ADDENDUM

to the

UPTOWN NEWPORT ENVIRONMENTAL IMPACT REPORT

State Clearinghouse No. 2010051094, Certified February 26, 2013

March 2017

Introduction

This report is an Addendum to the previously certified Uptown Newport Environmental Impact Report (Certified EIR, State Clearinghouse No. 2010051094) for the approved Uptown Newport project (Approved Project) and serves as the environmental review for the modified Uptown Newport project (Modified Project), as required pursuant to the provisions of the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq. and the State CEQA Guidelines. The Certified EIR was prepared to address the environmental impacts associated with the Approved Project and was adopted by the Newport Beach City Council on February 26, 2013.

The Addendum includes the following sections:

- Introduction. An introduction to the Uptown Newport EIR Addendum.
- Project Description. A description of the Approved Project and the proposed Modified Project.
- Environmental Analysis. A brief analysis of the Modified Project's impacts on each of the 18 environmental topical sections.
- Conclusion. Brief conclusion of the Modified Project's environmental impacts.
- Appendix A – EMF Survey

Project Description

APPROVED PROJECT

Uptown Newport is an approved master planned community (PC) consisting of up to 1,244 residential dwelling units, 11,500 square feet (SF) of retail space and two one-acre neighborhood parks situated on 25.05 acres of land located in the Airport Area on the west side of Jamboree Road between Birch Street and the intersection of Von Karman Avenue and MacArthur Boulevard in the City of Newport Beach (see Figure 1, *Approved Site Plan and Phasing Plan*).

Construction of the Approved Project will occur in two primary phases, originally projected to be completed by 2018 and 2021, respectively. To date, grading activities and construction of infrastructure and utilities associated with Phase 1 has been initiated on the western portion of the site along Jamboree Road.

At buildout, the Approved Project is projected to house approximately 2,724 residents and employ approximately 26 people in the retail component of the project. The development program from the Uptown Newport Planned Community Development Plan is reproduced below in Table 1, *Uptown Newport Development Program*.

Table 1 Uptown Newport Development Program

Land Use	Buildout
Residential	922 units
Residential Density Bonus	322 units
Total Residential	1,244 units
Commercial (Retail)	11,500 square feet

Uptown Newport received the following entitlement approvals from the City of Newport Beach in February and March 2013 through Resolution No. 2013-24 and Ordinance Nos. 2013-5 and 2013-6:

» Certified EIR, ER2012-001
» Amendment to the Planned Community Development Plans, PD2011-003
» Planned Community Development Plan, PC2012-001
» Traffic Study TS2012-005
» Tentative Tract Map (TTM) 17543, NT2012002
» Affordable Housing Implementation Plan, AH2012-001
» Development Agreement, DA2012-003

MODIFIED PROJECT

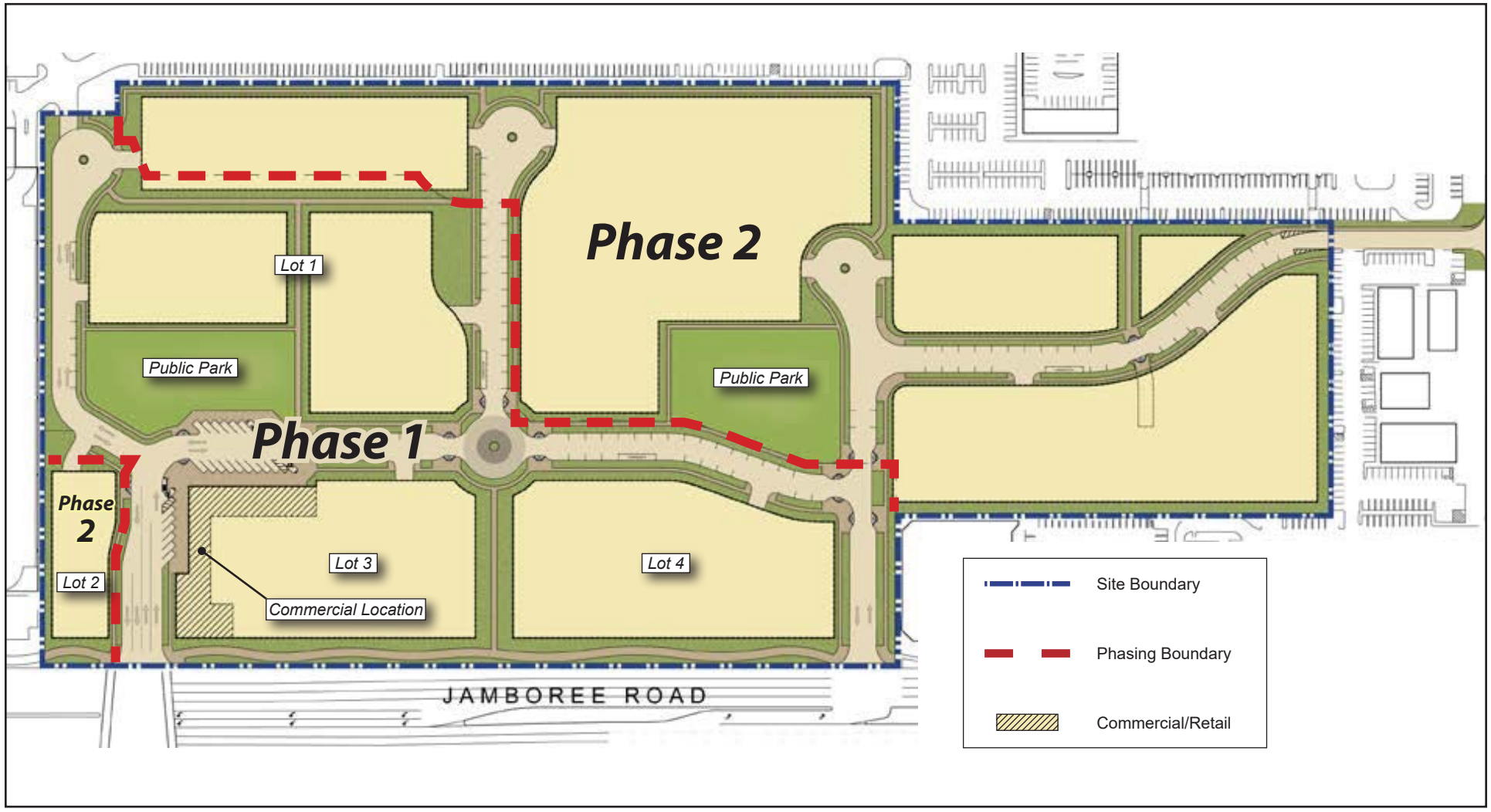
The proposed modification to the Approved Project is to amend the Uptown Newport Master Site Development Review application to relocate the approved 11,500 SF of retail space elsewhere on the property. The 11,500 SF of retail space was originally approved as part of the Uptown Newport PC, and conceptually located on the north side of Uptown Newport Drive on the ground floor of the south residential building, which is located on Lot 3 of Tract 17763 in Phase I of the project.

The Modified Project would relocate 3,500 SF of the Phase 1 retail use to Lot 2 of Tract 17763 (see Figure 2, *Modified Project Site Plan*). Lot 2 is located at the southwestern corner of the property near the intersection of Jamboree Road and Fairchild Road. Lot 2 was originally planned to be developed in Phase 2, as it currently contains a Southern California Edison (SCE) substation servicing Jazz Semiconductor. It would remain in operations during Phase I and be demolished in Phase 2 of the project. An additional 3,000 SF of retail use is proposed at the southwest corner of Lot 1, which is permitted and could be developed in Phase 1, and was previously analyzed in the certified EIR. Therefore, the retail development on Lot 1 is not considered a project change and is not analyzed in this Addendum. The remainder of the retail uses are allowed as part of future development of the Uptown Newport PC.

The certified EIR analyzed development of Lot 2 during Phase 2 of the project; however, the Modified Project is proposing to develop the relocated retail uses during Phase 1, concurrently with the proposed apartment building located on Lots 3 and 4 along Jamboree Road. Phase 1 uses contemplated for Lot 2 now include a restaurant, market, and other retail uses. The 5,000 SF remainder of the approved retail space will be located within the balance of Phase 1 or Phase 2.

