standard of 65 dBA CNEL.

As shown in Table 4.7-9, there are no roadway segments that would exceed the 3.0 dBA or 5.0 dBA CNEL increase with implementation of the Elan Project. Therefore, this impact would be considered *less than significant*.

Mitigation Measures Applicable to the Proposed Project

Implementation of the following mitigation measures from the MEMU EIR would apply to projects proposed in the MEMU Overlay Zone expansion area, including the Elan Project:

- MM-OZ 4.9-1** Construction activities shall be limited to the following general restrictions. In the event that there is a conflict between the City of Santa Ana Municipal Code and the City of Tustin Municipal Code, the more restrictive measures shall be applied:

- All construction activity within the City shall be conducted in accordance with Section 18-314(e) of the City of Santa Ana Municipal Code.
- All construction activity within 200 feet of the City of Tustin Border shall be conducted in accordance with Section 4617(e) of the City of Tustin Municipal Code.

MM-OZ 4.9-2

The project applicant shall require by contract specifications that the following construction BMPs be implemented by contractors to reduce construction noise levels:

- Two weeks prior to the commencement of construction, notification must be provided to surrounding land uses within 1,000 feet of a project site disclosing the construction schedule, including the various types of activities that would be occurring throughout the duration of the construction period.
- Ensure that construction equipment is properly muffled according to industry standards and be in good working condition.
- Place noise-generating construction equipment and locate construction staging areas away from sensitive uses, where feasible.
- Schedule high noise-producing activities between the hours of 8:00 A.M. and 5:00 P.M. to minimize disruption on sensitive uses.
- Implement noise attenuation measures to the extent feasible, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources.
- Use electric air compressors and similar power tools rather than diesel equipment, where feasible.
- Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes.
- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.

Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City prior to issuance of a grading permit.

MM-OZ 4.9-3

The project applicant shall require by contract specifications that construction staging areas along with the operation of earthmoving equipment within the project area would be located as far away from vibration and noise sensitive sites as possible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City prior to issuance of a grading permit.

- MM-OZ 4.9-4** The project applicant shall require by contract specifications that heavily loaded trucks used during construction would be routed away from residential streets to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City prior to issuance of a grading permit.
- MM-OZ 4.9-6** Prior to issuance of building permits, building plans shall specify the STC rating of windows and doors for all residential land uses. Window and door ratings shall be sufficient to reduce the interior noise level to a CNEL of 45 dBA or less, and shall be determined by a qualified acoustical consultant as part of the final engineering design of the project.
- MM-OZ 4.9-7** The developer shall provide proper shielding for all new HVAC systems used by the proposed residential and mixed use buildings to achieve an attenuation of 15 dBA at 50 feet from the equipment.

New Mitigation Measures Applicable to the Proposed Project

The following mitigation measure is newly developed to reduce potential exterior noise impacts at future residential uses developed as a result of implementation of the proposed project, including the Elan Project.

- MM-NOI-1** Where future residential uses would be constructed in areas exposed to noise, exterior noise control shall be provided as necessary to comply with the City's exterior noise guideline of 65 dB CNEL, as specified in the Noise Element of the General Plan. The noise control requirements, if any, shall be determined by a qualified acoustical consultant as part of the final engineering design of the project and shall be included on the building plans prior to issuance of building permits. It is noted that exterior living space for multi-family developments may be provided as a combination of private space (patios, balconies, etc.) and common areas (playgrounds, pool areas, etc.). As a result, it may not be necessary to provide noise control at all private areas, provided sufficient common area is included within the project.

4.8 Transportation/Traffic

Summary of MEMU EIR Findings

The certified MEMU EIR found that implementation of the original MEMU Overlay Zone would have less-than-significant impacts on the following transportation and traffic thresholds. Implementation of the proposed project, including the Elan Project, was also found to have less-than-significant impacts on these thresholds, and they are therefore not discussed further in this SEIR. For more details on these thresholds, see Appendix A.

- Implementation of the project would not increase traffic volumes such that street segment volume capacities are exceeded.
- Implementation of the project would not increase hazards due to a design feature or incompatible uses.
- Implementation of the project would not result in inadequate parking capacity.

The certified MEMU EIR found that implementation of the original MEMU Overlay Zone would have less-than-significant impacts with mitigation incorporated on the following transportation and traffic thresholds. Implementation of the proposed project, including the Elan Project, was also found to have less-than-significant impacts on these thresholds, and they are therefore not discussed further in this SEIR. For more details on these thresholds, see Appendix A.

- Implementation of the project would not result in a change in air traffic patterns. However, applicants and developers within the MEMU Overlay Zone expansion area would need to file with the Federal Aviation Administration (FAA) if a project could result in development of structures taller than 200 feet above ground level. Mitigation measure **MM-OZ 4.6-4** would be required for any future project within the Overlay Zone that would exceed 200 feet in height, which requires filing of a Notice of Proposed Construction or Alteration (FAA Form 7460-1). Compliance with recommendations or guidelines from FAA would ensure that future development would not result in any change to air traffic patterns.
- The project could result in inadequate emergency access; however, adherence to mitigation measures **MM-OZ 4.6-5**, **4.6-6**, and **4.6-7** would ensure impacts remain less than significant.
- The project would not conflict with adopted policies, plans, or programs supporting alternative transportation. However, several facilities and programs were identified that could be incorporated into the project to help encourage public transit patronage for program-related trips. These are captured in mitigation measure **MM-OZ 4.12-1**. Implementation of this mitigation measure would minimize impacts, thereby resulting in less-than-significant impacts.

The certified MEMU EIR found that implementation of the original MEMU Overlay Zone would result in significant and unavoidable impacts related to the following transportation and traffic thresholds. Implementation of the proposed project, including the Elan Project, could also result in potentially significant effects and therefore these thresholds are fully evaluated in this SEIR.

- Implementation of the project would cause an increase in traffic that is substantial in relation to existing traffic load and capacity of the street system. Implementation of mitigation measures

would reduce this impact, but not to a less-than-significant level. Therefore, this impact would be considered *significant and unavoidable*.

- Implementation of the proposed project would exceed standards established by the Orange County Transportation Authority within the Study Area. Therefore, this impact is considered to be *significant and unavoidable*.

Thirty eight study intersections were evaluated in the 2007 MEMU EIR. The previous MEMU Overlay Zone was expected to generate approximately 115,521 daily trips in 2030. Of this amount, 8,487 were expected to be during the AM peak hour, and 11,974 trips during the PM peak hour. Existing land uses at the time that provided trip credits accounted for 38,597 daily trips, including 4,593 AM peak hour trips and 4,858 PM peak hour trips. The internal capture trip reductions were 9,232 daily trips. The net project vehicle trips were approximately 67,691 daily trips, of which 3,233 were expected to be during the AM peak hour, and 6,128 net project trips during the PM peak hour.

With the proposed project, 2030 traffic conditions were expected to result in half (19) of the 38 intersections to operate at level of service (LOS) D or better under the buildout with project condition. However, 13 signalized and 6 unsignalized intersections would operate at LOS E or worse in either the AM or PM peak hour or both. Effects found to be significant include increases in traffic that are substantial in relation to existing traffic loads and capacity. For those intersections that would operate at unacceptable levels, a comparison of the LOS and volume-to-capacity ratios or delay was conducted. The following eight intersections were found to experience significant impacts during the AM peak hour:

- Fourth Street at State Route (SR-) 55 southbound ramps (LOS F)
- Fourth Street at Tustin Avenue (LOS F)
- Fourth Street at Cabrillo Park Drive (LOS E)
- Seventeenth Street at Tustin Avenue (LOS E)
- Irvine Boulevard at SR-55 northbound ramps (LOS F)
- Wellington Avenue at Cabrillo Park Drive (LOS F)
- Tustin Avenue at Sixth Street (LOS F)
- First Street at B Street (LOS F)

First Street at Newport Avenue and Irvine Boulevard at Newport Avenue would also operate at unacceptable LOS, but the project's contribution was less than 0.03, which is the threshold of the City of Tustin.

The following 16 intersections were found to experience significant impacts during the PM peak hour:

- First Street at Cabrillo Park Drive (LOS F)
- First Street at Elk Lane (LOS F)
- Fourth Street at SR-55 southbound ramps (LOS F)
- Fourth Street at Tustin Avenue (LOS F)
- Fourth Street at Golden Circle Drive (LOS E)
- Fourth Street at Cabrillo Park Drive (LOS F)

- Fourth Street at Interstate (I-) 5 northbound ramps (LOS F)
- 17th Street at Cabrillo Park Drive (LOS E)
- First Street at Prospect (LOS E)
- Irvine Boulevard at SR-55 northbound ramps (LOS F)
- Parkcourt Place at Cabrillo Park Drive (LOS F)
- Fruit Street at Cabrillo Park Drive (LOS E)
- Wellington Avenue at Cabrillo Park Drive (LOS F)
- Tustin Avenue at Sixth Street (LOS F)
- Fourth Street at Parkcenter Drive (LOS F)
- First Street at B Street (LOS F)

Full buildout of the proposed MEMU Overlay Zone is dependent on future individual development projects, the exact type and location of which are unknown. As such, the EIR identified potential improvement measures that would serve to reduce impacts at the affected intersections. The 2007 MEMU EIR noted that any future development proposed within the MEMU Overlay Zone would need to prepare a separate traffic study, specific to the individual projects that are proposed. As development occurs, the following measures may be implemented as part of future development projects, as required:

- **First Street at Cabrillo Park Drive** – restripe for a second eastbound left-turn lane, by reducing the eastbound through approach to two lanes.
- **First Street at Elk Lane** – construct a second northbound right-turn lane and northbound right-turn overlap signal phasing.
- **Fourth Street at SR-55 Southbound Ramps** – construct an eastbound free right-turn lane, and change the southbound ramp configuration to two left- and two right-turn lanes.
- **Fourth Street at Tustin Avenue** – construct a westbound right-turn lane, a second eastbound left-turn lane, and a northbound right-turn lane (to allow conversion of the northbound shared through/right-turn lane to a through lane). Northbound right-turn overlap signal phasing should be installed. This would not be fully mitigated.
- **Fourth Street at Golden Circle** – construct an eastbound right-turn lane and change the southbound lane configuration to provide one left-turn lane and one shared through/right-turn lane.
- **Fourth Street at Cabrillo Park Drive** – construct a westbound right-turn lane, a northbound right-turn lane, and a southbound right-turn lane, and restripe to change the lane configuration of the north/south approaches. The northbound and southbound approaches should be controlled by a split phase intersection control and restriped to provide one left-turn, one shared through/left-turn, one through, and one right-turn lane.
- **I-5 Northbound Ramps and Fourth Street** – construct a second westbound right-turn lane. This is outside of City jurisdiction and implementation cannot be ensured.
- **17th Street at Cabrillo Park Drive** – restripe the northbound lane configuration to one left-turn, one shared left-turn/through, and one right-turn lane, with split signal phasing.

- **17th Street at Tustin Avenue** – construct a third northbound through/right-turn lane and designate the lanes to allow vehicles to turn right from the right-turn lane and from the adjacent (new) through lane.
- **First Street at Prospect Avenue** – construct a northbound right-turn lane and northbound right-turn overlap signal phasing. This is outside of City jurisdiction and implementation cannot be ensured.
- **First Street at Newport Avenue** – provide eastbound right-turn overlap signal phasing and a third southbound through lane by constructing a southbound right-turn lane. This is outside of City jurisdiction and implementation cannot be ensured.
- **Irvine Boulevard at SR-55 Northbound Ramps** – construct a westbound free right-turn lane and convert the third eastbound through lane to a second eastbound left-turn lane.
- **Parkcourt at Cabrillo Park Drive** – prohibit cross-traffic through the use of median islands, diverters, or other means.
- **Fruit Street at Cabrillo Park Drive** – install a traffic signal or roundabout.
- **Wellington Avenue at Cabrillo Park Drive** – install a traffic signal or roundabout.
- **Tustin Avenue and Sixth Street** – prohibit eastbound-westbound cross-traffic through the construction of median islands or diverters.
- **Fourth Street and Parkcenter** – install a traffic signal.
- **First Street and B Street** – install a traffic signal.

Mitigation measures **MM-OZ 4.12-2** through **MM-OZ 4.12-4** (see below) were expected to fully mitigate all project traffic impacts to an acceptable LOS, except at Fourth Street at Tustin Avenue. Additionally, some of the significantly affected intersections would be outside of the City's jurisdiction; therefore, the City cannot ensure implementation of the suggested improvements. Therefore, the implementation of the original MEMU Overlay Zone was found to result in an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system and the impact was considered to be significant and unavoidable.

The original MEMU Overlay Zone was also found to exceed standards established by the Orange County Transportation Authority (OCTA) for the Congestion Management Program (CMP). Two of the CMP intersections, Fourth Street at SR-55 southbound ramps and Irvine Boulevard at SR-55 northbound ramps, would experience poor LOS due to the proposed project. Implementation of the identified improvement measures would improve the LOS to acceptable operating conditions (LOS D). However, implementation of the improvements cannot be ensured by the City because the intersection of Irvine Boulevard at SR-55 northbound ramps is outside of the City's jurisdiction. Therefore, this impact was determined to be significant and unavoidable.

Impacts of Proposed Project

MEMU Overlay Zone Expansion Area

Threshold: Would the proposed project cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?

Impact 4.8-1. Implementation of the proposed project would cause an increase in traffic that is substantial in relation to existing traffic load and capacity of the street system.

The proposed project would allow for construction of up to 5,551 residential units, 1.5 million square feet of office space, and up to 3.1 million square feet of commercial space throughout the existing and proposed MEMU expansion areas. The MEMU Expansion Traffic Study (Appendix G1) analyzed the forecasted traffic for the years 2025 and 2040 without and with the proposed project.

2025 Future without Project

In 2025 without the project, all roadway segments are expected to operate at acceptable LOS (LOS D or better) except for the following:

- Lyon Street between First Street and Main Street (LOS E)

All study intersections are expected to operate at acceptable LOS during the AM and PM peak hours except for the following:

- Elk Lane & Chestnut Avenue (LOS E AM and LOS F PM)
- SR-55 southbound ramps & Irvine Boulevard (LOS E AM)
- SR-55 northbound ramps & 17th Street (LOS F AM and PM)

2040 Future without Project

By 2040, the City of Tustin will have implemented improvements to First Street, extending from the westernmost city limits to just east of the SR-55 bridge to Newport Avenue. The improvements will include converting the two vehicle travel lanes in each direction to a one-lane roadway with angled on-street parking and a Class II bike lane in each direction.

In 2040 without the project, all roadway segments are expected to operate at acceptable LOS (LOS D or better) except for the following:

- Lyon Street between First Street and Main Street (LOS F)

All study intersections are expected to operate at acceptable LOS during the AM and PM peak hours except for the following:

- Main Street & First Street (LOS E PM)
- Standard Avenue & First Street (LOS F AM and PM)

- Standard Avenue and Chestnut Avenue (LOS E AM)
- Grand Avenue & 17th Street (LOS F AM and LOS E PM)
- Grand Avenue and Santa Ana Boulevard (LOS F PM)
- Elk Lane & Chestnut Avenue (LOS F AM and PM)
- Tustin Avenue & 17th Street (LOS E PM)
- SR-55 southbound ramps & Irvine Boulevard (LOS F AM and LOS E PM)
- SR-55 northbound ramps & 17th Street (LOS F PM)
- Yorba Street & First Street (LOS E PM)
- Prospect Avenue & First Street (LOS F PM)

Project Trip Generation

For 2025 project conditions, the trip generation is expected to be 127,817 net daily trips, with 3,585 expected to be during the AM peak hour, and approximately 11,018 net trips during the PM peak hour. The existing land uses generate 43,676 daily trips, with 4,307 AM peak hour and 4,749 PM peak hour trips. The internal trip capture trip reductions applied to forecasted trips are 14,434 daily trips, including 248 AM peak hour and 1,416 PM peak hour. The reductions apply to the retail/commercial and office components and correspond to residential trip ends.

The 2040 buildout year with project conditions calculate project trips using the proposed potential land use less that land use from the previously approved MEMU Overlay Zone project and less the existing land use in the new expansion area. The net increase/decrease in land use trips are used to analyze the buildout year with project conditions. In 2040, the trip generation is expected to be approximately 26,459 daily trips with -658 in the AM peak hour and 2,223 in the PM peak hour. The trip generation for the existing land uses within the expansion area is 8,549 daily trips, including 589 trips in the AM peak hour and 745 in the PM peak hour. The internal trip capture trip reductions applied to the forecasted trips are 8,534 daily trips. These reductions apply to the retail/commercial and office components of the MEMU Overlay Zone expansion area project and the corresponding residential trip ends.

Although the proposed project would allow the buildout of a maximum of 5,551 residential units, the buildout year 2040 trip generation includes an increase of 2,408 dwelling units. This net increase is based on the potential land use development of individual parcels based on the parcel size along with some decrease in previously approved office use. Because the 5,551 dwelling units can be developed throughout the entire MEMU Overlay Zone area, the net increase in residential units is included for conservative purposes. The 5,551 residential units proposed are the same units identified from the existing MEMU EIR and would be distributed over the existing and proposed MEMU Overlay Zone study area; no new units are proposed to be added to the residential unit cap.

Existing plus Project

This scenario adds the project-generated traffic to the existing 2017 traffic conditions. The following eight roadway segments are expected to operate at unacceptable LOS (LOS E/F) with the expected traffic levels and existing lane configurations.

- First Street between Grand Avenue and Lyon Street (LOS F)

- Lyon Street between First Street and Main Street (LOS F)
- Elk Lane between First Street and Main Street (LOS F)
- Cabrillo Park between Fourth Street and First Street (LOS F)
- Fourth Street between Golden Circle Drive and Tustin Avenue (LOS E)
- First Street between Golden Circle Drive and Tustin Avenue (LOS E)
- Grand Avenue between Fourth Street and First Street (LOS E)
- Grand Avenue between Santa Ana Boulevard and Fourth Street (LOS E)

The following 16 study intersections would operate at unacceptable LOS in either the AM or PM, or both:

- Standard Avenue & First Street (LOS F PM)
- Grand Avenue & Fourth Street (LOS E AM and LOS F PM)
- Grand Avenue & First Street (LOS F PM)
- Lyon Street & First Street (LOS F PM)
- Mabury Street & First Street (LOS F PM)
- Elk Lane & Chestnut Avenue (LOS F AM and PM)
- I-5 southbound on-ramp & First Street (LOS F PM)
- Cabrillo Park Drive & Parkcourt Place (LOS F AM and PM)
- Cabrillo Park Drive & Fourth Street (LOS F PM)
- Cabrillo Park Drive & Xerox Centre (LOS F PM)
- Cabrillo Park Drive & First Street (LOS F PM)
- Tustin Avenue & Fourth Street (LOS F AM and PM)
- Tustin Avenue & First Street (LOS E PM)
- SR-55 southbound ramps & Irvine Boulevard (LOS F AM and PM)
- SR-55 northbound ramps & Irvine Boulevard (LOS F AM and PM)
- SR-55 northbound ramps & 17th Street (LOS F PM)

Future 2025 with Project

In 2025, when adding the project-related traffic, the following eight roadway segments are expected to operate at unacceptable LOS (LOS E/F) with the expected traffic levels and existing lane configurations:

- First Street between Grand Avenue and Lyon Street (LOS F)
- Lyon Street between First Street and Main Street (LOS F)
- Elk Lane between First Street and Main Street (LOS F)
- Cabrillo Park between Fourth Street and First Street (LOS F)
- Fourth Street between Golden Circle Drive and Tustin Avenue (LOS E)

- First Street between Golden Circle Drive and Tustin Avenue (LOS E)
- Grand Avenue between Fourth Street and First Street (LOS F)
- Grand Avenue between Santa Ana Boulevard and Fourth Street (LOS E)

The following 18 study intersections would operate at unacceptable LOS in either the AM or PM, or both.

- Main Street & First Street (LOS E PM)
- Standard Avenue & First Street (LOS F PM)
- Grand Avenue & Santa Ana Boulevard (LOS E PM)
- Grand Avenue & Fourth Street (LOS E AM and LOS F PM)
- Grand Avenue & First Street (LOS E AM and LOS F PM)
- Lyon Street & First Street (LOS F PM)
- Mabury Street & First Street (LOS F PM)
- Elk Lane & Chestnut Avenue (LOS F AM and PM)
- I-5 southbound on-ramp & First Street (LOS F PM)
- Cabrillo Park Drive & Parkcourt Place (LOS F AM and PM)
- Cabrillo Park Drive & Fourth Street (LOS F PM)
- Cabrillo Park Drive & Xerox Centre (LOS F PM)
- Cabrillo Park Drive & First Street (LOS F PM)
- Tustin Avenue & Fourth Street (LOS F AM and PM)
- Tustin Avenue & First Street (LOS E PM)
- SR-55 southbound ramps & Irvine Boulevard (LOS F AM and PM)
- SR-55 northbound ramps & Irvine Boulevard (LOS F AM and PM)
- SR-55 northbound ramps & 17th Street (LOS F AM and PM)

Future 2040 with Project

Traffic impacts would be significant if the project-related traffic would cause LOS to deteriorate to below the minimum acceptable level by a measurable amount. A cumulative impact may also be significant if the location is already below the minimum acceptable level or forecast without the project to be below the minimum acceptable level and project-related traffic causes a further decline.

The City of Santa Ana considers LOS D as the threshold for acceptable service for any intersections located outside of Major Development Areas (MDAs). The City considers LOS E as the maximum threshold for acceptable service levels for intersections located within an MDA. If the project contribution to the volume-to-capacity ratio at the intersection is greater than 0.01, and if the location is at an LOS E or poorer outside of an MDA or LOS F within an MDA, the impact is considered significant.

The City of Tustin has determined that LOS D is the minimum acceptable LOS for peak hour operation within the city. For locations where LOS is poorer than the acceptable LOS, and there is a project-related increase in intersection capacity utilization (ICU) greater than 0.01, mitigation of the project contribution to ICU is required to bring the intersection back to an acceptable LOS or to no-project conditions.

In the buildout year (2040), the LOS would remain acceptable for 37 of the 52 intersections. The proposed project would contribute to unacceptable LOS at the following intersections:

- Standard Avenue & First Street (PM peak hour)
- Grand Avenue & Santa Ana Boulevard (PM peak hour)
- Grand Avenue & Fourth Street (AM/PM peak hour)
- Grand Avenue & First Street (AM/PM peak hour)
- SR-55 southbound ramps & Irvine Boulevard (AM peak hour)
- Lyon Street & First Street (PM peak hour)
- Mabury Street & First Street (PM peak hour)
- I-5 northbound on-ramp & Fourth Street (PM peak hour)
- Tustin Avenue & Fourth Street (PM peak hour)
- SR-55 southbound ramps & Irvine Boulevard (PM peak hour)
- SR-55 northbound ramps & Irvine Boulevard (PM peak hour)
- Yorba Street & First Street (PM peak hour)
- B Street & First Street (PM peak hour)
- El Camino Real & First Street (PM peak hour)
- Prospect Avenue & First Street (PM peak hour)
- Newport Avenue & Irvine Boulevard (PM peak hour)
- Elk Lane & Chestnut Avenue (PM peak hour)

All study roadway segments are expected to operate at acceptable LOS under 2040 buildout with the exception of the following:

- Lyon Street between First Street and Main Street (LOS F)
- Elk Lane between First Street and Main Street (LOS F)
- Grand Avenue between Fourth Street and First Street (LOS E)

If these increases are found to occur on residential streets, mitigation in the form of neighborhood traffic management measures to discourage cut-through traffic and reduce speeds would be appropriate. Traffic increases along Grand Avenue between Fourth Street and First Street may require mitigation in the form of additional travel lanes and/or signage to distribute traffic along adjacent and neighboring streets to lessen the traffic impact along this segment of Grand Avenue.

Mitigation recommendations made in the prior study *Draft EIR Metro East Mixed Use Overlay Zone in the City of Santa Ana* were applied to the intersections requiring improvements to determine if the previous mitigation measures would be sufficient to improve the LOS to acceptable levels.

Additionally, alternative improvements were identified and analyzed to determine if they would sufficiently improve LOS to acceptable levels. The improvements required to mitigate the impacts are identified in mitigation measure **MM-TRA-1** below. The improvements are recommended for the following intersections that were either not studied or determined not affected under the prior study:

- Standard Avenue at First Street
- Grand Avenue at Santa Ana Boulevard
- Grand Avenue at Fourth Street
- Grand Avenue at First Street
- Lyon Street at First Street
- Elk Lane at Chestnut Avenue/Main Street
- Yorba Street at First Street
- El Camino Real at First Street
- Newport Avenue at Irvine Boulevard

The improvements recommended for the following intersections are different from that recommended under the prior study.

- Mabury Street/Elk Lane at First Street
- Tustin Avenue at Fourth Street
- SR-55 southbound ramp at Fourth Street
- SR-55 northbound ramps at Irvine Boulevard
- B Street at First Street
- Prospect Avenue at First Street

The City of Santa Ana will establish a fee program for the MEMU Overlay Zone. The purpose of this program will be to finance improvements to the local roadway network of streets that are needed to mitigate the impact of increased traffic that would result from new development in the MEMU Overlay Zone.

Mitigation measures **MM-OZ 4.12-1** through **MM-OZ 4.12-4** are still applicable to the proposed project. All the affected study intersections would operate at acceptable LOS values after recommended improvements are implemented. In addition to the improvements listed, signal timing optimization is recommended for all traffic signals in the study area. While implementation of all of the recommended improvements would result in acceptable LOS, some of the significantly affected intersections would be outside of the City's jurisdiction. Therefore, the City cannot ensure implementation of the suggested improvements and impacts are considered to be ***significant and unavoidable***.

These conclusions are consistent with those in the 2007 MEMU EIR, and therefore do not constitute new impacts that were not previously identified.

Threshold: Would the proposed project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Impact 4.8-2. Implementation of the proposed project would exceed standards established by the Orange County Transportation Authority within the Study Area.

The Orange County CMP is a state-mandated program intended to address the impact of local growth on the regional transportation system. The program requires that a traffic impact analysis be completed for CMP intersections where the proposed project will generate an impact of 50 or more trips during the AM or PM peak hour.

The following CMP intersections are within the study area:

- I-5 southbound on-ramp & First Street
- SR-55 southbound ramps & Irvine Boulevard
- SR-55 northbound ramps & Irvine Boulevard

As discussed above, the proposed project has been found to exceed standards established by OCTA for these CMP intersections.

Mitigation recommendations made in the prior study, *Draft EIR Metro East Mixed Use Overlay Zone in the City of Santa Ana*, were applied to the intersections requiring improvements to determine if the previous mitigation measures would be sufficient to improve the LOS to acceptable levels. Mitigation measures **MM-OZ 4.12-2** and **MM-OZ 4.12-4** are still applicable to the proposed project as they relate to the CMP facilities. Additionally, implementation of the improvements required to mitigate the impacts in mitigation measure **MM-TRA-1** related to these CMP intersections would apply.

All the affected study intersections would operate at acceptable LOS values after recommended improvements are implemented. In addition to the improvements listed, signal timing optimization is recommended for all traffic signals in the study area. While implementation of all of the recommended improvements would result in acceptable LOS, these CMP intersections would be outside of the City's jurisdiction and are the responsibility of the California Department of Transportation (Caltrans). Therefore, the City cannot ensure implementation of the suggested improvements and impacts are considered to be ***significant and unavoidable***.

Elan Project

Threshold: Would the proposed project cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?

Impact 4.8-E1. Implementation of the Elan Project would cause an increase in traffic that is substantial in relation to existing traffic load and capacity of the street system. Implementation of mitigation measures would reduce this impact to a *less-than-significant* level.

The proposed Elan Project is located along First Street between Lyon Street and Elk Lane. Parking would be provided on site in two underground parking lots with two access points from Elk Lane and two access points from Lyon Street. The Elan Project traffic study (Appendix G2) analyzed the forecasted traffic for the years 2020 and 2040 without and with the proposed project.

Project Trip Generation

The proposed Elan Project is forecast to generate approximately 4,648 net daily trips, with 312 net trips (70 inbound and 242 outbound) produced in the AM peak hour, and 428 net trips (266 inbound and 162 outbound) produced in the PM peak hour on a typical weekday. The trip generation accounts for a 5 percent reduction for internal trip capture, which assumes that some of the retail/commercial trips would come from the residents within the Elan Project.

Existing plus Project

The existing plus project traffic conditions have been generated based upon existing conditions and the estimated project traffic. The traffic associated with the proposed project is expected to significantly affect 2 of the 23 intersections when compared to the LOS standards and significant impact criteria as follows:

- Mabury Street/Elk Lane at First Street (LOS E PM)
- Elk Lane at Chestnut Avenue/Main Street (LOS F in AM and PM)

Implementation of recommended improvements identified in mitigation measure **MM-TRA-2** at these two locations would offset the impact of the Elan Project and improve the LOS to acceptable operating conditions.

Although the intersection of SR-55 southbound ramps at Fourth Street is forecast to operate at LOS E during the AM peak hour with the addition of Elan Project traffic, the Elan Project is expected to add less than 0.010 to the ICU value. The remaining 21 key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project-generated traffic. Therefore, these impacts are considered to be *less than significant*.

2020 Future Project Conditions

In 2020, the addition of background traffic and cumulative project traffic would adversely affect the following two intersections:

- SR-55 southbound ramps at Fourth Street (LOS F AM)
- Elk Lane at Chestnut Avenue/Main Street (LOS E AM and LOS F PM)

In 2020, when adding the Elan Project-related traffic to the background and cumulative project traffic, the following two intersections are expected to operate at unacceptable LOS:

- Mabury Street/Elk Lane at First Street (LOS E PM)

- Elk Lane at Chestnut Avenue/Main Street (LOS F in AM and PM)

Implementation of recommended improvements at these two locations as identified in mitigation measure **MM-TRA-2** would offset the impact of the Elan Project and improve the LOS to acceptable operating conditions.

Although the intersection of SR-55 southbound ramps at Fourth Street is forecast to operate at LOS F during the AM peak hour with the addition of Elan Project traffic, the Elan Project is expected to add less than 0.010 to the ICU value. The remaining 21 key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project-generated traffic. Therefore, these impacts are considered to be *less than significant*.