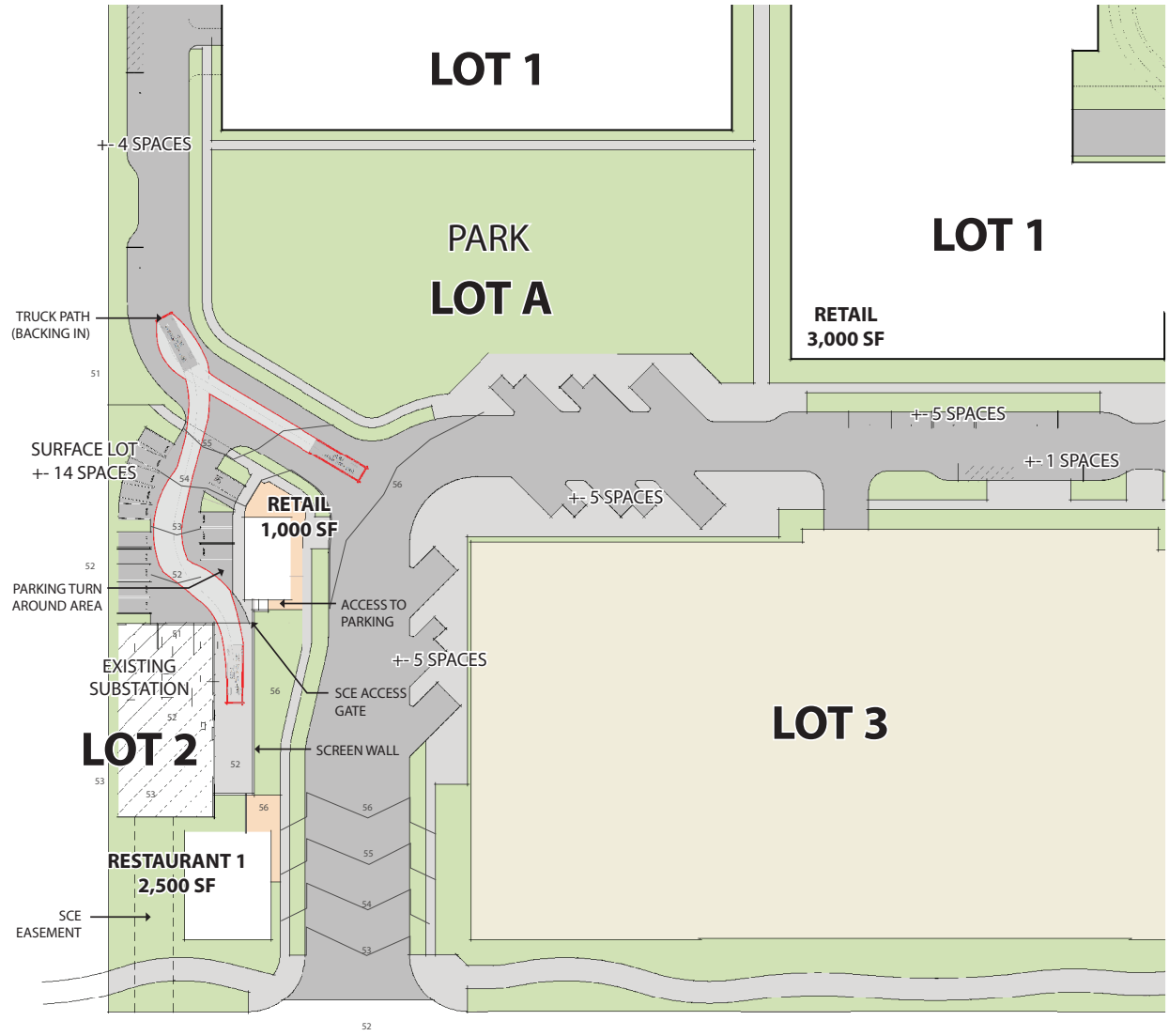
The proposed changes to the retail location requires the approval of an amendment to the Master Site Development Plan by the City of Newport Beach Planning Commission to ensure that the proposed amendment is consistent with the zoning document which allows up to 11,500 SF retail to be built throughout the Uptown Newport PC.

Figure 1 - Approved Site Plan and Phasing Plan



Source: Shopoff Realty Investment, 2017

Figure 2 - Modified Project Site Plan



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Scale (Feet)

Source: Shopoff Realty Investment, 2017

Environmental Analysis

An Addendum is required to evaluate only the changes in the project, changes in circumstances, or new information that led to the preparation of the Addendum. In other words, the project as presented in the Certified EIR is effectively treated as part of the baseline for the subsequent environmental review. Only the incremental differences in impacts are assessed (or mitigated, as necessary). This section evaluates whether or not the Modified Project is consistent with the findings contained in the Certified EIR for each environmental topical section.

AESTHETICS

PHASE 1

The Uptown Newport site is not within a state scenic highway; nor is the project site visible from any (officially designated or eligible) scenic highway. Thus, no impact to scenic resources within a state scenic highway would occur.

Additionally, relocating a portion of retail development to Lot 2 of the project site would have no substantial adverse effect on scenic vistas in the project area or substantially degrade the planned visual character or quality of the site. Development of the retail uses would comply with development standards and design guidelines detailed in the Uptown Newport Planned Community Development Plan, including setbacks, building height, building material, lighting, etc. Further, no new sources of substantial light or glare would be generated by the relocation of retail use within the project site.

PHASE 2

The Approved Project anticipated development of Lot 2 in Phase 2 of the project. The Modified Project would include introducing retail development into Lot 2 in Phase I. The substation would be demolished in Phase 2 of the project. No new adverse impacts related to aesthetics would occur.

AGRICULTURE AND FORESTRY RESOURCES

PHASE 1

The project site is not designated as important farmland or zoned for agricultural use. It also does not conflict with a Williamson Act contract and would not result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur.

PHASE 2

The analysis for Phase 1 also pertains to Phase 2.

AIR QUALITY

PHASE 1

The Certified EIR identified that construction of Phase 1 and Phase 2 of the Approved Project would result in a significant regional construction-related air quality impact as a result of the number of haul trucks and large off-road construction equipment needed for soil export. Mitigation Measures 2-1 through 2-7 were incorporated to reduce construction impacts of the project. However, despite mitigation, regional construction impacts were identified as significant and unavoidable. No significant, long-term, operational air quality impacts (regional, localized, or health risk) were identified.

The Approved Project allows up to 11,500 square feet of retail to be built within Phase 1 and/or 2 of the project. The Certified EIR evaluated construction of the retail uses in Phase 1. The Modified Project would relocate 3,500 square feet of the Phase 1 retail use to Lot 2 of Tract 17763, which was analyzed in the Certified EIR as being graded during Phase 2. Construction of the retail uses on Lot 2 during Phase 1 would not result in an increase in the maximum daily construction emissions identified in the Certified EIR. Mitigation Measures 2-1 through 2-7 would still apply to the

Modified Project to reduce the significant construction impacts. The Modified Project would not result in an increase in development intensity in Phase 1 or place sensitive receptors closer to major sources of air pollutants; and therefore, operational phase impacts would remain less than significant.

PHASE 2

The Approved Project anticipated development of Lot 2 in Phase 2 of the project. The Modified Project would include introducing retail development into Lot 2 in Phase I. Additional retail may be added to Lot 2 once the substation is demolished. However, construction and operational air quality impacts associated with the Modified Project would be the same as identified in the Certified EIR. No new adverse impacts related to air quality would occur.

BIOLOGICAL RESOURCES

PHASE 1

The development footprint for the Modified and Approved Projects are the same. Therefore, the relocation of 3,500 SF of retail use to Lot 2 would have no new substantial impacts to sensitive species, riparian habitat, natural communities, federally protected wetlands, wildlife corridors, or protected trees. The project site is also not located in an area designated as a preserve under the Orange County Central-Coastal Natural Communities Conservation Plan (NCCP). Implementation of Mitigation Measure 3-1 would ensure impacts remain less than significant.

PHASE 2

The analysis for Phase 1 also pertains to Phase 2.

CULTURAL RESOURCES

PHASE 1

The proposed relocation of retail space to Lot 2 would occur within the development footprint of the Uptown Newport site. In addition, the entire site has been previously developed, graded and disturbed. Therefore, no new substantial impact on historic, archaeological or paleontological resources would occur. Implementation of Mitigation Measures 4-1 and 4-2 would ensure impacts remain less than significant.

PHASE 2

The analysis for Phase 1 also pertains to Phase 2.

GEOLOGY AND SOILS

PHASE 1

The development footprint of the Modified and Approved Projects are the same. Therefore, the proposed relocation of retail use onsite would not expose people or structure to potential substantial geologic hazards, including active faults, seismic groundshaking, liquefaction, landslides, lateral spreading, collapse, subsidence, or expansive soils. Development of the relocated retail use would also not result in substantial soil erosion or topsoil compared to the Approved Project. Upon implementation of Mitigation Measure 6-1, impacts would be less than significant.

PHASE 2

The Approved Project anticipated development of Lot 2 in Phase 2 of the project. The Modified Project would include introducing retail development into Lot 2 in Phase I. However, no new adverse impacts related to geology and soils would occur.

GREENHOUSE GAS EMISSIONS

PHASE 1

The Certified EIR identified that Phase 1 of the Uptown Newport project would generate an increase in GHG emissions onsite but would not exceed the proposed South Coast Air Quality Management District significance thresholds. The Approved Project allows up to 11,500 square feet of retail to be built within Phase 1 and/or 2 of the project and the Certified EIR evaluated construction of the retail uses in Phase 1. The Modified Project would relocate 3,500 square feet of the Phase 1 retail use to Lot 2 of Tract 17763. Because the Modified Project would not result in an increase in development intensity in Phase 1, GHG emissions impacts during Phase 1 would remain less than significant.

PHASE 2

The Certified EIR identified that at full buildout, the Approved Project would result in a net decrease in GHG emissions, resulting in a GHG emissions benefit. The Approved Project anticipated development of Lot 2 in Phase 2 of the project. The Modified Project would include introducing retail development into Lot 2 in Phase I. GHG emissions impacts associated with the Modified Project would be the same as identified in the Certified EIR. No new adverse impacts related to GHG emissions would occur.