2040 Future Project Conditions

In 2040, the addition of background traffic and cumulative project traffic would adversely affect the following 11 intersections:

- I-5 northbound ramps at Fourth Street (LOS F PM)
- Cabrillo Park Drive at Fourth Street (LOS F PM)
- Tustin Avenue at Fourth Street (LOS F PM)
- SR-55 southbound ramps at Fourth Street (LOS F AM and PM)
- SR-55 northbound ramps at Fourth St/Irvine Blvd (LOS E AM and LOS F PM)
- Grand Avenue at First Street (LOS E AM and LOS E PM)
- Lyon Street at First Street (LOS E PM)
- Mabury Street/Elk Lane at First Street (LOS F PM)
- Grand Avenue at Chestnut Avenue (LOS E AM)
- Lyon Street at Chestnut Avenue (LOS F PM)
- Elk Lane at Chestnut Avenue/Main Street (LOS F AM and PM)

In 2040, when adding the Elan Project-related traffic to the background and cumulative project traffic, the following six intersections are expected to experience a significant impact when compared to LOS standards and significance criteria:

- I-5 northbound ramps at Fourth Street (LOS F PM)
- SR-55 northbound ramps at Fourth St/Irvine Blvd (LOS E AM and LOS F PM)
- Lyon Street at First Street (LOS E PM)
- Mabury Street/Elk Lane at First Street (LOS E AM and LOS F PM)
- Cabrillo Park Drive at First Street (LOS F PM)
- Elk Lane at Chestnut Avenue/Main Street (LOS F AM and PM)

Implementation of recommended improvements at these six locations, as identified in mitigation measure **MM-TRA-2**, would offset the impact of the Elan Project and improve the LOS to acceptable operating conditions.

Although the intersections of Cabrillo Park Drive at Fourth Street, Tustin Avenue at Fourth Street, SR-55 southbound ramps at Fourth Street, Grand Avenue at First Street, Grand Avenue at Chestnut Avenue, and Lyon Street at Chestnut Avenue are forecast to operate at unacceptable LOS during the AM and/or PM peak hours with the addition of Elan Project traffic, the Elan Project is expected to add less than 0.010 to the ICU value. The remaining 11 key study intersections are forecast to operate at an acceptable LOS during the AM and PM peak hours in the Year 2040 with the Elan Project. Therefore, these impacts are considered to be ***less than significant***.

Traffic Signal Warrant Analysis

The LOS analysis at the unsignalized intersection of Elk Lane at Chestnut Avenue/Main Street is supplemented with an assessment of the need for signalization of the intersection. The assessment indicates that a traffic signal is warranted at Elk Lane at Chestnut Avenue/Main Street based on the volumes for Existing Traffic Conditions, 2020 Traffic Conditions, and 2040 Traffic Conditions without and with the Elan Project. Therefore, the installation of a traffic signal is justified and recommended at this location. Therefore, these impacts are considered to be ***less than significant***.

State of California (Caltrans) Methodology

In conformance with the current Caltrans *Guide for the Preparation of Traffic Impact Studies*, existing and projected AM and PM peak hour operating conditions at the five state-controlled study intersections within the study area have been evaluated using the *Highway Capacity Manual 6th Edition* operations method of analysis. These state-controlled locations include the following intersections:

- I-5 southbound off-ramp/Mabury St at Fourth Street
- SR-55 northbound ramps at Fourth St/Irvine Blvd
- I-5 northbound ramps at Fourth Street
- I-5 southbound on-ramp at First Street
- SR-55 ramps at Fourth Street

Caltrans “endeavors to maintain a target LOS at the transition between LOS ‘C’ and LOS ‘D’ on State highway facilities”; it does not require that LOS D be maintained. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. For this analysis, LOS D is the target LOS standard and will be utilized to assess the Elan Project impacts at the state-controlled study intersections.

Existing and Existing Plus Project Traffic Conditions

The existing peak hour LOS results indicate that all five state-controlled study intersections currently operate an acceptable LOS D or better during the AM and PM peak hours. Additionally, the analysis shows that traffic associated with the Elan Project would not significantly affect any of the five state-controlled study intersections. Therefore, these impacts are considered to be ***less than significant***.

Year 2020 Cumulative and Cumulative plus Project Traffic Conditions

An analysis of Year 2020 cumulative traffic conditions indicates that with the addition of ambient traffic growth and related projects traffic, all five state-controlled study intersections would

continue to operate an acceptable LOS D or better during the AM and PM peak hours. Results of the analysis also show that traffic associated with the Elan Project would not significantly affect any of the five intersections. Therefore, these impacts are considered to be ***less than significant***.

Year 2040 Cumulative and Cumulative plus Project Traffic Conditions

The projected traffic in Year 2040 without Elan Project traffic is expected to adversely affect two of the five state-controlled study intersections. Similarly, with the addition of Elan Project traffic, the same two intersections would be affected, as follows:

- SR-55 southbound ramps at Fourth Street (LOS F AM and PM)
- SR-55 northbound ramps at Fourth St/Irvine Blvd (LOS E AM and LOS F PM)

The remaining three intersections are forecast to continue to operate at LOS D or better with the addition of Elan Project-generated traffic in the Year 2040. Implementation of recommended improvements, as identified in mitigation measure **MM-TRA-2**, at these three intersections would result in acceptable LOS. Therefore, these impacts are considered to be ***less than significant***.

Roadway Segment Evaluation

A total of 12 key roadway segments within the city of Santa Ana and the city of Tustin have been selected for evaluation, as follows:

- Fourth Street, between I-5 northbound ramps and Cabrillo Park Drive (Santa Ana)
- Fourth Street, between Cabrillo Park Drive and Golden Circle Drive (Santa Ana)
- Cabrillo Park Drive, between First Street and Fourth Street (Santa Ana)
- Tustin Avenue, between First Street and Fourth Street (Santa Ana)
- First Street, between McClay Street and Wright Street (Santa Ana)
- First Street, between I-5 southbound on-ramp and Cabrillo Park Drive (Santa Ana)
- First Street, between Cabrillo Park Drive and Golden Circle Drive (Santa Ana)
- Lyon Street, between First Street and Chestnut Avenue (Santa Ana)
- Elk Lane, between First Street and Chestnut Avenue (Santa Ana)
- Chestnut Avenue, between Grand Avenue and Lyon Street (Santa Ana)
- Main Street, east of Williams Street (Tustin)
- Lyon Street, south of Chestnut Avenue (Santa Ana)

Under existing conditions, the Elan Project would have a significant impact at the one key roadway segment—Lyon Street between First Street and Chestnut Avenue—when compared to the LOS standards and significant impact criteria specified in this report.

When adding in cumulative projects and background growth to 2020, the same roadway segment would experience a significant impact. However, a peak hour roadway assessment forecasts this segment to operate at LOS A or better during the AM and PM peak hours for both existing conditions and Year 2020 conditions. As a result, the key study roadway segment would not be significantly affected by Elan Project traffic and therefore no improvements are required. Therefore, these impacts are considered to be ***less than significant***.

By Year 2040, the Elan Project is expected to result in impacts on the following two roadway segments:

- Lyon Street between First Street and Chestnut Avenue
- Elk Lane between First Street and Chestnut Avenue

However, a peak hour roadway assessment forecasts these segments to operate at LOS B or better during the AM and PM peak hours. As a result, the key study roadway segments would not be significantly affected by Elan Project traffic and therefore no improvements are required. Therefore, these impacts are considered to be *less than significant*.

Site Access and Queuing Assessment

A queuing analysis was conducted for the intersections of Lyon Street at First Street, Mabury Street/Elk Lane at First Street, Lyon Street at Chestnut Avenue, and Elk Lane at Chestnut Avenue/Main Street with a focus to identifying potential operational and/or capacity-enhancing improvements to accommodate existing and future vehicular queues. Review of the queuing analysis identifies that the improvements identified in mitigation measure **MM-TRA-1** below would either offset the Elan Project contribution and/or minimize/eliminate any queuing shortfall. Per City requirements, the Elan Project may be expected to pay a fair-share/local fee to cover the project's fair share of the full construction costs needed to implement these mitigation measures.

The four proposed Elan Project driveways on Lyon Street and Elk Lane are forecast to operate at acceptable LOS C or better during the AM and PM peak hours for near-term (Year 2020) and long-term (Year 2040) traffic conditions. Motorists entering and exiting the Elan Project site would be able to do so comfortably, safely, and without undue congestion. Therefore, these impacts are considered to be *less than significant*.

Threshold: Would the proposed project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Impact 4.8-E2. Implementation of the proposed Elan project would not exceed standards established by the Orange County Transportation Authority within the Study Area.

The Orange County CMP requires that a traffic impact analysis be conducted for any project generating 2,400 or more daily trips, or 1,600 or more daily trips for projects that directly access the CMP Highway System. As noted, the Elan Project is forecast to generate approximately 4,464 daily trip-ends and thus meets the criteria requiring a CMP traffic impact analysis. The CMP Highway System includes specific roadways, which include State Highways and Super Streets, which are now known as Smart Streets. Therefore, the CMP traffic impact analysis requirements relate to the potential impacts only on the specified CMP Highway System, which in this case includes First Street west of the I-5 southbound on-ramp. The study area is recommended to be defined by the CMP links that have a project impact of 3 percent, or more, of their daily LOS E capacity. The 3 percent limit is exceeded at the intersection of I-5 southbound on-ramps at First Street, thus requiring a CMP analysis. The LOS results and project impacts at the CMP intersection indicate that the Elan Project

would not have a significant impact at this location. Impacts are therefore considered *less than significant* for CMP facilities.

Mitigation Measures Applicable to the Proposed Project

Applicable Mitigation Measures from the MEMU EIR

Implementation of mitigation measures **MM-OZ 4.12-1** through **MM-OZ 4.12-4** from the MEMU EIR would apply to projects proposed in the MEMU Overlay Zone expansion area.

MM-OZ 4.12-1 As part of the project, the City of Santa Ana and the project sponsors shall work with the transit providers to implement various transit-related measures to improve and expand bus system service within the Overlay Zone. These measures may include, but are not limited to, the following:

- Adding bus stops to the Overlay Zone along existing and proposed roadways
- Changing bus service headways to respond to increased demand
- Changing bus service destinations to respond to changing demand
- Adding local shuttle service for employees and patrons of the Overlay Zone

The details of bus service improvements shall be determined in coordination with OCTA. The following recommendations would help encourage public transit patronage for project related trips:

- **Bus Stop Locations** – Relocation of existing bus stops and the provision of additional bus stops should be considered to accommodate transit users at convenient locations.
- **Days of Operation** – The City should work with OCTA to consider changes to route lines to serve nighttime and weekend project visitors and employees.
- **Headway** – The City should work with OCTA to review route headways to determine if it would be appropriate to reduce them to accommodate transit riders within the Overlay Zone.

MM-OZ 4.12-2 Future development within the proposed Overlay Zone shall prepare separate traffic studies specific to the individual projects that are proposed. The traffic studies for future projects shall be prepared by a qualified traffic engineer of the City's choosing. Further, and as determined by the traffic studies, the above identified improvement measures shall be implemented as a condition of the proposed development, either through the direction construction of improvements by the project applicant or through payment of a fee, as required by the program detailed in MM-OZ 4.12-4.

MM-OZ 4.12-3 The City of Santa Ana Planning Department, in cooperation with the Department of Public Works, shall monitor the traffic signals within the Overlay Zone Study Area once every five years to ensure that traffic signal timing is optimized.

MM-OZ 4.12-4 The City of Santa Ana shall institute a program for systematic mitigation of impacts as development proceeds within the Overlay Zone to ensure mitigation

of the individual improvements. The program shall prescribe the method of participation in the mitigation program by individual projects and guide the timely implementation of the mitigation measures. The program should include the following elements:

- A funding and improvement program should be established to identify financial resources adequate to construct all identified mitigation measures in a timely basis.
- The program should allow for acquisition of entire properties including business relocation where necessary to construct mitigation measures. Funds derived from sale of surplus acquired properties should be returned to the program.
- All properties that redevelop within the Overlay Zone should participate in the program on a fair share per new development trip basis. The fair share should be based upon the total cost of all identified mitigation measures, divided by the peak hour trip generation increase forecast. This rate peak hour trip should be imposed upon the incremental traffic growth for any new development within the Overlay Zone.
- The program shall include resources to conduct preliminary engineering studies to complete alignment studies and project specific environmental clearances for Tustin Avenue at Seventeenth Street and at Fourth Street.
- The program should raise funds from full development of the Overlay Zone to fund all identified mitigation measures.
- The program should monitor phasing development of the Overlay Zone and defer or eliminate improvements if the densities permitted in the Overlay Zone are not occurring.
- Program phasing should be monitored through preparation of a specific project traffic impact studies for any project that is expected to include more than 100 dwelling units or 100,000 square feet of non-residential development. Traffic impact studies should use traffic generation rates that are deemed to be most appropriate for the actual development proposed.
- The program should initiate project development to assure timely completion of the improvements identified to be needed for the First and Cabrillo Towers project by 2010 or as soon after as practically feasible.
- Properties within Santa Ana and within one-half mile of the Overlay Zone that redevelop to result in higher traffic generation should also participate in the program to insure equity.
- The program should provide for full construction of projects outside of Santa Ana, if the Overlay Zone will create a traffic impacted based upon the CMP.
- The program should provide fair share contribution to construction costs of other improvements outside of the Overlay Zone if they are identified in this traffic study but they are not impacted as defined by the CMP.

- The fair share contribution would presume participation by other developments outside of the City of Santa Ana (generally within the City of Tustin) in proportion to traffic growth at the affected sites.
- Traffic impact studies for future projects shall be prepared by a qualified traffic engineer approved or retained by the City.
- The City may elect to implement appropriate mitigation measures as a condition of approval of the proposed developments, where appropriate. All or part of the costs of these improvements may be considered to be a negotiated credit toward the program, however the program must be administered in a manner that assures that it can fund necessary improvements to maintain adequate level of service at all intersections within this study. If funding of priority improvements cannot be assured, credit for construction of lower priority improvements may not be assured or may be postponed until more program funds are available.
- Traffic studies for future developments within the Overlay Zone must also use trip generation rates which are specific for these projects and are approved by the City. The traffic consultant preparing traffic studies for specific projects in the Overlay Zone must use City-approved trip generation rates specific to these projects. These studies are subject to City review.

New Mitigation Measures Required for the MEMU Overlay Zone Expansion Area

Implementation of the newly developed mitigation measure **MM-TRA-1** would apply to projects proposed in the MEMU Overlay Zone expansion area.

MM-TRA-1

The following improvements shall be installed prior to 2040, as the projected facilities are forecasted to be affected. Timing and funding of these improvements shall be based on a program as outlined in mitigation measure MM-OZ 4.12-4 above (and included in the original MEMU EIR).

- **Standard Avenue & First Street** – widen northbound approach and reconfigure to provide one left-turn lane, two through lanes, and one right-turn lane, and widen the southbound approach and reconfigure to provide one left-turn lane and one shared through and right-turn lane, along with two receiving lanes that merge back to one lane.
- **Grand Avenue & Santa Ana Boulevard** – convert westbound shared through and right-turn lane to a right-turn only lane and include an overlap right-turn phasing by prohibiting the southbound U-turn movement.
- **Grand Avenue & Fourth Street** – widen northbound approach to include an additional through lane and provide an additional receiving lane on the north leg of the intersection. Convert eastbound shared through and right-turn lane to a through lane and construct a right-turn lane.
- **Grand Avenue & First Street** – widen northbound approach to provide two left-turn lanes, three through lanes, and one right-turn lane. Widen westbound approach to provide two left-turn lanes, three through lanes,

and one right-turn lane by extending the current right-turn pocket and providing a westbound right-turn overlap signal phasing.

- **Lyon Street & First Street** – widen northbound approach to provide one left-turn lane, one shared through and left-turn lane, and one right-turn lane with a right-turn signal overlap phasing and split signal phasing for the north-south approaches. Widen eastbound approach to convert the shared through and right-turn lane into a third through lane and construct a new right-turn lane.
- **Mabury Street/Elk Lane & First Street** – widen northbound approach to provide a second right-turn lane, widen the southbound approach to provide a second southbound right-turn lane, and widen the eastbound approach to construct a dedicated eastbound right-turn lane.
- **Elk Lane at Chestnut Avenue/Main Street** – converted to a signalized intersection.
- **Tustin Avenue at Fourth Street** – widen northbound approach to construct a dedicated northbound right-turn lane with a right-turn overlap signal phasing and prohibit the westbound U-turn movement.
- **SR-55 southbound ramp at Fourth Street** – construct an eastbound free right-turn lane. Right-of-way is required for the construction of the eastbound free right-turn lane. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans.
- **SR-55 northbound ramps at Irvine Boulevard** – restripe eastbound approach to provide two left-turn lanes and two through lanes. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans.
- **Yorba Street at First Street** – reinstate the westbound through lane that is planned to be removed to provide the one through lane and one shared through and right-turn lane in the westbound approach as existing conditions. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans.
- **B Street at First Street** – reinstate the westbound through lane that is planned to be removed to provide the one through lane and one shared through and right-turn lane in the westbound approach as existing conditions. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans.
- **El Camino Real at First Street** – restripe the northbound right-turn lane to a shared left- and right-turn lane and change the northbound/southbound signal phasing from permitted to split phasing. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans.
- **Prospect Avenue at First Street** – reinstate the westbound through lane that is planned to be removed to provide the one through lane and one shared through and right-turn lane in the westbound approach as existing

conditions. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans.

- **Newport Avenue at Irvine Boulevard** – convert the northbound right-turn lane signal phasing to an overlap signal phasing and prohibit the westbound U-turn movement. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans.

New Mitigation Measures Required for the Elan Project

Implementation of the newly developed mitigation measure **MM-TRA-2** would only apply to the Elan Project.

MM-TRA-2

Prior to project occupancy, the applicant shall construct the improvements listed below or pay a fair-share/local fee to cover the Elan Project's fair share of the full construction costs needed to implement these mitigation measures. These mitigation shall be installed prior to 2040, as the projected facilities are forecasted to be affected.

- **I-5 northbound ramps at Fourth Street:** Widen and/or restripe Fourth Street to provide a second exclusive westbound right-turn lane. Modify the existing traffic signal for signing and striping improvements accordingly. This improvement is subject to the review and approval of Caltrans.
- **SR-55 northbound ramps at Fourth Street:** Widen and/or restripe Fourth Street to provide an exclusive westbound (free) right-turn lane. Restripe to convert the third eastbound through lane to a second eastbound left-turn lane. Modify the existing traffic signal for signing and striping improvements accordingly. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans.
- **SR-55 northbound ramps at Fourth Street/Irvine Boulevard:** Widen and/or restripe the westbound approach on Fourth Street to provide an exclusive (free) right-turn lane. Modify existing traffic signal as well as existing signing and striping improvements accordingly. This improvement is subject to the review and approval of the City of Tustin and/or Caltrans.
- **Lyon Street at First Street:** Widen Lyon Street to provide an exclusive northbound left-turn lane. Widen and/or restripe First Street to provide an exclusive eastbound right-turn lane. Modify the existing traffic signal for split signal phasing for the northbound and southbound approaches and provide northbound right-turn overlap phasing. Remove west leg crosswalk. Modify the existing signing and striping improvements accordingly.
- **Mabury Street/Elk Lane at First Street:** Widen and/or restripe Elk Lane to provide a second exclusive northbound right-turn lane. Widen and/or restripe First Street to provide an exclusive eastbound right-turn lane. Modify the existing traffic signal for northbound right-turn overlap phasing and existing signing and striping improvements accordingly.

- **Cabrillo Park Drive at First Street:** Restripe First Street to convert the second eastbound through lane to a second eastbound left-turn lane. Modify the existing traffic signal for signing and striping improvements accordingly.
- **Elk Lane at Chestnut Avenue/Main Street:** Install a traffic signal and design for three-phase operations. Widen and/or restripe Main Street to provide an exclusive westbound right-turn lane. Modify existing signing and striping improvements.

4.9 Tribal Cultural Resources

This section evaluates potential tribal cultural resources impacts associated with construction and operation of the proposed project. This section also evaluates the potential for impacts involving tribal cultural resources. Mitigation measures and standard conditions necessary to reduce impacts are identified where applicable. As of the publication of this Draft SEIR, responses from interested tribes are pending, and any results will be incorporated into the Final SEIR, as applicable.

Summary of MEMU EIR Findings

The certified MEMU EIR did not analyze impacts on tribal cultural resources because this resource type was not identified in CEQA Appendix G as a resource category until July 2015. However, because some archaeological resources may be considered tribal cultural resources, and Native American human remains may also be considered a tribal cultural resource, the certified MEMU EIR impacts on archaeological resources and human remains are summarized here. The MEMU EIR found that that implementation of the MEMU Overlay Zone had the potential to result in impacts on archaeological resources and human remains.

The certified MEMU EIR found the following cultural resources impacts to be less than significant after implementation of mitigation:

- Redevelopment within the MEMU Overlay Zone has the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.05 of the State CEQA Guidelines, and this would be considered a significant impact. Mitigation measure **MM-OZ 4.4-2** states that, as a result of a lack of cultural resource studies for the MEMU Overlay Zone, and in order to avoid damaging any unidentified cultural resources, a qualified archaeologist should be retained to monitor any significant ground-disturbing activities in undeveloped areas within the MEMU Overlay Zone, and any deep (10 inches or deeper) ground-disturbing activities in all areas of the MEMU Overlay Zone. As stipulated in mitigation measure **MM-OZ 4.4-3**, in the event that archaeological resources are unearthed during project subsurface activities, all earth-disturbing work within a 100-meter radius must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find. After the find has been appropriately mitigated, work in the area may resume.
- Implementation of the MEMU Overlay Zone could involve project-level construction activities with potential to result in the disturbance of human remains interred outside of formal cemeteries. Mitigation measure **MM-OZ 4.4-5** states that if human remains are unearthed, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). NAHC will then contact the most likely descendant of the deceased Native American, who will then serve as consultant on how to proceed with the remains.

Impacts of Proposed Project

The following significance criteria are based on State CEQA Guidelines Appendix G, and provide the basis for determining the significance of impacts on tribal cultural resources resulting from implementation of the proposed project. The proposed project would have a significant impact on tribal cultural resources if it would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section (PRC) 21074 as a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- i. Listed or eligible for listing in the California Register of Historical Resources (CRHR), or in a local register of historical resources as defined in PRC Section 5020.1(k); or
- ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

MEMU Overlay Zone Expansion Area

Threshold: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- i. Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k)

Impact 4.9-1: Implementation of the proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource listed in or eligible for listing in the CRHR, or in a local register.

A records search at the South Central Coastal Information Center was conducted for the proposed project to determine if tribal cultural resources are present within the project site. No tribal cultural resources that are listed in or eligible for listing in the CRHR were identified during the records search. Additionally, a Sacred Lands File Search of the project area was obtained from NAHC. No Sacred Lands were identified by NAHC. Therefore, the proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource listed in or eligible for listing in the CRHR, or in a local register, and ***no impacts*** would occur.

Threshold: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Impact 4.9-2: Implementation of the proposed project could encounter significant tribal cultural resources during construction.

Pursuant to PRC Section 21080.3.1 (Assembly Bill 52), California Native American tribes traditionally and culturally affiliated with the project area can request notification of projects in their traditional cultural territory.

Due to the developed nature of the project site and the surrounding area, and absence of tribal cultural resources identified during consultation in the project area, it is less likely that significant tribal cultural resources would be encountered during construction of the proposed project. However, any tribal cultural resource unexpectedly discovered during construction would be evaluated and protected with mitigation measures **MM-OZ 4.4-2, 4.4-3, and 4.4-5** from the MEMU EIR as well as **MM-TCR-1**, in compliance with State CEQA Guidelines Section 15064.5(f). Mitigation measure **MM-TCR-1** is a new mitigation measure developed to address potential impacts on tribal cultural resources from project-level construction associated with expansion of the MEMU Overlay Zone. Culturally appropriate mitigation for a tribal cultural resource is different than mitigation for archeological resources and appropriate mitigation measures should be identified through consultation with a tribal government. However, no tribes requested consultation for the proposed project, and no tribal cultural resources were identified in the proposed project area. In the event that a tribal cultural resource is unexpectedly identified during the course of a future development project, and the City determines that the project may cause a substantial adverse change to a tribal cultural resource, the City will rely on standard mitigation measures described in the PRC that, if the City determines to be feasible, may avoid or minimize the significant adverse impacts (PRC Section 21084.3(b)). Therefore, impacts would be *less than significant*.

Elan Project

Threshold: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- i. Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k).

Impact 4.9-E1: Implementation of the Elan Project would not cause a substantial adverse change in the significance of a tribal cultural resource listed in or eligible for listing in the CRHR, or in a local register.

A records search at the South Central Coastal Information Center was conducted for the proposed project to determine if tribal cultural resources are present within the project site. No tribal cultural resources that are listed in or eligible for listing in the CRHR were identified during the records search. Additionally, a Sacred Lands File Search of the project area was obtained from NAHC. No Sacred Lands were identified by NAHC. Therefore, the Elan Project would not cause a substantial adverse change in the significance of a tribal cultural resource listed in or eligible for listing in the CRHR, or in a local register, and ***no impacts*** would occur.

Threshold: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Impact 4.9-E2: Implementation of the Elan Project could encounter significant tribal cultural resources during construction.

Pursuant to PRC Section 21080.3.1 (Assembly Bill 52), California Native American tribes traditionally and culturally affiliated with the project area can request notification of projects in their traditional cultural territory.

Due to the developed nature of the project site and the surrounding area, and absence of tribal cultural resources identified during consultation in the project area, it is less likely that significant tribal cultural resources would be encountered during construction of the Elan Project. However, any tribal cultural resource unexpectedly discovered during construction would be evaluated and protected with mitigation measures **MM-OZ 4.4-2**, **4.4-3**, and **4.4-5** from the MEMU EIR as well as **MM-TCR-1**, in compliance with State CEQA Guidelines Section 15064.5(f). Therefore, impacts would be ***less than significant***.

Mitigation Measures Applicable to the Proposed Project

Applicable Mitigation Measures from the MEMU EIR

It is possible that some archaeological sites may be considered tribal cultural resources, and Native American human remains may be considered tribal cultural resources. Implementation of mitigation measures **MM-OZ 4.4-2**, **4.4-3**, and **4.4-5** would apply to projects proposed in the MEMU Overlay Zone expansion area, including the Elan Project.

- MM-OZ 4.4-2** Due to the lack of cultural resource studies for the Overlay Zone Expansion Area, and in order to avoid damaging any unidentified cultural resources, a qualified

archaeologist would be retained to monitor any significant ground-disturbing activities in undeveloped areas within the Expansion Area, and any deep (10" or deeper) ground-disturbing activities in all areas of the Expansion Area.

MM-OZ 4.4-3 In the event that archaeological resources are unearthed during project subsurface activities, all earth-disturbing work within a 100-meter radius must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find. After the find has been appropriately mitigated, work in the area may resume.

MM-OZ 4.4-5 If human remains are unearthed, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC will then contact the most likely descendant of the deceased Native American, who will then serve as consultant on how to proceed with the remains.

New Mitigation Measures Required for the MEMU Overlay Zone Expansion Area and the Elan Project

MM-TCR-1 In the event that a tribal cultural resource is unexpectedly identified during the course of a proposed project, and the City determines that the project may cause a substantial adverse change to a tribal cultural resource, the City will employ one or more of the following standard mitigation measures:

1. Avoidance and preservation of the resource in place, including, but not limited to, planning and construction to avoid the resource and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resource with culturally appropriate protection and management criteria.
2. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - a. Protecting the cultural character and integrity of the resource
 - b. Protecting the traditional use of the resource
 - c. Protecting the confidentiality of the resource
3. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places protecting the resource.
4. Protecting the resource.

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5.1 Cumulative Development Scenario

Cumulative impacts are the anticipated impacts of the proposed project in combination with the impacts of related cumulative development. As stated in Section 15130(b)(1) of the State CEQA Guidelines, this reasonably foreseeable growth may be based on either of the following, or a combination thereof:

- A list of past, present, and probable future project producing related or cumulative impacts, or
- A summary of projections contained in an adopted general plan or related planning document that describe or evaluate regional or area-wide conditions.

For the purposes of this Subsequent EIR, the potential cumulative effects of the proposed project are based on a list of projects identified by the City and neighboring jurisdictions, as well as build-out of the General Plan or other criteria, depending upon the specific impact being analyzed. The list of related projects within the vicinity of the proposed project is provided in Table 5-1. Figure 5-1 illustrates the locations of the related projects within and adjacent to the MEMU Overlay Zone expansion area.

Table 5-1. Location and Description of Cumulative Projects

No.	Cumulative Project	Location/Address	Description
<i>City of Santa Ana Development</i>			
1.	Hampton Inn Hotel	2119–2129 N. Main Street	Hampton Inn Hotel, demo office building, demo single-family dwelling (SFD), relocate SFD to 2125 North Main Street change to commercial, SFD/office change to commercial
2.	One Broadway Plaza	1109 N. Broadway	Office tower and restaurant
3.	888 Adaptive Reuse	888 N. Main Street	Convert office to mixed-use/residential
4.	Artist Gateway	117 S. Sycamore Street	14 dwelling units (DU) live/work
5.	Lotus Townhomes	627 E. Washington Avenue	8 DU townhomes
6.	Depot at Santiago	923 N. Santiago Street	Commercial and residential apartments
7.	Tom's Trucks Residential Development	1008 E. Fourth Street	Single-family residence
8.	Kiddie Academy of Santa Ana	1345 N. Grand Avenue	Child care/school
9.	Target Shopping Center Commercial Pads	1330 E. Seventeenth Street	Two commercial buildings
10.	Ednovate Public School	1450 E. Seventeenth Street	School

No.	Cumulative Project	Location/Address	Description
11.	Sexlinger Homes and Orchard	1584 E. Santa Clara Avenue	24 DU single-family detached
12.	Rocket Express Car Wash	1703 E. Seventeenth Street	4,995 sf car wash, 20,146 sf existing commercial demolition
13.	AMCAL First Street Family Apartments	1440 E. First Street	Residential apartments
14.	Holiday Inn Express	1600 E. First Street	Renovation of existing hotel
15.	The Madison	200 N. Cabrillo Park Drive	Mixed-use commercial/residential
16.	First Street Care Home	2151 E. First Street	Convert 75-room motel to 72 DU supportive housing apartments
17.	AMG East First Senior Apartments	2222 E. First Street	Residential senior housing
18.	Calvary Church Master Plan	1010 N. Tustin Avenue	Master plan to modify center, classrooms, and office
19.	Russell Fischer Commercial	301 and 325 N. Tustin Avenue	Commercial building, demo carwash, commercial building, demo restaurant
20.	East First Street Apartments	2110 & 2114 E. First Street	Commercial and residential apartments
21.	Elk's Lodge	1701 E. Street Andrew Place	Commercial/lodge
City of Tustin Development			
22.	New Office Building	721 W. First Street	7,200 sf office
23.	Habitat for Humanity	140 S. A Street	2 DU condominiums
24.	Intracorp So Cal-1	420 W. Sixth Street	140 DU single-family attached
25.	Restaurant	14232 Newport Avenue	1,800 sf fast-food restaurant w/ drive-thru
26.	4 Unit Condominium Complex	1051 Bonita Street	4 DU condominiums
27.	5 Detached Residential Condos	1381-1391 San Juan Street	5 DU condominiums
28.	Tustin Red Mill Mixed-Use	13751-13841 Red Hill Avenue	201 DU apartments, 3,000 sf health club, 10,000 sf general office, 4,000 sf shopping center, 3,000 sf high-turnover restaurant
29.	Grace Harbor Church	12881 Newport Avenue	10,015 sf two-story classroom
30.	Downtown Commercial Core Specific Plan	Generally, bound by Interstate 5 to the south, State Route 55 to the west, First Street to the north, and Newport Avenue to the east.	220-acre Specific Plan area