HAZARDS AND HAZARDOUS MATERIALS

PHASE 1

The Modified Project does not propose any additional development beyond what was analyzed in the Certified EIR. Therefore, it would not create any new significant hazards to the public or environment through routine transport, use or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions.

Further, the project site and development footprint of the Modified and Approved Projects are the same. Thus, the Modified Project would not emit hazardous emissions within one-quarter mile of an existing or proposed school; is not listed on any hazardous materials databases; would not result in airport safety hazards; and would not interfere with adopted emergency response or evacuation plans regulated by the City of Newport Beach Fire Department.

Developing 3,500 SF of retail use on Lot 2 in Phase I of the project would introduce retail use adjacent to the existing SCE substation. The Approved Project did not anticipate any development on Lot 2 until Phase 2 of the project when the substation was to be demolished. Therefore, an electro-magnetic frequency (EMF) survey was prepared to determine whether hazards associated with EMF exposure from the substation would adversely impact workers and visitors of the proposed retail development. Note there are no state or nationally recognized regulatory standards for EMF exposure for the general public. The California Department of Education has not established thresholds for exposure to EMF emissions from transmission lines and the World Health Organization (WHO) also has not established health-based thresholds for EMF exposure. After nearly 40 years of research, no scientific organization that conducts weight-of-evidence reviews has concluded that exposure to EMF is a demonstrated cause of any long-term adverse health effect. Nevertheless, an EMF survey was conducted in anticipation of potential concerns related to potential EMF exposure from the nearby SCE substation and associated 66 kilovolt transmission line.

The EMF survey consisted of measuring magnetic field strength at outdoor locations across portions of the project site in the vicinity of the SCE substation and the proposed Restaurant 1 structure and Retail structure (see Figure 2, *Modified Project Site Plan*).

The proposed location of the Retail structure had an average EMF exposure level of 0.5 milligauss (mG), which is lower than all background levels measured and lower than typical average exposures one would expect in modern society due to routine daily activities.

The proposed location of the Restaurant 1 structure had an average EMF exposure level of 5.3 mG, which is lower than all background levels measured on the northwest end of Jamboree Road (10.5 mG), but greater than the background levels measured on the southeast end of Jamboree Road. The Restaurant 1 structure's average value is also greater than a typical daily average exposure of approximately 1 mG.

The average Restaurant 1 structure EMF exposure level is also greater than EMF levels tied to the basis for the International Agency for Research on Cancer (IARC) determination that EMF is a Class 2 B carcinogen (i.e., 3 to 4 mG). However, EMF exposure at the Restaurant 1 site is not expected to cause a health hazard or safety issue because: 1) after more than 40 years of research, none of the scientific organizations that conducted weight-of-evidence reviews, including the WHO, concluded that exposure to EMF is a demonstrated cause of any long-term adverse health effect; 2) there are no appropriate or applicable numeric regulatory thresholds established for EMF exposure; 3) expected exposure durations at the Restaurant 1 structure would be much less than the durations implicit in the pooled epidemiology studies that were the basis for the IARC classification; 4) the proposed land use (restaurant) is a limited use activity with inherently limited exposure duration compared to unrestricted use activities (e.g., residential, school, etc.) and represent a corresponding lower land use priority (i.e., commercial/industrial) with respect to California Public Utilities Commission mitigation guidance; and 5) the SCE substation is slated to be demolished during Phase 2 of the Uptown Newport development. Based on the field survey, and for the reasons cited above, EMF exposure levels would not create any new significant hazards to the public or environment. The full EMF Survey is included as Appendix A of this Addendum.

Mitigation Measures 7-1 through 7-11 from the Certified EIR would also apply to the Modified Project and would ensure impacts are less than significant.

PHASE 2

The Approved Project anticipated development of Lot 2 in Phase 2 of the project. The Modified Project would include introducing retail development into Lot 2 in Phase I. However, no new adverse impacts related to hazards and hazardous materials would occur.

HYDROLOGY AND WATER QUALITY

PHASE 1

The Modified Project does not propose any additional development beyond what was analyzed in the Certified EIR. Therefore, it would not introduce new sources of pollutants from construction or operation that would violate water quality standards or waste discharge requirements; deplete groundwater supplies or interfere with groundwater recharge; alter the existing drainage pattern onsite; or contribute additional runoff waters into the City's storm drain system. The Modified Project site is also within the same development footprint as the Approved Project and is outside of 100- and 500-year Federal Emergency Management Agency-designated flood zones. Impacts would be less than significant.

PHASE 2

The Approved Project anticipated development of Lot 2 in Phase 2 of the project. The Modified Project would include introducing retail development into Lot 2 in Phase I. However, no new adverse impacts related to hydrology and water quality would occur.

LAND USE AND PLANNING

PHASE 1

The relocation of 3,500 SF of retail use would not physically divide an established community. The retail use would serve the future residents of Uptown Newport. The Modified Project would require an amendment to the Uptown Newport Master Site Development Plan; however, the Modified Project would still be consistent with the development standards detailed in the Uptown Newport Planned Community Development Plan, including parking requirements, setbacks, building heights, lighting, etc.). Additionally, the Modified Project site is the same as the Approved Project site and is not located in an area designated as a preserve under the Orange County Central-Coastal NCCP. Thus, land use and planning impacts would be less than significant under the Modified Project.

PHASE 2

The Approved Project anticipated development of Lot 2 in Phase 2 of the project. The Modified Project would include introducing retail development into Lot 2 in Phase I. However, no new adverse impacts related to land use and planning would occur.

MINERAL RESOURCES

PHASE 1

The Modified Project is located on the same site as the Approved Project and would not impact any known valuable mineral resources.

PHASE 2

The analysis for Phase 1 also pertains to Phase 2.

NOISE

PHASE 1

Relocating 3,500 SF of retail use to Lot 2 under the Modified Project would not notably change project-generated traffic flows, associated noise levels, or stationary noise sources. Mitigation Measures 10-1 through 10-6 would still be applicable to the Modified Project and would ensure impacts from stationary noise sources (i.e., truck deliveries and parking lot activities) are less than significant and exterior/interior noise levels meet City standards.

Construction vibration and noise impacts of the Modified Project would also be similar to the Approved Project. Mitigation Measures 10-7 through 10-12 would also apply and would reduce construction vibrations and noise impacts. However, as analyzed in the Certified EIR, construction noise impacts would still be significant and unavoidable.

The project site is the same for both the Modified and Approved Project. Thus, impacts from aircraft noise associated with the John Wayne Airport would similarly be less than significant.

PHASE 2

The Approved Project anticipated development of Lot 2 in Phase 2 of the project. The Modified Project would include introducing retail development into Lot 2 in Phase I. However, no new adverse impacts related to noise would occur.

POPULATION AND HOUSING

PHASE 1

The Modified Project does not propose any new residential development. No population and housing impact would occur.

PHASE 2

The analysis for Phase 1 also pertains to Phase 2.

PUBLIC SERVICES

PHASE 1

The relocation of a portion of retail use to Lot 2 on the Uptown Newport site would have no impact on public services, including fire, police, school, and library services.

PHASE 2

The Approved Project anticipated development of Lot 2 in Phase 2 of the project. The Modified Project would include introducing retail development into Lot 2 in Phase I. However, no new adverse impacts related to public services would occur.

RECREATION

PHASE 1

The relocation of 3,500 SF of retail use would not impact the availability of parks and recreational facilities to residents of Uptown Newport. The two acres of parkland proposed under the Approved Project would still be developed. No impact would occur.

PHASE 2

The analysis for Phase 1 also pertains to Phase 2.

TRANSPORTATION AND TRAFFIC

PHASE 1

The Certified EIR concluded that the Approved Project would not result in significant traffic impacts during construction and operation. The relocation of 3,500 SF of retail use to Lot 2 would not change the internal circulation in the Uptown Newport property nor the driveway access at the intersection of Jamboree Road and Fairchild Road, as evaluated in the Certified EIR.

Compared to the Approved Project, the Modified Project would include a new parking lot with approximately 14 spaces just north of the SCE substation. However, this would not result in substantial changes in the internal circulation and use of the project access driveways. Further, final parking requirements and locations will be determined during the Site Development Review process.

It is anticipated that construction of the Modified Project would be similar to the Approved Project, no additional construction-related traffic impacts would occur with the Modified Project. Additionally, since no additional development is being proposed, average daily trips and roadway and intersection levels of service would not change.

In summary, the Modified Project would not result in new substantial changes in traffic compared to the Approved Project. Impacts would be less than significant.

PHASE 2

The Approved Project anticipated development of Lot 2 in Phase 2 of the project. The Modified Project would include introducing retail development into Lot 2 in Phase I. However, no new adverse impacts related to transportation and traffic would occur.

TRIBAL CULTURAL RESOURCES

Under the California Public Resources Code Sections 21073 et seq., the Native American Historic Resource Protection Act (Assembly Bill 52 [AB 52]) took effect July 1, 2015, and incorporates tribal consultation and analysis of impacts to tribal cultural resources into the CEQA process. It requires tribal cultural resources to be analyzed like any other CEQA topic and establishes a consultation process for lead agencies and California tribes.