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- Project Name**
1. Hampton Inn Hotel
 2. One Broadway Plaza
 3. 888 Adaptive Reuse
 4. Artist Gateway
 5. Lotus Townhomes
 6. Depot at Santiago
 7. Tom's Trucks Residential Development
 8. Kiddie Academy of Santa Ana
 9. Target Shopping Center Commercial Pads
 10. Ednovate Public School
 11. Sexlinger Homes and Orchard
 12. Rocket Express Car Wash
 13. AMCAL First Street Family Apartments
 14. Holiday Inn Express
 15. The Madison
 16. First Street Care Home
 17. AMG East First Senior Apartments
 18. Calvary Church Master Plan
 19. Russell Fischer Commercial
 20. East First Street Apartments
 21. Elk's Lodge
 22. New Office Building
 23. Habitat for Humanity
 24. Intracorp So Cal-1
 25. Restaurant
 26. 4 Unit Condominium Complex
 27. 5 Detached Residential Condos
 28. Tustin Red Hill Mixed-Use
 29. Grace Harbor Church
 30. Downtown Commerical Core Specific Plan

Legend

- Proposed Expansion Area
- Existing MEMU Overlay Zone Boundary
- Elan Project

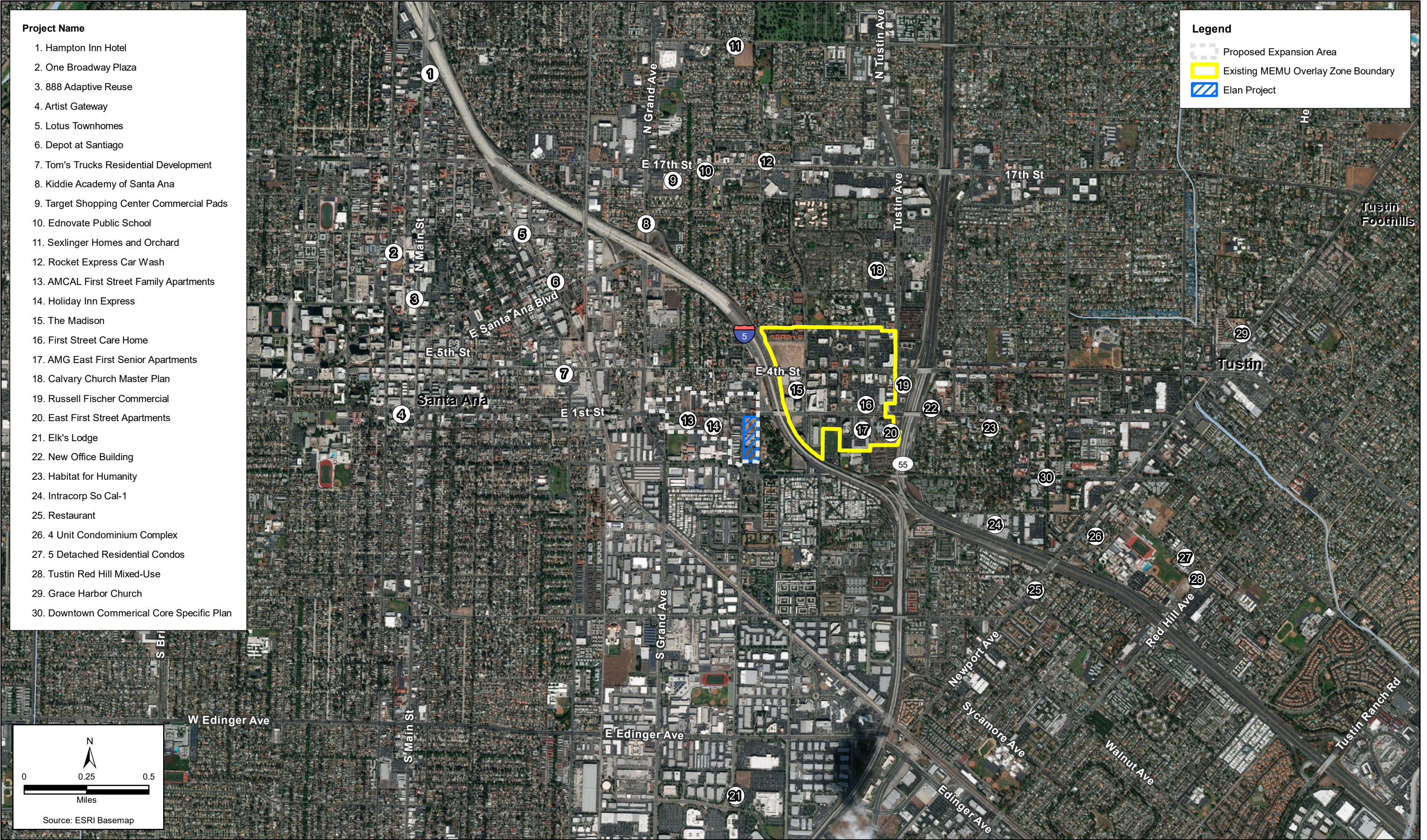
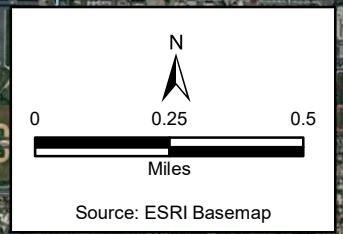


Figure 5-1
Cumulative Projects
Metro East Mixed-Use Overlay Zone Expansion Subsequent EIR

5.2 Air Quality

Because both the expansion of the MEMU Overlay Zone and the Elan Project would exist under cumulative conditions, both are considered together in the following discussion of potential cumulative impacts. The geographic context of cumulative air quality impacts for the proposed project is the same as that analyzed in the certified MEMU EIR, which is SRA 17 of the South Coast Air Basin (SCAB), which covers Central Orange County.

Air Quality Management Plan

The certified MEMU EIR determined that buildout of the MEMU Overlay Zone in combination with cumulative development projects would not result in a significant impact in terms of conflicting with, or obstructing implementation of, the Air Quality Management Plan (AQMP). As growth under the MEMU Overlay Zone would be considered consistent with the growth assumptions of the City of Santa Ana General Plan, it was determined that development in the MEMU Overlay Zone would also be consistent with the AQMP. Consequently, the cumulative impact of the original MEMU Overlay Zone project regarding potential conflicts with the AQMP would not be cumulatively considerable and would be considered *less than significant*.

Despite expansion of the existing MEMU Overlay Zone boundaries to add an additional 33.52 acres to the project area, the development capacity under the proposed project, which includes the Elan Project, would remain the same as what was analyzed in the certified MEMU EIR. Implementation of the proposed project would not affect the original development capacity of the original MEMU Overlay Zone, and the cumulative impacts analysis conducted in the MEMU EIR would not change. Therefore, the cumulative impact of the proposed project regarding potential conflicts with the AQMP would not be cumulatively considerable and would remain *less than significant*.

Air Quality Standard Violations

The certified MEMU EIR determined that the construction and operational activities associated with buildout of the MEMU Overlay Zone in combination with cumulative development projects would cause a cumulatively considerable increase in emissions for those pollutants for which the SCAB is in nonattainment. With regard to determining the significance of a project's emissions contribution to cumulative impacts, the South Coast Air Quality Management District (SCAQMD) neither recommends quantified analyses of cumulative construction or operational emissions, nor provides separate methodologies or thresholds of significance to be used to assess cumulative construction or operational impacts. Instead, the SCAQMD recommends that a project's potential contribution to cumulative impacts should be assessed using the same significance criteria as those for project-specific impacts; that is, individual development projects that generate construction-related or operational emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the SCAB is in nonattainment. Because construction and operational emissions associated with the original MEMU Overlay Zone would exceed SCAQMD's thresholds for those pollutants for which the SCAB is in nonattainment, the cumulative impact of the original MEMU Overlay Zone would be *significant and unavoidable*.

Because buildout of the MEMU Overlay Zone expansion area, which includes the Elan Project, would also generate emissions that exceed SCAQMD thresholds for pollutants for which the SCAB is in

nonattainment, the proposed project would make cumulatively considerable contributions of these pollutants. Implementation of mitigation measures **MM-OZ 4.2-2** through **MM-OZ 4.2-16** from the MEMU EIR and newly developed mitigation measures **MM-AQ-1** through **MM-AQ-3** during construction would not be able to reduce emissions to less-than-significant levels, while currently no feasible mitigation is available to reduce the total daily operational pollutant emissions estimated to occur under the MEMU Overlay Zone expansion area project. Thus, implementation of the proposed project would also result in cumulative air quality impacts that would occur under the original MEMU Overlay Zone project. As such, the cumulative impact conclusion in the MEMU EIR would remain the same for the proposed project. Cumulative air quality impacts would be ***significant and unavoidable***.

In addition, construction of future developments associated with the proposed project and related projects in the City would generate TAC emissions in the form of diesel PM emissions from the operation of heavy-duty diesel-powered equipment. However, because construction activities for each individual project would only affect its own remote group of existing sensitive receptors that may be located nearby and these activities would be much less than the 30-year exposure period used for health risk determination for sensitive receptors such as residents, these developments would not result in a long-term substantial source of TAC emissions. Additionally, SCAQMD has not recommended that health risk assessments be completed for construction-related emissions of TACs. As such, cumulative TAC emission impacts associated with construction activities would be ***less than significant***.

Furthermore, neither the proposed project nor any of the related projects identified in Table 5-1, which consist largely of residential, commercial, office, and school-related uses, are considered to be land uses that would generate substantial operational TAC emissions. Unlike large industrial facilities that emit large amounts of TAC emissions (e.g., warehouse facilities, manufacturing, refineries), the types of land uses introduced by the proposed project and related projects—with the exception of certain large commercial uses that may require the operation of heavy diesel machinery—are not subject to any regulatory permits and therefore are not considered to be stationary sources of TAC emissions that warrant regulation. Any large commercial use associated with the proposed project and related projects that would be a stationary source of TAC emissions would be subject to the rules and regulations of SCAQMD. Specifically, SCAQMD Regulation XIV (Toxics and Other Non-Criteria Pollutants), and in particular Rule 1401 (New Source Review of Toxic Air Contaminants), would require that all sources that possess the potential to emit TACs be required to obtain permits from SCAQMD. Permits are granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. As such, cumulative TAC emission impacts associated with operational activities would be ***less than significant***.

Carbon Monoxide Hot Spots

The certified MEMU EIR concluded that it is unlikely that future projects would result in long-term future exposure of sensitive receptors to substantial pollutant concentrations of carbon monoxide (CO) because levels of this pollutant are projected to be lower at the 2030 horizon year due to anticipated improvements in vehicle emission rates. As such, the cumulative impact associated with elevated CO concentrations is considered to be less than significant. Furthermore, it was determined that future CO concentrations at the 20 study intersections analyzed for the MEMU Overlay Zone project in horizon year 2030—which takes into account emissions from buildout of the MEMU

Overlay Zone, future ambient growth, and related projects in the project area—would not exceed the state or federal 1-hour or 8-hour standards. As such, the cumulative impact of the original MEMU Overlay Zone would be *less than significant*.

Similar to the analysis conducted in the MEMU EIR, CO concentrations were also analyzed at selected study intersections for the proposed project at buildout in 2040, which would include development of the Elan Project as well. Based on modeling that was conducted at the three study intersections with the highest traffic volumes in the project area in 2040, which in turn would have the greatest potential to result in elevated CO concentrations, it was determined that these study intersections would not result in CO concentrations in excess of the state or federal 1- or 8-hour CO standards. Consequently, all of the remaining study intersections, which have lower traffic volumes, would also not result in CO concentrations that would exceed the state or federal 1- or 8-hour standards. Overall, consistent with the conclusion in the MEMU EIR, the cumulative impact of the proposed project would be *less than significant*.

Odors

The certified MEMU EIR determined that both construction and operational activities in the City, which is the relevant geographic area with respect to odor impacts, would not result in significant cumulative impacts. Odors resulting from construction activities associated with the implementation of the MEMU Overlay Zone and related projects would generally be from diesel exhaust generated by construction equipment and vehicles and the application of architectural coatings, but these odors would be temporary and occur only during daytime hours. Additionally, standard construction requirements would be imposed on developers/applicants associated with these construction projects that would prevent odors from affecting a substantial number of people. During land use operations, odor impacts resulting from residential and office projects of the MEMU Overlay Zone project are not expected to affect a substantial amount of people as activities typically associated with these uses do not emit offensive odors. Also, solid waste from these projects would be stored in special areas and in containers, as required by mitigation measure **MM-OZ-4.2-1** from the MEMU EIR. Furthermore, restaurants are typically required to have ventilation systems that prevent substantial adverse odor impacts. As such, cumulative impacts associated with objectionable odors would be *less than significant*.

During the construction phases for future developments associated with the proposed project and related projects in the City, exhaust from equipment and activities associated with the application of architectural coatings and other interior and exterior finishes may also produce discernible odors typical of most construction sites. However, such odors would be a temporary source of nuisance to adjacent uses, but because they are temporary, localized, and intermittent in nature, they would not be considered a significant environmental impact. Additionally, because future developments in the City under the proposed project and related projects do not include any land uses that have been identified by SCAQMD's *CEQA Air Quality Handbook* to cause objectionable odors that would likely result in odor complaints (e.g., agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding), cumulative impacts associated with objectionable odors would not be anticipated. Similar to the original MEMU Overlay Zone project, odors from solid waste would be minimized by implementation of mitigation measure **MM-OZ-4.2-1** from the MEMU EIR, which would require these wastes to be stored in containers. Therefore, consistent with the conclusion in the MEMU EIR, cumulative impacts associated with objectionable odors would be *less than significant*.

5.3 Cultural Resources

MEMU Overlay Zone Expansion Area

A significant cumulative impact on cultural resources would occur if expansion of the Overlay Zone were to result in damage or destruction of CEQA-significant historical, archaeological, or paleontological resources or human remains.

No historical resources currently listed in the Santa Ana Register of Historic Properties are present within the Overlay Zone expansion area. A project's potential to result in impacts on historical resources depends both on the presence of such resources and specific activities with potential to produce adverse change in the significance of such resources. It is not currently possible to determine if cumulative impacts on historical resources would occur as a result of redevelopment within the Overlay Zone expansion area. The potential for such impacts can be accurately assessed only when the specific sites of proposed projects within the MEMU Overlay Zone expansion area have been identified, when those sites have been assessed to determine if any historical resources are present, and, if such resources are present, when the specific designs of proposed projects have been analyzed for impact potential. Because expansion of the MEMU Overlay Zone does not involve any actual construction, it would not contribute to any cumulative adverse changes in the significance of historical resources. Therefore, cumulative impacts on historical resources from expansion of the MEMU Overlay Zone would be *less than significant*.

Redevelopment of sites within the MEMU Overlay Zone expansion area could have potential to result in cumulative impacts on unknown/undiscovered archaeological and paleontological resources, or human remains. Application of mitigation measures **MM-OZ 4.4-2**, **MM-OZ-4.4.3**, and **MM-OZ-4.4-5** from the MEMU EIR and newly developed **MM-CUL-1** for specific redevelopment projects within the MEMU Overlay Zone expansion area would reduce any potential impacts on archaeological or paleontological resources, or human remains, to a less-than-significant level. However, no specific redevelopment or actual construction is proposed as part of expansion of the MEMU Overlay Zone. Therefore, expansion of the MEMU Overlay Zone would not contribute to cumulative disturbances of archaeological or paleontological resources, or human remains. Cumulative impacts on such resources would be *less than significant*.

Elan Project

Based on a review of the projects on the cumulative list, it does not appear that any would result in the demolition of identified historical resources in the cities of Santa Ana or neighboring Tustin. One listed project, the One Broadway Plaza Project, is associated with the address 1109 North Broadway in Santa Ana. The City of Santa Ana Register of Historic Properties lists that address as a local historical resource known as the Koenig House. However, the One Broadway Plaza Project is in the process of construction at a large property adjacent to the Koenig House. The proposed Elan Project would demolish a significant historical resource, the Santa Ana Elks Lodge, which has local and statewide significance for its association with the history of fraternal lodges and its importance as an example of Mid-Century Modern architectural design. Demolition of the Santa Ana Elks Lodge would result in a significant impact on a historical resource. Community buildings with historical significance and architectural significance along the lines of the subject lodge are being lost to demolition regionally and in other parts of the state. Demolition of the lodge would incrementally contribute to the loss of historically significant community association buildings and architecturally

significant examples of Mid-Century Modernism in California, as well as the loss of an architectural resource designed by the locally prominent mid-century firm of Ramberg and Lowrey. Therefore, the loss of the Santa Ana Elks Lodge and comparable resources contributes to a **significant cumulative impact on** historical resources.

Redevelopment of the Elan Project site and future redevelopment within the MEMU Overlay Zone expansion area have the potential for contributing to cumulative impacts on archaeological and paleontological resources, and to human remains. However, potential impacts on archaeological and paleontological resources identified within the Project site, and to any human remains identified within the project site, would be reduced to a less-than-significant level by implementation of mitigation measures **MM-OZ 4.4-2**, **MM-OZ-4.4.3**, and **MM-OZ-4.4-5** from the MEMU EIR and newly developed **MM-CUL-1**. Implementing those mitigation measures would ensure that potential impacts on archaeological resources, paleontological resources, and human remains from the Elan Project would be reduced to a less-than-significant level. Considered in relation to past, current, and future projects in the cities of Santa Ana and Tustin, the Elan Project would result in a **less-than-significant cumulative impact** on archaeological and paleontological resources, and on human remains.

5.4 Greenhouse Gas Emissions

Because both elements of the proposed project (MEMU Overlay Zone expansion area and the Elan Project) would exist under cumulative conditions, both are considered together in the following discussion of potential cumulative impacts. Greenhouse gas (GHG) emissions and climate change are exclusively cumulative impacts; there are no non-cumulative GHG emissions impacts from a climate change perspective. Climate change is the result of cumulative global emissions. No single project, when considered in isolation, can cause climate change because a single project's emissions are not enough to change the radiative balance of the atmosphere. Because climate change is the result of GHG emissions and GHGs are emitted by innumerable sources worldwide, global climate change will have a significant cumulative impact on the natural environment as well as human development and activity. As such, GHGs and climate change are cumulatively considerable, even though the contribution may be individually limited (SCAQMD 2008). SCAQMD methodology and thresholds are thus cumulative in nature.

As discussed in Section 4.3, the Elan Project would be consistent with the City's Climate Action Plan. Therefore, the proposed Elan Project would not contribute to a cumulatively significant impact related to GHGs in 2020. However, the buildout of the proposed project in 2040 in the MEMU Overlay Zone expanded area would result in a net increase of GHG emissions that would exceed the applicable "substantial progress" efficiency metric that was derived from the state's 2050 GHG emissions reduction target. As the City's Climate Action Plan is not qualified for tiering beyond 2020 and the proposed project would exceed the applicable 2040 efficiency metric, it is determined that the proposed project's GHG emissions would contribute to a cumulatively significant impact related to GHGs in 2040. The implementation of mitigation measures **MM-OZ 4.2-2** through **MM-OZ 4.2-16** from the MEMU EIR and newly developed mitigation measures **MM-AQ-1** through **MM-AQ-3** during construction, and newly developed mitigation measures **MM-GHG-1** through **MM-GHG-6** during operations for the proposed project would not be able to reduce emissions to less-than-significant levels. Thus, implementation of the proposed project would result in a cumulative air quality impact that would be **significant and unavoidable**.

5.5 Hazards and Hazardous Materials

As the Elan Project is located within the MEMU Overlay Zone expansion area, the following cumulative analysis is applicable to both projects. The hazardous materials geographic study area considered for cumulative impacts consisted of: (1) the area that could be affected by MEMU Overlay Zone expansion area (and Elan Project) activities, and (2) the areas affected by other projects whose activities could directly or indirectly affect the proposed development associated with both projects.

Typically, only projects occurring adjacent or very close to project locations would be considered due to the limited potential impact radius associated with the release of hazardous materials into the environment. However, no potentially significant impacts related to hazards and hazardous materials resulting from either project have been identified above. Implementation of mitigation measure **MM-OZ 4.6-2** from the MEMU EIR prior to construction activities would reduce potential impacts from sites with a history of contamination. Additionally, implementation of **MM-OZ 4.6-3** from the MEMU EIR would address potential exposure impacts associated with previously unidentified contamination by providing directives in the event that soil and/or groundwater contamination is encountered during construction activities. Moreover, development of related projects in contaminated areas would require remediation in compliance with state and federal environmental regulations, consequently improving overall environmental quality.

Demolition of structures to occur as part of expansion of the MEMU Overlay Zone and Elan Project development along with demolition activities of related projects could expose the surrounding environment (including residents, schools, etc.) to hazardous materials (i.e., asbestos and lead). Regulations pertaining to abatement, mentioned in Section 4.4, *Hazards and Hazardous Materials*, would apply to development within the MEMU Overlay Zone expansion area, Elan Project, and related projects. Thus, compliance with applicable regulations would ensure that the surrounding environment would not be exposed to risks related to hazardous material releases during demolition activities.

Implications of cumulative development (particularly commercial and industrial) in the area could involve the increase in use of hazardous materials. However, and as mentioned previously, new development that handles, stores, and disposes of hazardous materials would be required to comply with all applicable requirements and regulations. Furthermore, businesses that handle hazardous materials above threshold quantities would have to report usage to the Orange County Health Care Agency Environmental Health Department (the City of Santa Ana's Certified Unified Program Agency). Hazardous materials programs would require hazardous materials disclosure, implementation of emergency plans, and training programs for employees handling the materials.

Therefore, implementation of the MEMU Overlay Zone expansion area and Elan Project would not cumulatively contribute to hazardous materials or hazardous impacts in the region. Cumulative impacts would be *less than significant*.

5.6 Hydrology and Water Quality

The certified MEMU EIR determined that buildout of the MEMU Overlay Zone in combination with the cumulative development projects would involve construction activities that would result in increases in stormwater runoff from new impervious surfaces, erosion of soil, and cumulative degradation to water quality. However, compliance with existing regulations, including the

provisions of National Pollutant Discharge Elimination System (NPDES) permits and implementation of best management practices (BMPs) would minimize degradation of water quality at individual project sites; therefore, cumulative impacts would be **less than significant**, and buildout of the MEMU Overlay Zone would not make a cumulatively considerable contribution.

With implementation of the proposed project, including the Elan Project, no new significant cumulative impacts would occur, no more severe cumulative impacts would occur, and no new mitigation would be required. Each cumulative development project would still be required to comply with existing regulations, implement appropriate BMPs, and mitigate potentially significant impacts on hydrology and water quality. Thus, cumulative impacts would still be **less than significant**, and implementation of the proposed project, including the Elan Project, would not make a cumulatively considerable contribution.

5.7 Land Use and Planning

The certified MEMU EIR determined that buildout of the MEMU Overlay Zone in combination with the cumulative development projects in the City of Santa Ana, as represented by full implementation of the City of Santa Ana General Plan and development of related projects, would have less-than-significant impacts, and the Overlay Zone's contribution to cumulative land use changes would not be considerable. In addition, cumulative impacts associated with conflict of future development with adopted plans and policies would be less than significant, and the MEMU Overlay Zone would not make a cumulatively considerable contribution to impacts.

With implementation of the proposed project, including the Elan Project, no new significant cumulative impacts would occur, no more severe cumulative impacts would occur, and no new mitigation would be required. Each cumulative development project would still be required to comply with existing regulations and mitigate potentially significant impacts on land use and planning. Thus, cumulative impacts would still be **less than significant** and implementation of the proposed project, including the Elan Project, would not make a cumulative considerable contribution.

5.8 Noise

Because both the expansion of the MEMU Overlay Zone and the Elan Project would exist under cumulative conditions, both are considered together in the following discussion of potential cumulative impacts.

The geographic context for the analysis of cumulative noise and vibration impacts depends on the source being analyzed. Noise and vibration are typically localized phenomena that reduce rapidly in magnitude as distance from the source increases. For construction impacts and onsite operational impacts, only the immediate area around the project site would be included. For operational traffic noise impacts, the context is the existing and future development in the City of Santa Ana. This cumulative analysis considers development of the proposed project, in conjunction with ambient growth and other development in the project vicinity.

Construction

Noise

Increases in noise at sensitive uses would occur as a result of construction of the proposed project, along with other construction of related projects in the vicinity. Related projects (if any) being constructed simultaneously would contribute noise levels similar to those generated by construction of the proposed project, assuming both are close to the same receptor. Projects being constructed farther from the receptor would cause a smaller contribution to the overall noise levels. As discussed previously, Section 18-314(e) of the City of Santa Ana Municipal Code limits construction activities to between the hours of 7:00 a.m. and 8:00 p.m. Monday through Saturday, and also prohibits construction activities on Sundays and federal holidays. Mitigation measure **MM-OZ 4.9-1** from the MEMU EIR reiterates the requirement for the proposed project to comply with these hours. As a result, all noise from construction of the proposed project would be exempt from the Municipal Code, as would any overlapping construction activities for any cumulative project occurring during the same hours. Therefore, the cumulative impact would be *less than significant*.

Vibration

Groundborne vibration from proposed project construction would be temporary. Nonetheless, impacts would be significant and unavoidable. As discussed previously, groundborne vibration is a highly localized phenomenon. Therefore, the worst-case vibration levels experienced at any single receiver location are typically dominated by the closest vibration source, and the incremental increase caused by any secondary source(s) would be minimal. If two or more projects are not constructed simultaneously close to each other then there would be no significant cumulative impact. However, given that there are cumulative projects close to the proposed project area, it is conceivable that construction activities for multiple projects could occur simultaneously close (i.e., within 50 feet) to the same building(s). If this were to occur there could be a significant cumulative impact and construction of the proposed project could generate a cumulatively considerable contribution. Implementation of mitigation measures **MM-OZ 4.9-1** through **MM-OZ 4.9-4** from the MEMU EIR would help to reduce this impact, but not to a less than significant level; therefore, the cumulative vibration impact from construction would be *significant and unavoidable*.

Operation

Noise

Cumulative projects would include apartments and other noise-sensitive uses that would potentially be developed in locations with noise levels in excess of the City's 65 A-weighted decibel (dBA) Community Noise Equivalent Level (CNEL) standard. However, such development would be required to implement site and building design, including features such as insulation, mechanical ventilation, and sound-rated windows and doors, as necessary to comply with the City's applicable exterior and interior noise limits. As a result, the cumulative impact related to new noise-sensitive development would be *less than significant*.

The primary source of onsite operational noise associated with the proposed project would be HVAC equipment. As discussed under the analysis of direct project impacts, HVAC equipment would be shielded and project mitigation measures from the MEMU EIR (**MM-OZ 4.9-7**) would ensure that

HVAC system noise would remain below the 65 dBA CNEL exterior noise standard established in the City's General Plan. The development types associated with the proposed project and other nearby projects are not so dense that multiple HVAC units from different projects would be located close to the same sensitive receiver location (such as an individual residential unit or hotel room). Consequently, the cumulative impact of onsite operational noise would be ***less than significant***.

Permanent increases in noise would occur primarily as a result of increased traffic on local roadways due to the proposed project, related projects, and ambient growth within the study area through 2040. Using the same traffic noise modeling methodology described in Section 4.7, *Noise*, together with data from the Traffic Impact Study (TIS) for the proposed project (Appendix G1), traffic noise levels were estimated for the existing, 2040 (buildout year), and 2040 with project scenarios. The noise modeling is provided in Appendix F. Table 5-2 summarizes the predicted noise levels from the roadway segments considered in the TIS. Referring to the table, there would be no significant cumulative impacts under buildout (2040) conditions. Therefore, the long-term cumulative traffic noise impact would be ***less than significant***.

Vibration

Aside from construction activities, which are discussed above, the types of stationary sources that might generate noticeable groundborne vibration would typically be limited to heavy industrial operations. No such operations are anticipated as part of the proposed project. Mechanical equipment installed at the project would produce some localized vibration that may be perceptible at nearby locations within the same building. However, there would be no major sources of vibration that would generate perceptible vibration at offsite locations. Likewise, none of the nearby cumulative projects are for uses that would typically generate perceptible vibration at offsite locations. As a result, cumulative operational vibration impacts would be ***less than significant***.

Table 5-2. Estimated Cumulative Traffic Noise Levels

Roadway Segment	Estimated Unmitigated Traffic Noise Levels at 50 feet from Roadway Centerline (dBA CNEL)							
	Existing (2017)	2040 Baseline	2040 + Project	Increase over Existing	Significance Threshold ^a (Increase)	Cumulative Impact?	Project Increase	Cumulatively Considerable Project Contribution?
Fourth Street								
Grand Ave to I-5 SB Off-Ramps	65.7	66.1	66.3	0.6	3.0	No	0.2	N/A
Golden Circle Dr to Tustin Ave	68.3	68.8	68.5	0.2	3.0	No	-0.3	N/A
First Street								
Main St to Standard Ave	70.5	70.9	71.1	0.6	3.0	No	0.2	N/A
Grand Ave to Lyon St	69.7	70.1	71.6	1.9	3.0	No	1.5	N/A
Golden Circle Dr to Tustin Ave	67.8	68.2	70.4	2.6	3.0	No	2.2	N/A
Lyon Street								
First St to Chestnut Ave	63.9	64.3	66.7	2.8	3.0	No	2.4	N/A
Chestnut Ave to McFadden Ave	64.2	64.6	64.8	0.6	5.0	No	0.2	N/A
Elk Lane								
First St to Main St	58.7	59.1	61.8	3.1	5.0	No	2.7	N/A
Cabrillo Park Drive								
Fruit St to Park Court Pl	63.7	64.1	64.1	0.4	5.0	No	0.0	N/A
Fourth St to First St	64.2	64.6	64.7	0.5	5.0	No	0.1	N/A
Tustin Avenue								
Fruit St to 6th St	68.7	69.1	69.3	0.6	3.0	No	0.2	N/A
Fourth St to First St	66.9	67.4	69.4	2.5	3.0	No	2.0	N/A
Grand Avenue								
Santa Ana Blvd to 4th St	70.4	70.8	71.5	1.1	3.0	No	0.7	N/A
Fourth St to First St	70.4	70.8	71.9	1.5	3.0	No	1.1	N/A
First St to Chestnut Ave	71.3	71.7	71.7	0.4	3.0	No	0.0	N/A
Chestnut Ave to McFadden Ave	71.1	71.5	71.5	0.4	3.0	No	0.0	N/A

Roadway Segment	Estimated Unmitigated Traffic Noise Levels at 50 feet from Roadway Centerline (dBA CNEL)							
	Existing (2017)	2040 Baseline	2040 + Project	Increase over Existing	Significance Threshold ^a (Increase)	Cumulative Impact?	Project Increase	Cumulatively Considerable Project Contribution?
Chestnut Avenue								
Grand Ave to Lyon St	64.1	64.7	64.9	0.8	5.0	No	0.2	N/A

Source: Appendix G1

^a Significance thresholds are defined as follows:

5.0 dBA CNEL if the existing + project noise level (rounded to the nearest whole number) is below the City of Santa Ana standard of 65 dBA CNEL.