Projects that require a Notice of Preparation of an EIR or Notice of Intent to adopt a Negative Declaration or Mitigated Negative Declaration on or after July 1, 2015, are subject to AB 52. Since this CEQA document is an Addendum, AB 52 does not apply to the Modified Project. In addition, the entire site including Lot 2, has already been previously developed, graded and disturbed.

UTILITIES AND SERVICE SYSTEMS

PHASE 1

No additional development beyond what was analyzed in the Certified EIR is proposed. The retail use was previously analyzed to be developed during Phase I of the Approved Project. The relocation of 3,500 SF of retail use to Lot 2 of the Uptown Newport site would not alter the project's overall water demand, wastewater generation, solid waste generation, or electricity and natural gas demand. Thus, no impact would occur.

If some of the remaining 5,000 SF of allowed retail use is moved to Phase 2, utility impacts would be reduced in Phase 1. However, overall project impacts to utilities and service impacts would be the same as analyzed in the Certified EIR.

PHASE 2

The Approved Project anticipated development of Lot 2 in Phase 2 of the project. The Modified Project would include introducing retail development into Lot 2 in Phase I. However, no new adverse impacts related to utilities and service systems would occur.

Conclusion

Based on the analysis of the Modified Project, the proposed modifications to the Approved Project would have no new or increased significant impacts, and no new or changed mitigation measures would be required.

Appendix A – EMF Survey

March 2017| City of Newport Beach

EMF Survey

Uptown Newport, Newport Beach, California

Prepared for:

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1. Introduction

This report presents results of an electric and magnetic field (EMF) survey conducted on March 2, 2017, near the existing substation at the southern corner of the Uptown Newport project site, located generally at 4311 Jamboree Road, Newport Beach, California (see Figures 1, 2, and 3). The assessment focused on evaluation of magnetic fields from the Southern California Edison (SCE) substation and the associated 66 kV overhead transmission line that runs along the northwest side of Jamboree Road. Specifically, we evaluated potential exposures at the proposed locations of the Retail and Restaurant 1 buildings near the substation (see Figure 4). The EMF survey was performed at the request of the City of Newport Beach Community Development Department (CDD).

The SCE multi-circuit 66 kV transmission line along Jamboree Road is immediately adjacent to and southeast of the project site. The 66 kV power lines are supported by wooden poles, which are in the parking strip between the sidewalk and the curb for Jamboree Road.

Three power lines connect at a right angle to the 66 kV lines along Jamboree Road and feed the SCE substation on the project site. According to a Phase I Environmental Site Assessment (ESA) prepared for Conexant Systems, Inc. (EORM 2009), the ground substation includes both Edison and Conexant (now TowerJazz) transformers. The substation is within a walled enclosure that is 50 feet by 100 feet and approximately 10 feet high. The nearest (southeastern) wall of the substation is approximately 100 feet from the curb of Jamboree Road. According to the latest figure available from the City, "Lot 2 Retail Study – Phase 1," dated March 1, 2017, the proposed Restaurant 1 structure is at least 13 feet 7 inches from the substation wall; the proposed Retail structure is at least 19 feet 7 inches from the substation wall (see Figure 4).

1. Introduction

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2. Scope of Work

The EMF survey scope of work encompassed measuring magnetic field strength in a grid pattern at discrete locations across portions of the project site in the vicinity of the substation and proposed Restaurant 1 and Retail structures on March 2, 2017 (see Figure 4). EMF measurements also were recorded at selected background locations near the project site on the same day (see Figure 3). A total of 341 discrete measurements of magnetic field strength were collected at 10-foot intervals on the project site around the substation area. Background EMF measurements were collected continuously along both sides of Jamboree Road for a distance of 600 feet.

Readings were recorded in milliGauss (mG) using an Emdex "Snap" 3-Axis magnetic field strength meter. Each of the three-axis sensors measures the magnetic field, and the meter calculates a resultant field value, which is the root square mean reading. The EMDEX Snap meter has a range of 0.1 mG up to 1,000 mG. The meter displays resultant magnetic field levels every 0.5 second with an accuracy of ±1%.

Figure 4 shows the project site monitoring locations as well as the locations of the proposed Restaurant 1 and Retail structures. Background monitoring locations collected continuously along both sides of Jamboree Road are shown on Figure 3. Table 1 (in Appendix A) presents magnetic field strength readings (expressed as mG) collected at all 341 project site locations. The table also shows calculated average EMF values for the footprints of the proposed Restaurant 1 and Retail structures, as well as average values for continuous readings from two off-site background areas (600 foot stretches along the southeast and northwest sides of Jamboree Road).

2. Scope of Work

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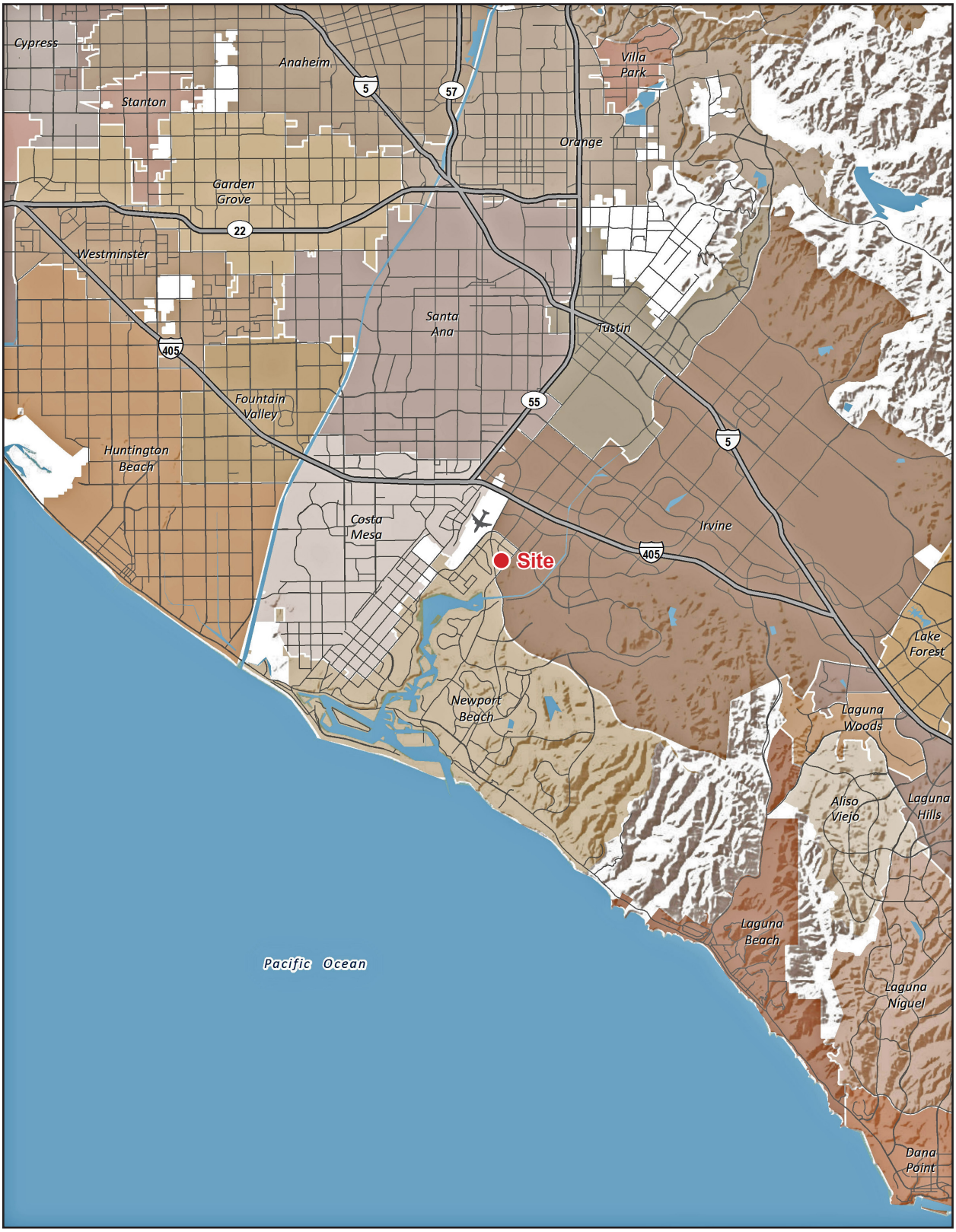
Figure 1 - Regional Location



Note: Unincorporated county areas are shown in white.

0 3
Scale (Miles)

Source: ESRI, 2017

PlaceWorks

2. Scope of Work

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Figure 2 - Local Vicinity

Source: ESRI, 2016

PlaceWorks

2. Scope of Work

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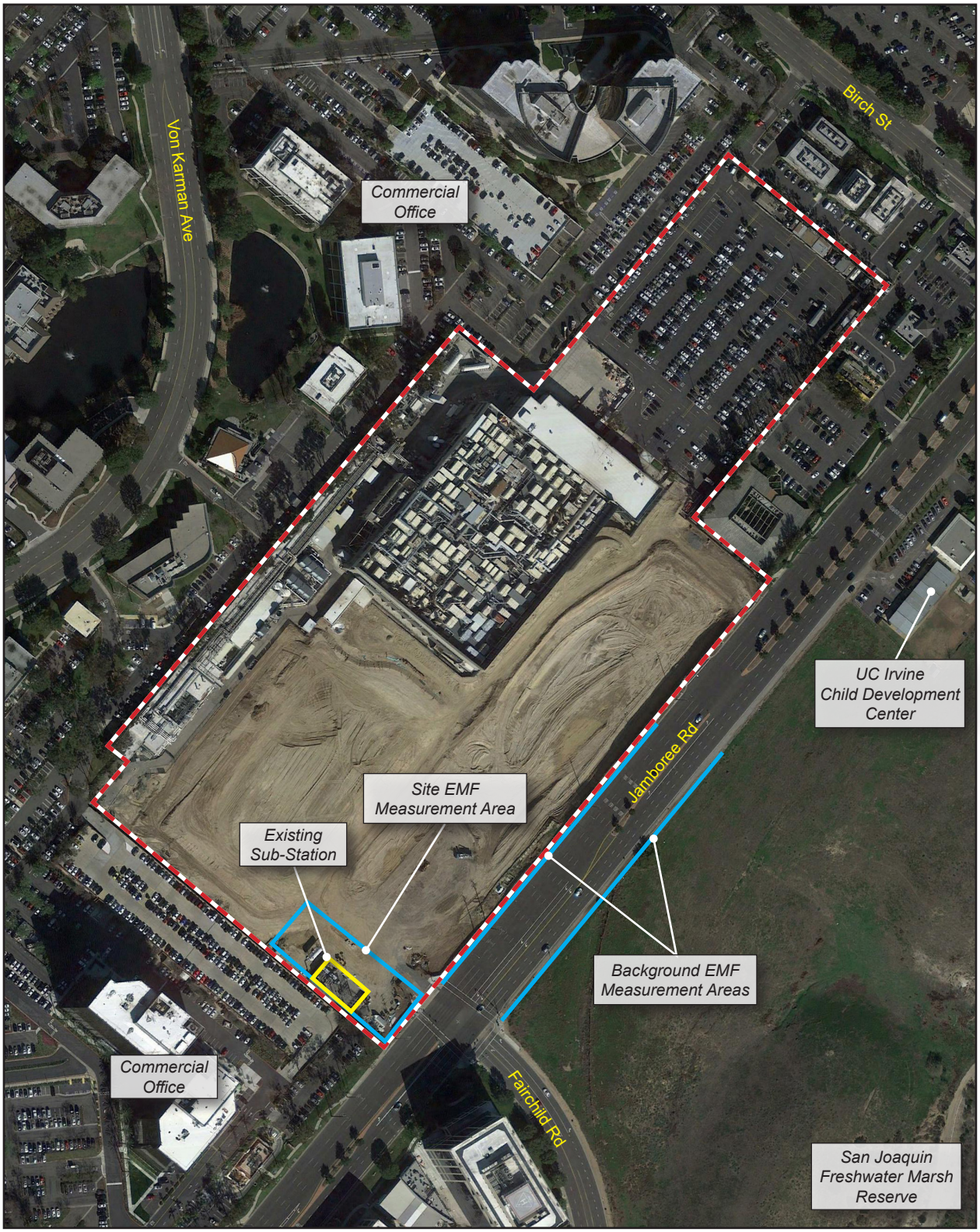
Figure 3 - Aerial Photograph



Project Site

0 300
Scale (Feet)

Source: Google Earth Pro, 2017

PlaceWorks

2. Scope of Work

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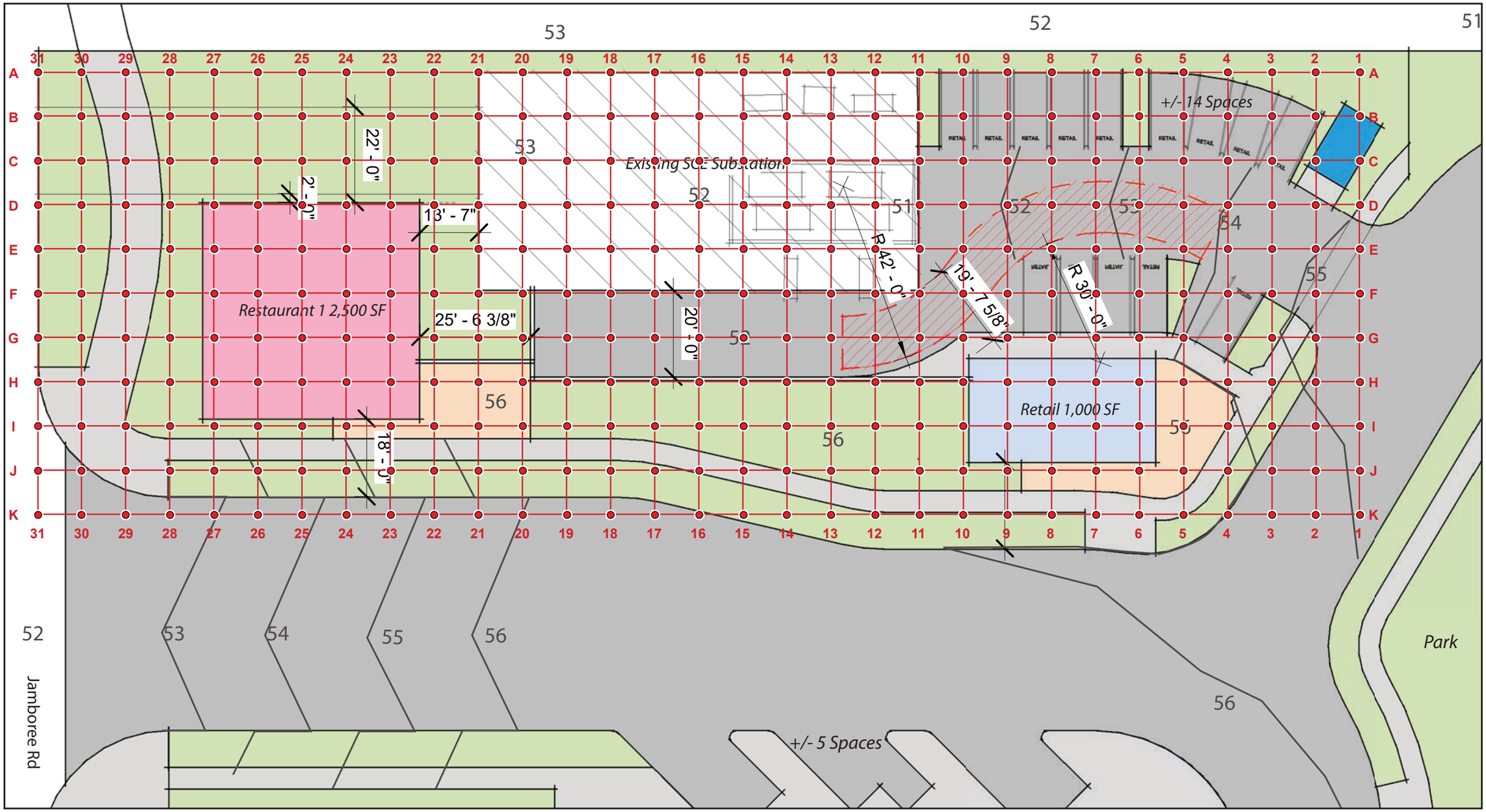
Figure 4 - EMF Monitoring Locations



Base Map Source: MVE and Partners, 2017

PlaceWorks

2. Scope of Work

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3. Regulatory Setting

3.1 POTENTIAL EFFECTS OF EMF EXPOSURE FROM TRANSMISSION LINES

There are no state or nationally recognized regulatory standards for EMF exposure of the general public because there is scientific uncertainty and lack of clear evidence that exposure to EMF is a demonstrated cause of any long-term adverse health effects. The World Health Organization (WHO) does not have established health-based thresholds for EMF exposure; however, it does list EMFs as a Class 2B "possible carcinogen," based on a determination by the International Agency for Research on Cancer (IARC). The 2B classification is used to denote an agent for which there is limited evidence of carcinogenicity in humans and less than sufficient evidence for carcinogenicity in experimental animals. This classification was based on pooled analyses of epidemiological studies demonstrating a consistent pattern of a twofold increase in childhood leukemia associated with average exposure to residential power-frequency magnetic field above 0.3 to 0.4 microtesla (μT), which is equivalent to 3 to 4 mG (WHO 2007). Other Class 2B listed possible carcinogens include coffee, welding fumes, and carpentry (IARC 2016).

After nearly 40 years of research and hundreds of studies, none of the scientific organizations that conducted weight-of-evidence reviews concluded that exposure to EMF is a demonstrated cause of any long-term adverse health effect. The evidence in support of a causal relationship is founded largely, if not entirely, on limited epidemiology studies that reported statistical associations between EMF exposure and diseases. Scientists have placed less weight on these associations because they are often inconsistent across studies, have errors in the way the study was designed or conducted, and use methods to measure EMF exposure that are unreliable. Overall, laboratory studies have not reported an increase in cancer among animals exposed to high levels of electric or magnetic fields, and no mechanism has been discovered in cellular studies that explains how electric or magnetic fields might initiate disease (Kabat 2008).

The absence of clear adverse effects after continued testing increases the probability that there is no adverse effect from long-term exposure. However, no scientific review panel can ever completely rule out the possibility that EMF in the community and workplace might have some adverse effect, due to the inherent limitations of scientific investigations. Therefore, various agencies have addressed this scientific uncertainty with precautionary policies regarding EMF exposures. The California Department of Education (CDE), for example, employs the "precautionary principle" to ensure that students and staff at school sites do not suffer adverse health effects from exposure to EMF associated with high-voltage transmission lines by establishing setback zones to minimize exposure (see Section 3.2). The Los Angeles Unified School District (LAUSD) Office of Environmental Health and Safety (OEHS) has developed guidelines to implement the CDE policy (see Section 3.3). In addition, the California Public Utilities Commission (CPUC) has established a "no cost/low cost" policy for mitigating exposures to EMF (see Section 3.4). For reference purposes, the CDE, LAUSD-OEHS, and CPUC policies are briefly addressed below.

3.2 CDE TRANSMISISON LINE SETBACK REQUIREMENTS

The California Code of Regulations (CCR), Title 5, Section 14010(c), specifies a distance setback requirement for power lines greater than 50 kV for proposed new school sites and school additions. Specifically, Section 14010(c) requires a setback of 100 feet from *overhead* 66kV power lines for proposed school sites. The regulatory requirement is summarized as follows:

> The property line of the site even if it is a joint use agreement as described in subsection (o) of this section shall be at least the following distance from the *edge of respective power line easements:* [emphasis added]

- 100 feet for 50–133 kV line
- 150 feet for 220–230 kV line
- 350 feet for 500–550 kV line

However, CDE has a policy that allows schools within the vicinity of overhead lines to apply for variances to this regulation, as described in the "Power Line Setback Exemption Guidance Policy" (CDE 2006). This guidance has been developed in consultation with international experts on the health effects of EMF; state agencies such as the Department of Public Health (DPH), the Division of the State Architect (DSA), and the California Public Utilities Commission (CPUC); electric utilities; school districts; consultants; and private citizens with an interest in the topic. CDE's past endorsement of prudent avoidance continues to form the basis of this guidance, but it also recognizes that encroachment into the setback areas may be necessary to provide schools in areas with limited site choices. The prescribed guidance acknowledges the scientific uncertainty of the health effects of EMFs, the lack of any state or nationally established standard for EMF exposure, and the CPUC's recently reconfirmed reliance upon no/low-cost measures targeted to only reduce fields from new power transmission lines.

3.2.1 Unrestricted Uses: Under 200kV Transmission Lines Only

For lines *up to* 200 kV, CDE's guidance prescribes that an exemption request can be made for *unrestricted* school site land uses within the setback, provided, among other requirements, that:

- The school district explains to CDE's satisfaction why encroachment into the setback area is necessary and addresses what other site options (if any) are available and how this site and plan compare to them, including other Title 5 standards and other safety and cost complications.

- Upon satisfaction of the above, a Field Management Plan (FMP) should be prepared by a competent professional and be submitted with the exemption request. The FMP should identify and evaluate options and include: a) low- and no-cost measures to "re-engineer" the transmission line configuration to reduce EMF exposure to the school; and b) design the school, especially electrical wiring and power components, to minimize exposure of students and staff to EMF.

3.3 LAUSD-OEHS SETBACK EXEMPTION REQUEST CRITERIA

In conformance with the CDE Guidance, LAUSD's Office of Environmental Health and Safety (OEHS) has established criteria and a process for evaluating the suitability of an exemption request for unrestricted uses within the *50–200 kV* setback areas (OEHS 2007). The following three-step process is to be completed prior to submitting a request for an exemption to the CDE:

1. Determine EMF levels on the proposed school site which are associated with the subject power lines. Whether direct measurements or modeling is utilized, EMF levels must be representative of the full capacity of the power line.

2. Measure the EMF levels within the local community adjoining the school starting at the CDE setback for the current power line configuration and extending into the community. This study should extend at least 500 feet into the community. This community survey will result in a measured, Area-Weighted Average (AWA) EMF level.

3. Compare the EMF levels determined on the school site with those determined within the local community to assess whether there is a significant difference. For purposes of this comparison, a significant difference is one standard deviation above the AWA. If the difference is determined to be insignificant then an exemption request is considered appropriate. If the difference is determined to be significant, then the exemption request is inappropriate.

3.4 CPUC EMF POLICY

Regulated public utilities, such as SCE, follow California Public Utilities Commission (CPUC) policies and design guidelines with respect to EMF reduction measures, as summarized below.

3.4.1 Historical Background of California EMF Policy

In 1993, the CPUC issued Decision 93-11-013, establishing EMF policy for California's regulated electric utilities. The Decision acknowledged that scientific research had not demonstrated that exposures to EMF cause health hazards and that it was inappropriate to set numeric standards that would limit exposure. While recognizing the scientific uncertainty, the CPUC addressed public concern over EMF by establishing a no-cost and low-cost EMF reduction policy that utilities would follow for proposed electrical facilities.

In workshops ordered by the CPUC, the utilities developed the initial EMF Design Guidelines based upon the no-cost and low-cost EMF policy. Fundamental elements of the policy and the Design Guidelines included the following:

1. No-cost and low-cost magnetic field reduction measures would be considered on new and upgraded projects.

2. Low-cost measures, in aggregate, would:

    a) Cost in the range of 4% of the total project cost;

b) Achieve a noticeable magnetic field reduction. The CPUC stated, "We direct the utilities to use 4 percent as a benchmark in developing their EMF mitigation guidelines. We will not establish 4 percent as an absolute cap at this time because we do not want to arbitrarily eliminate a potential measure that might be available but costs more than the 4 percent figure. Conversely, the utilities are encouraged to use effective measures that cost less than 4 percent." (Decision 93-11-013, Section 3.3.2, p.10)

3. For distribution facilities, utilities would apply no-cost and low-cost measures by integrating reduction measures into construction and design standards, rather than evaluating no-cost and low-cost measures for each project.

3.4.2 Current California EMF Policy

In 2006, the CPUC updated its EMF Policy in Decision 06-01-042. The decision reaffirmed that health hazards from exposures to EMF have not been established and that state and federal public health regulatory agencies have determined that setting numeric exposure limits is not appropriate. The CPUC also reaffirmed that the existing no-cost and low-cost precautionary-based EMF policy should be continued. In the decision, the CPUC required the utilities to update their EMF Design Guidelines to reflect the following key elements of the updated EMF Policy:

1. "The Commission [CPUC] has exclusive jurisdiction over issues related to EMF exposure from regulated utility facilities." (Decision 06-01-042, p. 21)

2. "…while we continue our current policy of low-cost and no cost EMF mitigation, as defined by a 4% benchmark of total project cost, we would consider minor increases above the 4% benchmark if justified under unique circumstances, but not as a routine application in utility design guidelines. We add the additional distinction that any EMF mitigation cost increases above the 4% benchmark should result in significant EMF mitigation to be justified, and the total costs should be relatively low."

3. For low cost mitigation, the "EMF reductions will be 15% or greater at the utility ROW [right-of-way]…."

4. "Parties generally agree on the following group prioritization for land use categories in determining how mitigation costs will be applied:

   a. Schools and licensed day care
   b. Residential
   c. Commercial/industrial
   d. Recreational
   e. Agricultural
   f. Undeveloped land"

5. "Low-cost EMF mitigation is not necessary in agricultural and undeveloped land except for permanently occupied residences, schools or hospitals located on these lands."

6. "… We [CPUC] do not request that utilities include non-routine mitigation measures, or other mitigation measures that are based on numeric values of EMF exposure, in revised design guidelines…." (Decision 06-01-042, p. 17)

Decision 06-01-042 directed the utilities to hold a workshop to develop standard approaches for their EMF Design Guidelines. This workshop was held in spring of 2006, and this document represents the standardized design guidelines produced as a result of that workshop. The guidelines describe the routine magnetic field reduction measures that all regulated California electric utilities will consider for new and upgraded transmission line and transmission substation projects.

These guidelines are not applied to changes made in connection with routine maintenance, emergency repairs, or minor changes to existing facilities.

3. Regulatory Setting

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4. Project Site Conditions

4.1 EXISTING SITE CONDITIONS

Existing site conditions generally are shown on the aerial photograph that serves as the base of Figure 3. Based on observations in the field and using Google Earth, the substation is within a walled enclosure that is 50 feet by 100 feet and approximately 10 feet tall. Similarly, the site boundary adjacent to Jamboree Road is approximately 100 feet from the southeast wall of the substation. It was also observed that the 66 kV transmission lines run along the northwest side of Jamboree Road. The three electrical lines feeding the substation are perpendicular to (in the horizontal plane) and slope downward (in the vertical plane) from the 66 kV transmission lines to the substation.

4.2 PROPOSED SITE MODIFICATIONS

The relevant preferred site design is shown on Figure 4. Development would include a 2,500-square-foot Restaurant 1 and a 1,000-square-foot Retail structure. As shown on Figure 4, MVE and Partners design drawing, "Lot 2 Retail Study – Phase 1," dated March 1, 2017, shows the Retail structure at least 19 feet 7 inches from the northern corner of substation. Similarly, the Restaurant 1 structure is shown at least 13 feet, 7 inches from the southeast wall of the substation. The figure also shows that Restaurant 1 is as close as about 35 feet from the 66 kV transmission line poles on Jamboree Road; the Retail structure is shown about 210 feet from the 66 kV poles.

4. Project Site Conditions

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5. EMF Survey Results and Discussion

Table 1 in Appendix A includes all EMF survey results. All readings were taken on March 2, 2017, between 10:45 am and 12:45 pm. Table 1shows magnetic field strength readings (expressed as mG) collected at all project site locations. Monitoring point locations are shown on Figure 4. The average of the EMF levels measured within the projected footprints of the Restaurant 1 and the Retail structures are also shown on Table 1. Background EMF measurements were collected continuously along both sides of Jamboree Road, for a distance of 600 feet, as depicted on Figure 3. Table 1 also shows the average EMF level measured in these two background areas.

As shown in Table 1 and depicted on Figure 4, average EMF values for the footprint of the Restaurant 1 and the footprint of the Retail structure were calculated. In addition, average background values were calculated for two 600-foot stretches of Jamboree Road (see Figure 3). The average EMF value calculated for the proposed Restaurant 1 (5.3 mG) and the average EMF value calculated for the proposed Retail structure (0.5 mG) are less than the average background value measured along the northwest side of Jamboree road (10.5 mG). The average EMF value calculated for the proposed Retail structure (0.5 mG) also is less than the average background value measured along the southeast side of Jamboree Road (1.2 mG). In contrast, the average EMF calculated for the proposed Restaurant 1 (5.3 mG) exceeds the average background value measured along the southeast side of Jamboree road (1.2 mG). However, even if the proposed restaurant were a school site, according to CDE criteria (CDE 2006), an exemption request to allow construction of the school with "unrestricted" uses within the CDE's 100-foot setback would be appropriate due to the relatively low voltage (66 kV) of the transmission line/substation.

While there are no numerical standards established for EMF exposure, the school siting authorities in California have established mitigation policies based on the "precautionary principle." We also note that the CDE guidance for setback distances from transmission lines are advisory only, and utilization or compliance is not required by regulation or CDE. In addition, although the guidance addresses "transmission" lines, CDE notes that school districts should consider the feasibility of decreasing or mitigating exposure from EMF from all sources on any existing or proposed school campus.

The average EMF level detected during the survey within the proposed footprint of the proposed retail structure (~0.5 mG), while not representative of a pristine EMF environment, was within a typical range (about 1 mG) of exposures one could expect in a society with electrical power. The average value calculated for the Restaurant 1 footprint (5.3 mG) was above the typical level of exposure one could expect from routine daily activities. For example, a comprehensive survey of California public schools indicated that 80 percent of the surveyed school areas and 83 percent of the classrooms had average magnetic fields of less than 1 mG (CDHS 2001).

As noted above, the World Health Organization (WHO) has not established health-based thresholds for EMF exposure. WHO does, however, list Extremely Low Frequency (ELF) EMFs as a Class 2B "possible

5. EMF Survey Results and Discussion

carcinogen," based on a determination by the International Agency for Research on Cancer (IARC). This classification was based on pooled analyses of epidemiological studies demonstrating a consistent pattern of a twofold increase in childhood leukemia associated with average exposure to residential power-frequency magnetic field above 3 to 4 mG.

Focusing on magnetic fields above 3 to 4 mG as thresholds of concern is problematic because these values are not regulatory thresholds, and no agency has established numeric regulatory thresholds. Moreover, the WHO emphasizes that after extensive review, the available evidence is not strong enough to be considered causal between exposures to EMF and childhood leukemia or any health hazards. Additionally, the CPUC specifically discourages mitigation measures based on numerical values of EMF exposure (see Section 3.4.2). With these important caveats, we note that the average value determined for the Retail structure (0.5 mG) is less than the levels tied to the basis for IARC's determination (i.e., 3 to 4 mG), whereas the average value determined for Restaurant 1 structure (5.3 mG) is greater than the basis for IARC's determination.

6. Strategies to Reduce EMF Exposure

In the context of the "prudent avoidance" policy, it may be worthwhile to consider reducing exposures to EMF.

There are two methods for reducing EMF exposure: 1) implementation of feasible low or no cost methods for reduction in the source of EMF levels (e.g., transmission line or substation), and 2) incorporating appropriate site design measures and EMF best management practices to reduce exposure to EMF at the site.

Changes to the existing 66 kV transmission lines and substation could theoretically reduce magnetic field levels in the portions of the proposed project site where exposures are elevated above background or typical levels. These changes could include rephasing the 66 kV circuits for optimum field cancellation (if they are not currently optimized), increasing pole height (to reduce field levels at the ground), relocating the lines farther away from the site, or relocating the lines underground.

The cost to implement these changes could range into the many hundreds of thousand dollars. However, most of the field reduction would occur within limited use areas (access road, near site boundary, and landscaped areas) along the southwestern boarder of the project site and other low intensity use areas. Because of the time, effort, and cost to implement any of these types of changes, combined with the fact that occasional visitors and workers would normally not spend a significant amount of time in these limited use areas, such changes are not warranted. For example, restaurant visitors make occasional visits to such establishments. Similarly, workers in restaurants tend to have high turnover rates and not long-duration work histories at one establishment. Therefore, it does not appear to be practical or cost-effective to make these changes as a field reduction option.

If upgrades to the existing 66 kV lines are required in the future, SCE can work with the City to identify low EMF configurations that could be implemented to reduce EMF exposure at the site at that time. In addition, the substation is already slated to be removed during Phase 2 of the proposed Uptown development. Based on these reasons, it is not recommended that transmission line/substation upgrades be considered for this site.

The project site layout has been designed to place limited use activities and lower intensity uses closer to the substation and transmission lines. Some additional design measures—unrelated to the substation/transmission line—that can be considered for implementation and incorporation into the site design to reduce EMF exposure at the Restaurant 1 are described below.

The primary cause of high EMF levels within structures generally is from "net currents" (CDHS 2001). Most wiring in homes and commercial buildings consists of cables containing two or more current-carrying conductors. At any point in time, an equal current is flowing in one direction on one wire and in the opposite direction on another wire. Since these wires are very close together inside the cable jacket or conduit, the magnetic field around one wire is cancelled by the opposite magnetic field around the other wire. The field

6. Strategies to Reduce EMF Exposure

drops to a negligible level a few inches from the wires. In this case, there is no net current on the circuit. Problems occur when this balance is destroyed by improperly wired circuits. Common examples are:

- Neutrals from separate branch circuits that are connected anywhere beyond the point of origin.
- Neutral-ground shorts (intentional or inadvertent) anywhere on the system.
- Improperly wired subpanels (a form of neutral-ground shorts).
- Incorrect three-way switch wiring where the hot and neutral are fed to different points in the circuit.

Therefore, site design could focus on correct wiring within the restaurant and other structures to ensure that there are no net current magnetic fields. To eliminate this problem, the wiring in all structures should be compliant with the currently adopted US National Electric Code (NEC) and the California Electrical Code. All rooms should be free of the common wiring errors listed above. The correctness of the wiring should be checked in each room, and the goal is for measured EMF levels to comply with 1 mG for new construction and 2 mG for buildings undergoing modernization.

Other causes of elevated EMF levels inside buildings are electrical panels, fluorescent lights, office equipment, power cables, power transformers, air conditioners, transmission and distribution lines, and currents in water mains. The following strategies can be implemented to minimize these potential causes of elevated EMF levels:

- Locate high occupancy areas such as occupied rooms as far as possible from magnetic field sources.
- Locate electrical panels, transformers, mechanical equipment, raceways, etc., as far as possible from occupied areas.
- Locate electrical equipment in dedicated spaces that are not normally occupied (i.e., equipment rooms, storage rooms, and supply rooms).
- Locate the service transformer and main switchboard as close as possible and practical to the main service street connection.
- Locate transformers, switchgear, and large panels remote from occupied spaces in outdoor or parking structures.
- Locate equipment and equipment rooms so they are not adjacent to, directly above, or directly below occupied spaces.
- Disburse power via low occupancy areas and keep major wiring runs away from heavily used spaces.
- Use EMF-free or low-EMF electrical wiring, where appropriate.

- Design distribution lines to minimize EMF fields with the following options:
  - Place distribution lines underground and shield in steel pipe or steel jacket, if possible.
  - Close spacing or bundling of hot and neutral conductors.
  - Use of triplex for service drops.
- Avoid routing underground feeders to pass under occupied spaces; where underground feeders have to pass beneath the concrete slab to terminate at a distribution panel inside the building, install conduits 24 inches below finished floor.
- If power is brought in overhead, avoid bringing it in adjacent to occupied rooms or areas.
- Minimize currents by using higher voltages whenever practical.
- Avoid multiple main electric panels, which can create the potential for a current loop, resulting in high EMF levels throughout the occupied building space.
- Gas, electric, telephone, cable, and water systems should be located to enter buildings as close together as possible and bonded per the NEC to prevent an objectionable flow of current over the grounding conductors or grounding paths.
- Use LED lights or electronic ballasts in place of magnetic ballasts for fluorescent lights, and mount the ballast in remote locations away from occupied space, where possible.

In addition, low EMF equipment can be specified for use in the restaurant/retail and other occupied spaces. Computer monitors, copy machines, microwave ovens, and similar electric equipment can generate considerable EMF levels in the near field.

To the extent practical, these magnetic field reduction strategies can be considered for incorporation into the design of the proposed site improvements to reduce exposure for staff and visitors. The EMF Checklist by the California EMF Program (CEHTP 2014) can be used to verify the implementation of any such field reduction strategies.

6. Strategies to Reduce EMF Exposure

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7. Summary and Conclusion

An SCE multi-circuit 66 kV overhead transmission line along the northwest side of Jamboree Road is immediately adjacent and southeast of the project site. The 66 kV power lines are supported by wooden poles, which are in the parking strip between the sidewalk and the curb for Jamboree Road.

Three power lines connect at a right angle to the 66 kV lines along Jamboree Road and feed the SCE substation at the southern border of the project site. The substation is within a walled enclosure that is 50 feet by 100 feet and about 10 feet high.

The nearest (southeast) wall of the substation is approximately 100 feet from the curb of Jamboree Road. According to the latest figure available from the City, "Lot 2 Retail Study – Phase 1," dated March 1, 2017, the proposed Restaurant 1 structure is at least 13 feet 7 inches from the substation wall, and the proposed Retail structure is at least 19 feet 7 inches from the substation wall (see Figure 4).

The previously approved Uptown Newport project did not anticipate any development on Lot 2 until Phase 2 of the project when the substation was to be demolished. However, the Modified Project is now proposing to develop 3,500 square feet of retail/restaurant use on Lot 2 in Phase 1, which would introduce retail/commercial use near the existing SCE substation (see Figure 4). Therefore, this EMF assessment was prepared to determine whether hazards associated with EMF exposure from the substation would adversely impact workers and visitors of the proposed retail/restaurant development. EMF field measurements were taken at Lot 2 and at offsite locations near the site to compare EMF exposure levels.

The EMF survey scope of work encompassed measuring magnetic field strength in a grid pattern at discrete locations across portions of the project site in the vicinity of the substation and proposed Restaurant 1 and Retail structures on March 2, 2017 (see Figure 4). EMF measurements were also recorded at selected background locations near the project site on the same day (see Figure 3). A total of 341 discrete measurements of magnetic field strength were collected at 10-foot intervals on the project site around the substation area. Background EMF measurements were collected continuously along both sides of Jamboree Road for a distance of 600 feet.

The proposed location of the Retail structure had an average EMF exposure level of 0.5 mG, which is lower than all background levels measured and lower than typical average exposures one would expect in a modern society due to routine daily activities.

The proposed location of the Restaurant 1 structure had an average EMF exposure level of 5.3 mG, which is lower than all background levels measured on the northwest side of Jamboree Road (10.5 mG), but greater than the background levels measured on the southeast side of Jamboree Road. The Restaurant average value is also greater than a typical daily average exposure of about 1 mG and greater than the levels tied to the basis for IARC's determination that EMF is a Class 2B carcinogen (i.e., 3 to 4 mG). However, it is instructive to note that if the restaurant were a school site, according to CDE (2006) criteria, an exemption request to allow

7. Summary and Conclusion

construction of the school with "unrestricted" uses within the CDE's 100-foot setback would be allowed due to the relatively low voltage (66 kV) of the transmission line/substation. In addition, the proposed Restaurant and Retail structures would be considered "restricted" uses, which have greater leeway in terms of EMF exposure and reduction policies.

In summary, the average EMF level calculated for the proposed Restaurant 1 structure (5.3 mG) would not be expected to cause a health hazard or safety issue because: 1) after more than 40 years of research, none of the scientific organizations that conducted weight-of-evidence reviews, including WHO, concluded that exposure to EMF is a demonstrated cause of any long-term adverse health effect; 2) there are no appropriate or applicable numeric regulatory thresholds established for EMF exposure; 3) expected exposure durations at the restaurant would be much less than the durations implicit in the pooled epidemiology studies that were the basis for the IARC classification; 4) the proposed land use (restaurant) is a limited use activity with inherently limited exposure duration compared to unrestricted use activities (e.g., residential, school, etc.) and represents a corresponding lower land use priority (i.e., commercial/industrial) with respect to CPUC EMF reduction guidance; and 5) the substation is slated to be removed during Phase 2 of the Uptown Newport development.

In conclusion, based on the field survey, and for the reasons cited above, EMF exposure levels at the proposed Restaurant 1 and Retail locations would not create any new significant hazards to the public or environment.

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8. References

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Appendix A. EMF Monitoring Results

Table 1

On and Off Site Magnetic Field Measurments (expressed as milligauss [mG]) at Uptown Newport Site

	Monitoring Location Grid Column ID ("A" through "K") -- (see Figure 4)											
Monitoring Location Grid Row ID ("1" to "31"; (see Figure 4)	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	K	**Average of All (A-K) Grid Column Points, for each Grid Row (1-31)**
1	0.9	2.2	2.4	1.8	0.9	0.6	0.4	0.2	0.2	0.2	0.2	**0.9**
2	0.5	1.0	2.5	3.5	1.8	0.9	0.6	0.4	0.2	0.2	0.2	**1.1**
3	0.5	1.1	3.0	3.8	2.4	1.3	0.5	0.3	0.2	0.2	0.2	**0.9**
4	0.5	0.8	1.3	3.9	5.8	2.4	1.1	0.5	0.3	0.2	0.3	**1.6**
5	0.3	0.6	2.0	4.1	6.8	2.6	0.7	0.3	0.4	0.3	0.3	**1.7**
6	0.4	0.9	1.6	4.0	7.0	4.5	1.2	0.7	0.3	0.4	0.3	**1.9**
7	0.4	0.5	1.5	4.6	7.5	5.0	0.7	0.5	0.4	0.4	0.4	**2.0**
8	0.6	0.7	0.8	2.6	8.0	3.8	0.8	0.5	0.5	0.4	0.4	**1.7**
9	1.3	1.5	1.7	2.9	7.0	3.3	1.2	0.7	0.6	0.5	0.5	**1.9**
10	2.0	2.6	2.9	8.0	6.5	1.2	0.8	0.7	0.6	0.5	0.5	**2.4**
11	6.5	6.9	8.9	10.1	14.1	10.1	2.0	1.2	0.8	0.6	0.6	**5.6**
12						9.8	3.3	1.2	0.9	0.7	0.7	**2.8**
13						9.9	3.6	2.1	1.4	1.0	0.8	**3.1**
14						6.8	2.9	1.8	1.2	1.0	0.9	**2.4**
15						5.7	3.2	2.2	1.5	1.2	1.1	**2.5**
16						6.0	2.9	1.9	1.5	1.3	1.2	**2.5**
17						6.0	3.7	2.7	2.0	1.6	1.5	**2.9**
18						6.1	3.3	2.3	1.9	1.6	1.6	**2.8**
19						5.2	3.7	3.0	2.2	1.9	1.8	**3.0**
20						5.4	3.6	2.6	2.4	2.2	1.9	**3.0**
21	7.3	12.2	13.4	10.8	7.7	5.5	3.5	2.7	2.6	2.4	2.1	**6.4**
22	6.2	8.0	10.2	8.6	7.2	5.2	4.2	3.3	2.8	2.6	2.6	**5.5**
23	5.2	7.3	8.2	7.5	6.2	5.2	5.0	4.2	3.5	3.2	3.0	**5.3**
24	4.0	5.6	6.8	6.6	5.9	5.1	4.4	3.7	3.3	3.4	3.3	**4.7**
25	3.8	4.6	6.1	6.5	5.9	5.3	5.0	4.6	4.2	4.0	3.9	**4.9**
26	3.2	3.7	4.7	5.8	5.6	5.6	5.2	4.8	4.4	4.3	4.4	**4.7**
27	2.7	3.2	4.5	5.5	5.9	6.0	5.8	5.4	4.9	5.1	5.0	**4.9**
28	3.5	3.7	4.8	5.7	6.2	6.3	6.0	5.6	5.2	5.6	5.5	**5.3**
29	4.9	5.1	5.4	6.2	7.1	8.0	8.1	5.8	7.0	6.1	6.5	**6.4**
30	5.0	5.3	5.6	6.9	7.4	8.3	8.9	6.2	7.9	7.8	7.9	**7.0**
31	7.5	8.2	8.6	9.2	10.0	10.4	10.4	10.3	10.2	10.2	11.5	**9.7**
Average of All (1-31) Grid Row Points, for each Grid Column (A-K)	**0.9**	**3.9**	**4.9**	**5.8**	**6.5**	**5.4**	**3.4**	**2.7**	**2.4**	**2.3**	**2.3**	

Additional Average Measurements On and Off Site

Average of All Measurement Points within Restaurant 1 Footprint	**5.3**	
Average of All Measurement Points within Retail Footprint	**0.5**	
Average Background EMF Measured Along Southeast End of Jamboree Road	**1.2**	Continous EMF readings were collected along a 600 foot stretch of Jamboree Road (southeast side, across from the project site).
Average Backrgound EMF Measured Along Northwest End of Jamboree Road	**10.5**	Continous EMF readings were collected along a 600 foot stretch of Jamboree Road (northwest side, adjacent to the project site).Measurements taken from under 66 kV.