3.0 dBA CNEL if the existing + project noise level (rounded to the nearest whole number) meets or exceeds the City of Santa Ana standard of 65 dBA CNEL.

5.9 Transportation and Traffic

The certified MEMU EIR considered trips generated by cumulative projects in its development of future baseline conditions. Therefore, the cumulative impact analysis was incorporated into the Year 2030 analysis presented therein. Because implementation of the MEMU project was found to contribute to significant impacts at the study area intersections, and because implementation of the potential improvement measures could not be guaranteed, the project was found to have a considerable contribution to cumulative impacts. Therefore, cumulative traffic impacts were considered *significant and unavoidable*.

Similar to the 2007 MEMU Final EIR, the transportation/traffic analyses for the MEMU Overlay Zone expansion area and the Elan Project include trips from cumulative projects as well as assumed ambient growth over time in future conditions. The Overlay Zone traffic analysis forecasts 2025 and 2040 with and without project conditions in the *Traffic Impact Study for the Santa Ana Metro East Overlay Expansion Project* (Appendix G1), and the Elan Traffic Study analyzes Year 2020 and Year 2040 conditions with and without the project in the *Traffic Impact Analysis Report for 1660 E. First Street Elks Apartments* (Appendix G2).

Overlay Zone Expansion Area

As described in Section 4.8, *Traffic/Transportation*, the Overlay Zone project is expected to result in unacceptable level of service (LOS) in Year 2025 when the proposed project-related traffic is added to cumulative traffic and future background conditions at 8 roadway segments and 18 study intersections. In the Year 2040, the proposed project would contribute to unacceptable LOS at 16 intersections and 3 roadway segments. Additionally, the 3 Congestion Management Program (CMP) intersections within the study area, and would be significantly affected. These impacts are considered to be cumulatively considerable. Implementation of mitigation measures **MM-OZ 4.12-1** through **MM-OZ 4.12-4** from the MEMU EIR and new **MM-TRA-1** would reduce the cumulative impacts and the project contribution. However, because some of the significantly affected intersections would be outside of the City's jurisdiction, and the City cannot ensure implementation of the suggested improvements, cumulative traffic impacts from the MEMU Overlay Zone expansion are considered to be *significant and unavoidable*.

Elan Project

As described in Section 4.8, the Elan Project is expected to contribute significant traffic to two intersections in 2020 when adding the Elan Project-related traffic to the background and cumulative project traffic. In 2040, when adding the Elan Project-related traffic to the background and cumulative project traffic, six intersections are expected to experience a significant impact. Implementation of recommended improvements at these locations as identified in mitigation measure **MM-TRA-2** would offset the Elan Project contribution and improve the LOS to acceptable operating conditions. Therefore, cumulative traffic impacts are considered to be *less than significant*.

When adding in cumulative projects and background growth to 2020, the Elan Project would contribute to a significant impact along Lyon Street between First Street and Chestnut Avenue. However, a peak hour roadway assessment forecasts this segment to operate at LOS A or better

during the AM and PM peak hours for both existing conditions and Year 2020 conditions. By Year 2040, the Elan Project is expected to result in impacts on the Lyon Street roadway segment above, and Elk Lane between, First Street and Chestnut Avenue. However, a peak hour roadway assessment forecasts these segments to operate at acceptable levels of service during the AM and PM peak hours. Therefore, the Elan Project would not contribute to cumulatively considerable impacts on roadway segments. Cumulative traffic impacts are considered to be *less than significant*.

5.10 Tribal Cultural Resources

Because both the expansion of the MEMU Overlay Zone and the Elan Project would exist under cumulative conditions and the Elan Project falls within the Overlay Zone expansion area, both are considered together in the following discussion of potential cumulative impacts.

A cumulatively considerable impact on tribal cultural resources would result if the proposed project's incremental contribution to significant cumulative tribal cultural resource impacts would be considerable. The analysis first determines if a cumulative significant tribal cultural resources impact is present and then determines if the project's contribution would be cumulatively considerable. Because impacts on tribal cultural resources are generally site specific and not additive across a landscape, the geographic scope for the cumulative tribal cultural resources impact analysis includes areas within 0.5 mile of the project area.

Past projects within the geographic scope have resulted in urban development as seen today, which most likely also affected tribal cultural resources if one or more tribal cultural resources were previously located within the project footprint. Because the past and present projects have drastically changed the cultural setting of the immediate region, cumulative impacts from past, present, and probable future projects are cumulatively significant.

As discussed in Section 3.9, under the heading *Existing Tribal Cultural Resources*, no tribal cultural resources that are listed in or eligible for listing in the California Register of Historical Resources or Sacred Lands File were identified on or in proximity to the MEMU Overlay Zone expansion area or Elan Project site. Pursuant to Public Resources Code Section 21080.3.1 (AB 52), California Native American Tribes traditionally and culturally affiliated with the project area can request notification of projects in their traditional cultural territory. To date, the City has not received a specific request from a Tribe for consultation the proposed project. Therefore, tribal consultation was not conducted, and no tribal cultural resources were identified as a result of an Assembly Bill (AB) 52 consultation process.

The proposed project and its immediate surroundings consist of urban land that has been entirely developed with buildings, paving, or park landscape. Therefore, due to the nature of the proposed project, the absence of recorded tribal cultural resources within or near the project site, and the lack of requested consultation by Tribes under AB 52, it is unlikely that significant tribal cultural resources would be encountered during construction of the proposed project. However, any potential tribal cultural resources inadvertently discovered during construction would be evaluated and protected in compliance with standard mitigation measures (**MM-TCR-1**) set forth in Public Resources Code, Section 21084.3 (b). Therefore, impacts would be *less than significant* and would not be cumulatively considerable.

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6.1 Introduction

CEQA Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the project or to the location of the project that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any significant environmental impacts. The range of feasible alternatives is selected and discussed in a manner to foster meaningful public participation and informed decision-making.

According to the State CEQA Guidelines, the EIR should compare merits of the alternatives and determine an environmentally superior alternative. Alternatives for an EIR usually take the form of no project, reduced project size, different project design, or suitable alternative project sites. The range of alternatives discussed in an EIR is governed by the “rule of reason,” which requires the identification of only those alternatives necessary to permit a reasoned choice between the alternatives and the proposed project.

An EIR need not consider an alternative that would be infeasible. State CEQA Guidelines Section 15126.6(f)(1) explains that the evaluation of project alternative feasibility can consider “site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries [...] and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site.” The EIR is also not required to evaluate an alternative that: (1) has an effect that cannot be reasonably identified, (2) has remote or speculative implementation, or (3) would not achieve the basic project objectives.

The overall objectives of the Overlay Zone expansion are to encourage a more active commercial and residential community, provide an expanded economic base, maximize property and sales tax revenue, and improve the jobs/housing balance within the City.

6.2 MEMU EIR Alternatives

The MEMU EIR examined a range of alternatives that would substantially lessen at least some of the significant impacts associated with implementation of the proposed project, while still meeting the project objectives. A final determination with respect to whether to proceed with the proposed project or accept or reject any of the alternatives was provided in the findings as part of certification of the Final MEMU EIR.

Several alternatives were rejected, and a rationale for rejecting the alternatives was presented in the original MEMU EIR, and ultimately the findings as part of certification of the Final MEMU EIR. As the Overlay Zone was designed to guide the development of a particular portion of the City, an alternative site would not be appropriate as an alternative to the proposed project. Other land uses, such as all residential, would not achieve the objectives of the project and could result in incompatibility with adjacent land uses. Therefore, these alternatives were rejected from further analysis in the MEMU EIR.

A no-project alternative that considers a freezing of conditions (i.e., no development) was not considered or discussed because the no project alternative for a land use plan analyzes the continuation of existing land use plans into the future (per State CEQA Guidelines Section 15126.6(a)).

Ultimately, three scenarios representing a range of reasonable alternatives were selected for detailed analysis and carried forward in the MEMU EIR:

- **Alternative 1 – No Project/Reasonably Foreseeable Development (Continuation of Existing General Plan):** Under this alternative, development in the project area would occur under the existing General Plan and zoning designations.
- **Alternative 2 – Higher Intensity Commercial Project:** This alternative would permit a higher intensity of commercial development and a corresponding decrease in residential density for projects proposed within the Overlay Zone relative to the proposed overlay plan. This alternative would reduce the number of residences (by approximately half) and increase employment opportunities as a result of more commercial/office uses.
- **Alternative 3 – Reduced Project:** This alternative would allow development at a maximum Floor Area Ratio (FAR) of 1.25 for each developable parcel within the Overlay Zone without consideration of residential density. The anticipated mix of commercial, office, and residential land uses would be identical to the proposed project; however, a maximum FAR would be established that would limit development potential and, therefore, density and height. Under this alternative there would be no differentiation between different areas (districts) in the Overlay Zone.

The MEMU EIR found that each of these alternatives would reduce some potential impacts. Alternative 1 would achieve some of the project objectives, but would not achieve others (or would achieve them to a lesser degree than the proposed project). Alternative 2 would achieve all of the project objectives, similar to the proposed project. Alternative 3 would achieve some of the project objectives, but would not improve the jobs/housing balance within the City to the level provided by the proposed project.

An EIR must identify the environmentally superior alternative to the proposed project from among the range of reasonable alternatives. This would ideally be the alternative that results in few significant and unavoidable impacts. State CEQA Guidelines Section 15126(d)(2) states that if the environmentally superior alternative is the no project alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives.

Alternative 1 does not reduce any of the proposed project's significant impacts to less-than-significant levels; however, it does lessen the severity of many of the impacts. Similarly, Alternatives 2 and 3 would reduce the potential impacts of the proposed project, although not to the same degree as Alternative 1. Alternative 1 would therefore be environmentally superior as it would reduce significant impacts associated with air quality, noise, and transportation.

6.3 Subsequent Alternatives Analysis

Overlay Zone Expansion Area Alternatives

The proposed MEMU Overlay Zone expansion area would result in essentially the same significant impacts as were identified for the proposed project in the MEMU EIR. Therefore, the range of alternatives identified and analyzed are applicable to the modification of the project in this SEIR. As discussed above, Alternatives 1, 2, and 3 would each achieve at least some of the project objectives and would reduce the severity of some potential impacts. However, none of these alternatives would reduce significant impacts to less-than-significant levels. Alternative 1 would remain the environmentally superior alternative as it would reduce significant impacts associated with air quality, noise, and transportation.

Elan Project Alternatives

The Elan Project would be located within the proposed MEMU Overlay Zone expansion area, and therefore a new range of alternatives should be considered in this SEIR. As described above, the alternatives analysis should consider alternatives that would substantially lessen at least some of the significant impacts associated with implementation of the proposed project, while still meeting the project objectives

Most of the impacts associated with the proposed Elan Project fall within the scope of the impacts identified for the MEMU Overlay Zone expansion area. Project-specific studies demonstrate the proposed Elan Project would not result in significant impacts with the incorporation of mitigation measures, with the exception of impacts on historic resources. As noted in Section 4.2, *Cultural Resources*, under Impact 4.2-E1, the Santa Ana Elks Lodge was been found eligible for listing in the California Register of Historical Resources and the Santa Ana Historic Property Register. Because the proposed Elan Project would demolish the Santa Ana Elks Lodge, it would result in a substantial adverse change to a historical resource. Mitigation measures **MM-CUL-2** through **MM-CUL-4** would reduce impacts, but impacts would remain significant and unavoidable. The following alternatives are considered in this SEIR to attempt to reduce significant cultural resources impacts.

Alternative E1: No Project/No Development

Under the No Project/No Development Alternative, development of the Elan Project would not occur. The existing site would remain in its current state—the northern one-third of the property would remain vacant and undeveloped, and the Elks Lodge building would remain intact on site. As part of a separate project, the Elks Lodge operations are moving their operations to a new 52,720-square-foot facility at 1701 East Saint Andrew Place in Santa Ana. Therefore, the Elks Lodge building would be vacated and could fall into disrepair if not maintained or re-occupied with another use. All impacts associated with the proposed Elan Project would be avoided, including the significant and unavoidable cultural resources impact associated with demolition of the Elks Lodge building.

Alternative E2: Alternative Site

This alternative would involve development of the Elan Project on an alternative site within the MEMU Overlay Zone expansion area. The City and applicant have explored other sites within the existing and expanded MEMU Overlay Zone that could potentially accommodate a similar project.

Based on recent searches, no other comparable sites are available that could accommodate a development similar to the Elan Project. Therefore, this alternative has been rejected from further consideration.

Alternative E3: Reduced Project/Reduced Site

Because the Elks Lodge building and parking lot occupies approximately two-thirds of the site, this alternative would involve development of the northern one-third of the site (approximately 2 acres), thereby avoiding demolition of the Elks Lodge building. Therefore, this alternative would essentially reduce the project by two-thirds, yielding a potential development of approximately 200 residential units and approximately 2,800 square feet of commercial uses on the ground floor. All impacts associated with the proposed Elan Project would be reduced, including air quality, traffic, and noise, as well as the significant and unavoidable cultural resources impact associated with demolition of the Elks Lodge building. However, as noted above, the Elks Lodge operations are moving out of the existing building to a new facility, which could result in the building falling into disrepair if not maintained or re-occupied with another use.

This alternative is not considered feasible because it would render the proposed Elan project physically unable to meet the development standards of the MEMU Overlay District for mixed-use projects on a small portion of the entire development site. It would be very difficult to disguise the parking (underground or wrap) and build a mixed-use building with all of the frontage, setbacks, open space, and other development standards on the remaining lot. This alternative would also not achieve many of the project objectives, including, but not limited to, facilitating well-designed new mixed-use development projects through innovative and flexible design solutions, achieving harmonious integration of new mixed-use development, creating extensive outdoor amenities, or creating creative parking solutions that enhance the area's urban form. A smaller project on the northern one-third of the site, combined with the existing surrounding development and the remaining Elks Lodge building, would result in design challenges that do not achieve the City's desired planning objectives. For these reasons, this alternative has been rejected from further consideration.

7.1 Introduction

This chapter includes the following discussions and analyses required by CEQA:

- Energy considerations
- Growth-inducing impacts
- Effects found not to be significant
- Significant and unavoidable environmental impacts
- Significant irreversible changes

7.2 Energy Considerations

CEQA requires EIRs to include a discussion of potential energy impacts and energy conservation measures. Appendix F, Energy Conservation, of the State CEQA Guidelines outlines energy impact possibilities and potential conservation measures designed to assist in the evaluation of potential energy impacts of proposed projects. Appendix F places “particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy,” and further indicates this may result in an unavoidable adverse effect on energy conservation. Moreover, the State CEQA Guidelines state that significant energy impacts should be “considered in an EIR to the extent relevant and applicable to the project.” Mitigation for potential significant energy impacts could include implementing a variety of strategies, such as measures to reduce wasteful energy consumption and alteration of project siting to reduce energy consumption.

The MEMU EIR concluded that implementation of the MEMU Overlay Zone would not result in electricity and natural gas consumption that would lead to construction of new or expansion of existing energy production facilities or transmission lines. Mitigation measure **MM-OZ 4.13-2** from the MEMU EIR would require energy conservation measures to reduce energy consumption associated with development projects within the project area. As development capacity for the MEMU Overlay Zone would remain the same as what was previously analyzed in the MEMU EIR, energy consumption would be similar to the MEMU EIR and would decrease overall per capita energy consumption and decrease reliance on fossil fuels such as coal, natural gas, and oil. Thus, the proposed project would not result in a wasteful, inefficient, and unnecessary usage of direct or indirect energy. Therefore, no new or more severe impacts would occur.

7.3 Growth-Inducing Impacts

This section summarizes the proposed project’s growth-inducing impacts on the surrounding community. According to CEQA, a project is typically considered growth-inducing if it would foster economic or population growth. Examples of projects likely to have significant growth-inducing

impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are currently only sparsely developed or are undeveloped.

The MEMU EIR concluded that implementation of the MEMU Overlay Zone would set a precedent by allowing mixed-use development within the City, which at the time did not have a mixed-use zoning designation, and would induce substantial population growth in the area beyond that already forecasted for the City. As reported in the MEMU EIR, the MEMU Overlay Zone is estimated to result in a potential increase in City population of 11,102 residents. Under the proposed project, the development capacity of the MEMU Overlay Zone would remain the same as well as the expected population growth. Therefore, no new or more severe impacts would occur.

7.4 Effects Found Not to Be Significant

The MEMU EIR found impacts on the following resources would be either less than significant or could be mitigated to a less-than-significant level.

- Aesthetics
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Population and Housing and Employment
- Public Services and Recreation
- Utilities and Service Systems

Findings related to aesthetics, biological resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, population and housing and employment, public services and recreation, and utilities and service systems were found to be consistent with the MEMU EIR: less than significant or able to be mitigated to less than significant. Previous mitigation measures from the MEMU EIR would be incorporated into the proposed project for aesthetics, biological resources, geology and soils, hazards and hazardous materials, hydrology and water quality, and utilities and service systems to ensure less-than-significant impacts.

7.5 Significant and Unavoidable Environmental Impacts

The MEMU EIR concluded that construction and operation of the MEMU Overlay Zone would result in the following significant and unavoidable impacts:

Air Quality

- Short-term construction impacts resulting from peak daily emissions of volatile organic compounds (VOC) and nitrogen oxides (NO_x).
- Operational impacts resulting from peak daily emissions of particulate matter less than 10 microns in diameter (PM₁₀), carbon monoxide (CO), VOC, and NO_x.
- A cumulatively considerable net increase of criteria pollutants for which the proposed project region is in nonattainment under an applicable federal or state ambient air quality standard resulting from construction and operation.

Noise

- Short-term construction impacts resulting from groundborne vibration or groundborne noise levels.
- Operational impacts resulting from an increase in ambient noise levels due to increased vehicular trips.

Transportation/Traffic

- Operational impacts resulting from an exceedance of the applicable level of service (LOS) criteria for vehicle trips.
- Operational impacts resulting from an exceedance of an applicable Congestion Management Program (CMP) level of service standard.

The proposed project would be consistent with the prior findings, and significant and unavoidable environmental impacts disclosed in the MEMU EIR would remain for air quality, noise, and transportation/traffic.

The proposed project would result in one significant and unavoidable environmental impact that was not previously analyzed in the MEMU EIR:

Cultural

- Development of the Elan Project would result in a substantial adverse change to a historical resource.

Because the proposed Elan Project would demolish the Santa Ana Elks Lodge, it would result in a substantial adverse change to a historical resource. Mitigation measures **MM-CUL-2** through **MM-CUL-4** would reduce impacts, but not to a less-than-significant level.

7.6 Significant Irreversible Changes

Section 15126.2(c) of the State CEQA Guidelines requires that an EIR consider any significant irreversible environmental changes that would be caused by a project should it be implemented. Section 15126.2(c) reads as follows.

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

A project would result in significant irreversible environmental changes if any of the following criteria are met.

- The primary and secondary impacts would generally commit future generations to similar uses.
- The project would involve a large commitment of nonrenewable resources.
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project.

- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

The MEMU EIR concludes that implementation of the MEMU Overlay Zone would result in the continued commitment of the City to mixed-use development, thereby precluding any other uses for the lifespan of the project. However, although any proposed development would further the City's commitment of a portion of the Overlay Zone for mixed-use land use purposes for future generations, the proposed development does not represent a change in commitment from existing and planned uses for the Overlay Zone. Furthermore, development within the MEMU Overlay Zone would be essentially infill and would not represent conversion of previously undeveloped land to developed uses. Resources that would be permanently and continually consumed include water, electricity, natural gas, and fossil fuels; however, the amount and rate of consumption of these resources would not result in significant environmental impacts related to the unnecessary, inefficient, or wasteful use of resources. In addition, compliance with all applicable building codes, as well as project mitigation measures or project requirements, would ensure operational activities conserve or recycle natural resources to maximum extent feasible.

Implementation of the proposed project would involve the expansion of the MEMU Overlay Zone, development of the Elan Project, and refinement of the development standards and allowable land uses. However, the development capacity for the Overlay Zone would remain the same, and the resources that would be permanently and continually consumed by project buildout would still be the same. Furthermore, as with the existing MEMU Overlay Zone, development in the expansion area would be essentially infill and would not represent conversion of previously undeveloped land to developed uses. Therefore, implementation of the proposed project would not result in any significant irreversible changes beyond those disclosed in the MEMU EIR.

8.1 Lead Agency

City of Santa Ana

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8.2 Consultant Team

ICF

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Matt McFalls Terrance Wong Sarah Halterman	Air Quality; Greenhouse Gas Emissions
Karen Crawford Tim Yates Karolina Chmiel Nara Cox	Cultural Resources; Tribal Cultural Resources
Mario Barrera	Geology and Soils; Hazards and Hazardous Materials
Elliott Wezerek	Land Use and Planning; Environmental Checklist
Jonathan Higginson Eric Moskus	Noise
Liane Chen	Executive Summary; Other CEQA; Environmental Checklist
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9.1 Printed References

- ASM Affiliates, Inc. 2018. *Cultural Resources Technical Report for Santa Ana Elks Lodge, Santa Ana, Orange County, California*. March 21. Prepared for Santa Ana First Street, LLC, and the City of Santa Ana.
- Association of Environmental Professionals. 2016. *Final White Paper, Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*. Available: <https://www.califaep.org/images/climate-change/AEP-2016-Final-White-Paper.pdf>. Accessed: May 1, 2018.
- Bean, L. J., and C. R. Smith. 1978a. Serrano. Pages 570–574 in Robert F. Heizer (ed.), *California Handbook of North American Indians*, Vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.
- . 1978b. Gabrielino. Pages 550–563 in Robert F. Heizer (ed.), *California Handbook of North American Indians*, Vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.
- Blasing, T. J. 2016. *Recent Greenhouse Gas Concentrations*. DOI: 10.3334/CDIAC/atg.032. Updated: April. Accessed: March 29, 2018.
- Boden, T.A., G. Marland, G., and R.J. Andres. 2017. *National CO₂ Emissions from Fossil-Fuel Burning, Cement Manufacture, and Gas Flaring: 1751–2014*. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, doi 10.3334/CDIAC/00001_V2017.
- Byerly, Ryan, and Joanna Roberson. 2015. Late Pleistocene to Middle Holocene Archaeology in the Mojave Desert: Recent Discoveries in Twentynine Palms, California. *PaleoAmerica* 1(2):197–201.
- California Air Resources Board. 2004. *2004 Revision to the California State Implementation Plan for Carbon Monoxide, Updated Maintenance Plan for Ten Federal Planning Areas*. July 22.
- California Air Resources Board. 2008. *Climate Change Scoping Plan*. Available: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. December.
- . 2014. *First Update to the AB 32 Scoping Plan*. Available: <http://www.arb.ca.gov/cc/scopingplan/document/updatescopingplan2013.htm>.
- California Air Resources Board. 2016. *Low Carbon Fuel Standard Program Background*. Last reviewed February 2. Available: <https://www.arb.ca.gov/fuels/lcfs/lcfs-background.htm>. Accessed: May 16, 2018.”
- . 2017a. *California Greenhouse Gas Emission Inventory – 2017 Edition*. Available: <http://www.arb.ca.gov/cc/inventory/data/data.htm>.

- . 2017b. *California Greenhouse Gas Emissions for 2000 to 2015 – Trends of Emissions and Other Indicators*. Available: https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2015/ghg_inventory_trends_00-15.pdf.
- . 2018. *Top 4 Summary*. Available: <https://www.arb.ca.gov/adam/topfour/topfour1.php>. Accessed: March 30, 2018.
- California Department of Parks and Recreation. 2005. Los Angeles State Historic Park General Plan and Final Environmental Impact Report. Existing Conditions section, pp. 14-29. State Clearinghouse #2003031096.
- City of Santa Ana. 2007a. *Metro East Mixed Use Overlay Zone Final Environmental Impact Report*. SCH No. 2006031041. Prepared by EIP Associates, a Division of PBS&J, Los Angeles, CA. March 2007.
- . 2007b. *Metro East Mixed-Use Overlay Zone*. March. Available: http://www.ci.santa-ana.ca.us/pba/planning/documents/MEMU_document.pdf
- . 2014. *Strategic Plan – Goal 5 Community Health, Livability, Engagement, and Sustainability*. Available: <http://www.ci.santa-ana.ca.us/strategic-planning/documents/CommunityHealthLivabilityEngagementandSustainability.pdf>. Accessed: March 30, 2018.
- . 2015. *Climate Action Plan*. December. Available: http://www.ci.santa-ana.ca.us/climateactionplan/documents/climate_action_plan.pdf. Accessed: March 30, 2018.
- . 2018. *Recycling Programs – We Recycle*. Available: <http://www.santa-ana.org/green/RecyclingPrograms.asp>. Accessed: February 9, 2018.
- Dillon, B. D. 2002. California PalaeoIndians: Lack of Evidence, or Evidence of a Lack? In W. J. Wallace and F. A. Riddell (eds.), *Essays in California Archaeology: A Memorial to Franklin Fenenga*. Contributions of the University of California Archaeological Research Facility, Number 60, Berkeley, CA.
- Department of Toxic Substances Control. 2018. *Envirostor*. Available: <http://www.envirostor.dtsc.ca.gov/public/>. Accessed: April 24, 2018.
- Engelhardt, Z. 1931. *Mission San Gabriel Arcangel*. Franciscan Herald Press, Chicago, IL.
- Erlandson, J. M., M. H. Graham, B. J. Borque, D. Corbett, J. A. Estes, and R. S. Steneck. 2007. The Kelp Highway Hypothesis: Marine Ecology, the Coastal Migration Theory, and the Peopling of the Americas. *Journal of Island and Coastal Archaeology* 2:161–174.
- Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. Final. FTA-VA-90-1003-06. May 2006. Washington, DC. Prepared by Harris Miller Miller & Hanson Inc. Burlington, MA. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed: May 1, 2018.
- Federal Highway Administration. 2004. *FHWA Traffic Noise Model®, Version 2.5 Look-Up Tables User's Guide*. Final. FHWA-HEP-05-008 / DOT-VNTSC-FHWA-0406. December 2004. Washington, DC. Prepared by U.S. Department of Transportation, Research and Special Programs Administration, John A. Volpe National Transportation Systems Center Acoustics Facility. Cambridge, MA.

- Garza, V. J., P. Graney, and D. Sperling. 1997. *Transportation Project-level Carbon Monoxide Protocol*. Davis, CA: Institute of Transportation Studies, University of California, Davis.
- Heizer, R.F. 1962. The California Indians: Varieties of Culture, Arts of Life. *California Historical Society Quarterly*, Vol. 41, No. 1 (March 1962). University of California Press in association with the California Historical Society.
- Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor, and H. L. Miller (eds.). Available: <http://www.ipcc.ch/ipccreports/ar4-wg1.htm>. Accessed: March 30, 2018.
- Intergovernmental Panel on Climate Change. 2014. *Climate Change 2014 Synthesis Report*. Available: http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf. Accessed: March 30, 2018.
- Kroeber, A. L. 1925. *Handbook of the Indians of California*. California Book Company, Berkeley, CA.
- McCawley, W. 1996. *The First Angelinos: The Gabrielino Indians of Los Angeles*. Malki Museum Press/Ballena Press, Banning, CA.
- Meltzer, D.J. 2004. Modeling the Initial Colonization of the Americas: Issues of Scale, Demography and Landscape Learning. In: *The Settlement of the American Continents: A Multidisciplinary Approach to Human Biogeography*. Edited by Michael Barton, Geoffrey A. Clark, David Yesner, and Georges A. Pearson. Pp. 123-137. Tucson: The University of Arizona Press.
- Michael Baker International. 2015. *Storm Drain Master Plan City of Santa Ana Orange County, California*. Irvine, CA. Prepared for City of Santa Ana, Santa Ana, CA. Job No. 133718. December 2015.
- Moratto, M. J. 2004. *California Archaeology*. Coyote Press, Salinas, CA.
- Myhre, G., D. Shindell, F.-M. Bréon, W. Collins, J. Fuglestedt, J. Huang, D. Koch, J.-F. Lamarque, D. Lee, B. Mendoza, T. Nakajima, A. Robock, G. Stephens, T. Takemura, and H. Zhang. 2013. Anthropogenic and Natural Radiative Forcing. In: *Climate Change 2013: The Physical Science Basis*. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. T.F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P. M. Midgley (eds.). Cambridge University Press, Cambridge, United Kingdom, and New York, NY, USA, pp. 659–740.
- Rivin, M. and E. Sutton. 2010. *Policies, Procedures, and Guidelines for Curation of the Orange County Archaeological and Paleontological Collections*. Based on Final Report: Development of a Model Curation Program for Orange County's Archaeological and Paleontological Collections, by P. Eisentraut, PhD, PI for Archaeology and J. Cooper, PhD, PI for Paleontology. The Cooper Center, Fullerton CA
- South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*. Available: [http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-\(1993\)](http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993))

- . 2008. *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*. October. Available: [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgattachmente.pdf](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf). Accessed: April 25, 2018.
- . 2010. *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15*. Available: [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf?sfvrsn=2). Accessed: May 1, 2018.
- . 2015. *SCAQMD Air Quality Significance Thresholds*. Available: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf>. Accessed: March 30, 2018.
- . 2016. *Final 2016 Air Quality Management Plan*. March. Available: <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=15>. Accessed: March 30, 2018.
- Southern California Association of Governments. 2004. *Regional Transportation Plan (RTP) – Adopted 2004 RTP Goals*. Available: <http://rtpscs.scag.ca.gov/Pages/2004-RTP.aspx>
- . 2008. *Regional Comprehensive Plan*. Available: <http://www.scag.ca.gov/NewsAndMedia/Pages/RegionalComprehensivePlan.aspx>.
- . 2016 *RTP/Sustainable Communities Strategy (RTP/SCS)*. Available: <http://scagrtpscscs.net/Pages/FINAL2016RTPSCS.aspx#toc>
- Santa Ana Regional Water Quality Control Board (Santa Ana Regional Board). 2016. *Basin Plan, Chapter 3 – Beneficial Uses*. Available: https://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/. Accessed: May 1, 2018.
- State Water Resources Control Board. 2015. *Geotracker*. Available: <https://geotracker.waterboards.ca.gov/>. Accessed: April 19, 2018.
- U.S. Environmental Protection Agency. 2017. *Monitor Values Report*. Last updated December 5. Available: <https://www.epa.gov/outdoor-air-quality-data/monitor-values-report>. Accessed: March 30, 2018.
- U.S. Environmental Protection Agency. 2018a. *Current Nonattainment Counties for All Criteria Pollutants*. Last updated April 30. Available: <https://www3.epa.gov/airquality/greenbook/ancl.html> Accessed: April 30, 2018.
- U.S. Environmental Protection Agency. 2018b. *U.S. Greenhouse Gas Inventory Report: 1990–2016*. Available: https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf.