Judicial Assistance Grant (JAG) PROJECT

Draft NEPA Environmental Assessment for the Mount Lukens Communications System Upgrade Project

Prepared for:

U.S. Department of Justice
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</tr>
<tr>
<td>DPM</td>
<td>Diesel Particulate Matter</td>
</tr>
<tr>
<td>EA</td>
<td>Environmental Assessment</td>
</tr>
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<td>ECOS</td>
<td>Environmental Conservation Online System</td>
</tr>
<tr>
<td>EIS</td>
<td>Environmental Impact Statement</td>
</tr>
<tr>
<td>Acronym</td>
<td>Definition</td>
</tr>
<tr>
<td>---------</td>
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</tr>
<tr>
<td>EO</td>
<td>Executive Order</td>
</tr>
<tr>
<td>ESA</td>
<td>Endangered Species Act</td>
</tr>
<tr>
<td>FAA</td>
<td>Federal Aviation Administration</td>
</tr>
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<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
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<td>FIRM</td>
<td>Flood Hazard Insurance Maps</td>
</tr>
<tr>
<td>FONSI</td>
<td>Finding of No Significant Impact</td>
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<td>FP</td>
<td>Fully Protected Species</td>
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<td>GHG</td>
<td>Greenhouse Gases</td>
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<td>GIS</td>
<td>Geographic Information System</td>
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<tr>
<td>GWP</td>
<td>Global Warming Potential</td>
</tr>
<tr>
<td>HAP</td>
<td>Hazardous Air Pollutant</td>
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<tr>
<td>HC</td>
<td>Hydrocarbons</td>
</tr>
<tr>
<td>HFCs</td>
<td>Hydrofluorocarbons</td>
</tr>
<tr>
<td>HUD</td>
<td>Housing and Urban Development</td>
</tr>
<tr>
<td>IS</td>
<td>Initial Study</td>
</tr>
<tr>
<td>JAG</td>
<td>Justice Assistance Grant</td>
</tr>
<tr>
<td>LACSD</td>
<td>Los Angeles County Sanitation Districts</td>
</tr>
<tr>
<td>LADPW</td>
<td>Los Angeles County Department of Public Works</td>
</tr>
<tr>
<td>LA-RICS</td>
<td>Los Angeles Regional Interoperability Communications System</td>
</tr>
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<td>LARWQCB</td>
<td>Los Angeles Regional Water Quality Control Board</td>
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<tr>
<td>LUST</td>
<td>Leaking Underground Tank</td>
</tr>
<tr>
<td>MBTA</td>
<td>Migratory Bird Treaty Act</td>
</tr>
<tr>
<td>MEP</td>
<td>Maximum Extent Practicable</td>
</tr>
<tr>
<td>MLD</td>
<td>Most Likely Descendent</td>
</tr>
<tr>
<td>MSAT</td>
<td>Mobile Source Air Toxics</td>
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<td>MSWMP</td>
<td>Municipal Storm Water Management Program</td>
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<td>N2O</td>
<td>Nitrous Oxide</td>
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<td>NAAQS</td>
<td>National Ambient Air Quality Standards</td>
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<td>NAHC</td>
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<td>NHD</td>
<td>National Hydrography Dataset</td>
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<td>NHPA</td>
<td>National Historic Preservation Act</td>
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<td>NO</td>
<td>Nitric Oxide</td>
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<tr>
<td>NOI</td>
<td>Notice of Intent</td>
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<tr>
<td>NOx</td>
<td>Nitrogen Oxides</td>
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<td>NPDES</td>
<td>National Pollutant Discharge Elimination System</td>
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<td>HRHP</td>
<td>National Register of Historic Places</td>
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<td>NWP</td>
<td>Nationwide Permit</td>
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<td>O3</td>
<td>Ozone</td>
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<tr>
<td>OHWM</td>
<td>Ordinary High Water Mark</td>
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<tr>
<td>PAHs</td>
<td>Polycyclic Aromatic Hydrocarbons</td>
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<td>PCN</td>
<td>Pre-construction Notification</td>
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<td>PFCs</td>
<td>Perfluorocarbons</td>
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<tr>
<td>PM</td>
<td>Particulate Matter</td>
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<tr>
<td>PUST</td>
<td>Permitted Underground Storage Tank</td>
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<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
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<tr>
<td>ROG</td>
<td>Reactive Organic Gases</td>
</tr>
<tr>
<td>RPW</td>
<td>Reasonably Permanent Waters</td>
</tr>
<tr>
<td>RWQCB</td>
<td>Regional Water Quality Control Board</td>
</tr>
<tr>
<td>SCAB</td>
<td>South Coast Air Basin</td>
</tr>
<tr>
<td>Acronym</td>
<td>Definition</td>
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<tr>
<td>---------</td>
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</tr>
<tr>
<td>SCAG</td>
<td>Southern California Association of Governments</td>
</tr>
<tr>
<td>SCAQMD</td>
<td>South Coast Air Quality Management District</td>
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<td>SCCIC</td>
<td>South Central Coastal Information Center</td>
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<td>SCE</td>
<td>Southern California Edison</td>
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<tr>
<td>SF₆</td>
<td>Sulfur Hexafluoride</td>
</tr>
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<td>SHPO</td>
<td>California State Historic Preservation Office</td>
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<td>SIP</td>
<td>California State Implementation Plan</td>
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<td>SLF</td>
<td>Sacred Lands File SSC Species of Special Concern</td>
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<td>SWPPP</td>
<td>Storm Water Pollution Prevention Plan</td>
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<td>SWRCB</td>
<td>State Water Resources Control Board</td>
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<td>TAC</td>
<td>Toxic Air Contaminant</td>
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<tr>
<td>TEPC</td>
<td>Threatened, Endangered, Protected or Candidate Species</td>
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<td>TMDLs</td>
<td>Total Maximum Daily Loads</td>
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<td>TNW</td>
<td>Traditionally Navigable Waters</td>
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<tr>
<td>TOG</td>
<td>Total Organic Gases</td>
</tr>
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<td>UNFCCC</td>
<td>United Nations Framework Convention on Climate Change</td>
</tr>
<tr>
<td>USACE</td>
<td>U.S. Army Corps of Engineers</td>
</tr>
<tr>
<td>USDA</td>
<td>U.S. Department of Agriculture</td>
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<tr>
<td>USEPA</td>
<td>U.S. Environmental Protection Agency</td>
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<tr>
<td>USFS</td>
<td>U.S. Forest Service</td>
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<td>USFWS</td>
<td>U.S. Fish and Wildlife Service</td>
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<td>USGS</td>
<td>U.S. Geological Survey</td>
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<tr>
<td>USTs</td>
<td>Underground Storage Tanks</td>
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<tr>
<td>VOC</td>
<td>Volatile Organic Compound</td>
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<td>WDRs</td>
<td>Waste Discharge Requirements</td>
</tr>
<tr>
<td>WOUS</td>
<td>Waters of the United States</td>
</tr>
<tr>
<td>WQOs</td>
<td>Water Quality Objectives</td>
</tr>
<tr>
<td>WSC</td>
<td>Waters of the State</td>
</tr>
</tbody>
</table>
1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The City of Los Angeles will use Recovery Act: Edward Byrne Memorial Justice Assistance Grant (JAG) Formula Program-Local Solicitation funds to provide upgrades to one (1) existing communications facility located within the Angeles National Forest in the County of Los Angeles (“County”), on lands leased by the City of Los Angeles Department of Water and Power (“City”). This communications facility will continue to provide communications coverage to City and County emergency first responders.

1.2 PURPOSE AND NEED

As American Reinvestment and Recovery Act (ARRA) Justice Assistance Grant (JAG) is a public safety grant, it will be utilized to develop and improve existing City communications sites in need of upgrades. As one of the City of Los Angeles’ radio communications sites, the Mount Lukens radio communications site is one of the most important. The existing mobile data systems used by public safety first responders in the City of Los Angeles severely limits the amount and type of information that can be accessed and generated by field users. Access to a highly reliable broadband data system is necessary to support the modern, data-intensive, situational awareness applications that are needed by the City of Los Angeles Fire and Police Departments and other law enforcement and public safety personnel.

The City has applied its funding allocations to support a radio and communications site that is vital to law enforcement, medical, and other first response personnel. It is understood that this site may be incorporated into the planned Los Angeles Regional Interoperable Communications System (LA-RICS) network at a later date.

The purpose of the Proposed Action is to:

- Provide better interoperability so that agencies and jurisdictions can mutually respond to disasters;
- Strengthen disaster recovery capability;
- Strengthen day-to-day enhanced operability;
- Upgrade capacity to 34,000 users simultaneously, more than twice the estimated need; and
- Eliminate unnecessary radio systems that will reduce need to build and maintain the region’s current communications infrastructure by 50%.

As a result of implementing the project, an improvement in public safety for the almost 4 million City residents will occur.

1.3 PROJECT DESCRIPTION

The proposed project includes improvements to the Mount Lukens Communication Site, located at the top of Mount Lukens, on property leased by the City from the United States Forest Service (USFS) in the Angeles National Forest. The project includes the construction of a new communications tower which upgrades the current emergency response system at the present location. The result of the review of the proposed project will determine whether the existing communications towers need to be demolished and in consequence, the existing radio antennas on the existing communications towers need to be relocated to the newly built communications tower. Although this proposed project is considered to be a stand-alone project separate from
the Los Angeles Regional Interoperability Communications System (LA-RICS) project, the upgrade/improvements made to the Mount Lukens Communications Site will be LA-RICS compatible and allow the LA-RICS project to be supported at the site should the LA-RICS project decide to use the Mount Lukens site in the future.

The analysis in this document assumes that, unless otherwise stated, the project will be designed, constructed and operated following all applicable laws, regulations, ordinances and formally adopted City standards (e.g., Los Angeles Municipal Code and Bureau of Engineering Standard Plans). Also, this analysis assumes that construction will follow the uniform practices established by the Southern California Chapter of the American Public Works Association (e.g., Standard Specifications for Public Works Construction and the Work Area Traffic Control Handbook) as specifically adapted by the City of Los Angeles (e.g., The City of Los Angeles Department of Public Works Additions and Amendments to the Standard Specifications For Public Works Construction (AKA "The Brown Book," formerly Standard Plan S-610)).

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services, and activities.

1.4 PROPOSED ACTION

The proposed project includes the following main components:

- Construction of a new, approximately 109-foot above-ground self-supporting steel four legged communication tower, including footing, cable trays and all appurtenances.

1.5 ALTERNATIVES ANALYSIS

The City, in establishing viable alternatives for further discussion, established a set of screening criteria to determine the feasibility of the alternatives. The criteria were based on the objectives for the project:

- The first objective of the project is to improve the radio tower at Mount Lukens as it is most urgently in need of refurbishment in order to continue providing communications support to law enforcement, medical, and other first response personnel.
- The second objective of the project is to strengthen disaster recovery capability, day-to-day enhanced operability, and increase surge capacity through incorporating the Mount Lukens site into the operations of the LA-RICS network.

The screening criteria being used to evaluate the project objectives (and feasibility of the alternatives) focus on system performance and system reliability. Detailed explanations of each are below:

- System Performance: The ability of the project to operate at an optimum level; provide usage for simultaneous users (e.g. first responders); and upload and download data at an accelerated rate.
- System Reliability/Resiliency: The proposed site location needs City site control; have ample back-up power available; and the tower location must be as reliable as possible (i.e. immune to natural disasters or other natural factors).
Based on the criteria and objectives of the project, the City has determined that the Proposed Action and the No Action Alternative are the only viable alternatives to be analyzed within this EA.

1.6 EXISTING ENVIRONMENT

The proposed project will be located on sloping ground on the summit of Mount Lukens, located in Los Angeles County within the Angeles National Forest on land leased by the City. The property is fenced, with existing communications buildings located just north of the proposed tower location. The tower will be placed within the property line. The ground is vegetated with grasses and has been disturbed by maintenance and construction activities.

1.7 ENVIRONMENTAL CONSEQUENCES

The environmental consequences of constructing the proposed project are summarized in Table 1.7-1. Note that the impacts created by construction can be reduced to below a level of significance by the mitigation measures listed in Sections 1.8 and 1.9 of this EA.

<table>
<thead>
<tr>
<th>Impact</th>
<th>No Project</th>
<th>Preferred Project Alternative</th>
<th>Co-Location Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise</td>
<td>No Impact</td>
<td>No Impact</td>
<td>No Impact</td>
</tr>
<tr>
<td>Air Quality</td>
<td>No Impact</td>
<td>Less Than Significant Impact</td>
<td>No Impact</td>
</tr>
<tr>
<td>Geology and Soils</td>
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<td>No Impact</td>
<td>No Impact</td>
</tr>
<tr>
<td>Water Resources</td>
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<td>No Impact</td>
</tr>
<tr>
<td>Biological Resources</td>
<td>No Impact</td>
<td>No Impact</td>
<td>No Impact</td>
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<tr>
<td>Historic and Cultural Resources</td>
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<td>Less Than Significant Impact</td>
<td>No Impact</td>
</tr>
<tr>
<td>Aesthetic and Visual Resources</td>
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<td>Less Than Significant Impact</td>
<td>No Impact</td>
</tr>
<tr>
<td>Land Use</td>
<td>No Impact</td>
<td>No Impact</td>
<td>No Impact</td>
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<tr>
<td>Infrastructure</td>
<td>No Impact</td>
<td>No Impact</td>
<td>No Impact</td>
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<tr>
<td>Socioeconomics Resources</td>
<td>No Impact</td>
<td>No Impact</td>
<td>No Impact</td>
</tr>
<tr>
<td>Human Health and Safety</td>
<td>Potential Impact</td>
<td>No Impact</td>
<td>Potential Impact</td>
</tr>
</tbody>
</table>

Source: BOE
1.8 MITIGATION MEASURES

In order for the Proposed Action not to have significant impacts upon the environment, it is recommended that the following mitigation measures be performed to reduce potential impacts to air and cultural resources. Table 1.8-1 below shows the mitigation measures recommended to reduce impacts to below significant levels.

**Table 1.8-1**
Mitigation Measures

<table>
<thead>
<tr>
<th>MM No.</th>
<th>Mitigation Measures</th>
<th>Project Phase for Implementation</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR (A)</td>
<td></td>
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</tr>
<tr>
<td>A-1</td>
<td>When scheduling construction activities, the construction contractor shall project the emissions from each active JAG construction site for each day; if the total emissions of any pollutant would exceed the SCAQMD’s daily threshold for that pollutant, the schedule shall be revised to ensure that the exceedance does not occur.</td>
<td>Construction</td>
<td>BOE</td>
</tr>
<tr>
<td>A-2</td>
<td>Extend the project schedule to span more than three months so that fewer pieces of construction equipment will be needed to run concurrently on days of maximum emissions.</td>
<td>Construction</td>
<td>BOE</td>
</tr>
<tr>
<td>CUL-1</td>
<td>A qualified Native American and archeological monitor will be present during all ground disturbance associated with the project.</td>
<td>Construction</td>
<td>BOE</td>
</tr>
<tr>
<td>CUL-2a</td>
<td><strong>Archaeological Resources</strong></td>
<td></td>
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<td></td>
<td>If any archaeological materials are encountered during the course of project development, all further development activity shall halt and:</td>
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<td></td>
<td>- The services of an archaeologist shall then be secured by contacting the SCCIC located at California State University Fullerton for a referral, or a member of the Register of Professional Archaeologists (RPA) or a RPA-qualified archaeologist, who shall assess the discovered material(s) and prepare a survey, study or report evaluating the impact.</td>
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<td></td>
<td>- The archaeologist's survey, study or report shall contain a recommendation(s), if necessary, for the preservation, conservation, or relocation of the resource.</td>
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<td></td>
<td>- JAG shall comply with the recommendations of the evaluating archaeologist, as contained in the survey, study or report.</td>
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<td></td>
<td>- Project development activities may resume once copies of the archaeological survey, study or report are submitted to: SCCIC Department of Anthropology at CSU Fullerton, CA.</td>
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</tbody>
</table>
In the event that human remains are discovered during construction excavation activities, the following procedure shall be observed:

- Stop immediately and contact the Los Angeles County Coroner.
- The Coroner has two working days to examine human remains after being notified by the responsible person. If the remains are Native American, the Coroner has 24 hours to notify the Native American Heritage Commission.
- The Native American Heritage Commission will immediately notify the person it believes to be the most likely descendent (MLD) of the deceased Native American.
- The MLD has 48 hours to make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the human remains and grave goods.
- If the descendent does not make recommendations within 48 hours the owner shall reinter the remains in an area of the property secure from further disturbance, or;
- If the owner does not accept the descendant’s recommendations, the owner or the descendent may request mediation by the Native American Heritage Commission.

<table>
<thead>
<tr>
<th>MM No.</th>
<th>Mitigation Measures</th>
<th>Project Phase for Implementation</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUL-2b</td>
<td><strong>Human Remains</strong>&lt;br&gt;In the event that human remains are discovered during construction excavation activities, the following procedure shall be observed:&lt;br&gt;- Stop immediately and contact the Los Angeles County Coroner.&lt;br&gt;- The Coroner has two working days to examine human remains after being notified by the responsible person. If the remains are Native American, the Coroner has 24 hours to notify the Native American Heritage Commission.&lt;br&gt;- The Native American Heritage Commission will immediately notify the person it believes to be the most likely descendent (MLD) of the deceased Native American.&lt;br&gt;- The MLD has 48 hours to make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the human remains and grave goods.&lt;br&gt;- If the descendent does not make recommendations within 48 hours the owner shall reinter the remains in an area of the property secure from further disturbance, or;&lt;br&gt;- If the owner does not accept the descendant’s recommendations, the owner or the descendent may request mediation by the Native American Heritage Commission.</td>
<td>Construction</td>
<td>BOE</td>
</tr>
<tr>
<td>CUL-3</td>
<td><strong>Native Resources</strong>&lt;br&gt;If an unexpected discovery of a Native American cultural resource is made, a qualified archaeological and Native American monitor should be brought to evaluate the find and make mitigation recommendations.</td>
<td>Construction</td>
<td>BOE</td>
</tr>
<tr>
<td>CUL-4</td>
<td><strong>Paleontological Resources</strong>&lt;br&gt;If an unexpected discovery of paleontological resources is made, a qualified paleontologist should be brought to evaluate the find and make mitigation recommendations.</td>
<td>Construction</td>
<td>BOE</td>
</tr>
</tbody>
</table>
1.9 BEST MANAGEMENT PRACTICES (BMP)/PROJECT DESIGN GUIDELINES-MEASURES

The following Best Management Practices and Design Measures outlined below in Table 1.9-1 will be incorporated into the Project by the BOE as part of the project description in an effort to minimize the environmental impacts arising from construction and operation activities. These practices are implemented within virtually every project by BOE and are not regulatory requirements but rather BOE standard procedure.
### Table 1.9-1
**Best Management Practices (BMP)/Project Design Guidelines-Measures**

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>B-1</td>
<td><strong>Pre-Construction Survey for Nesting Birds</strong></td>
<td>Construction</td>
<td>BOE</td>
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<tr>
<td></td>
<td>The Migratory Bird Treaty Act (MBTA) protects the majority of migratory birds breeding in the U.S., regardless of their official listing status. The provisions of this act govern the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. The law applies to the removal of nests occupied by migratory birds during the breeding season. It is therefore a violation of the MBTA to directly kill or destroy an occupied nest of any bird species covered by the MBTA.</td>
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<td>To avoid impacts on nesting migratory birds, clearing of vegetation and construction activities should occur outside of the peak bird nesting season from September 1\textsuperscript{st} through February 14\textsuperscript{th}. However, if construction must occur during the nesting season, the following measures should be implemented:</td>
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<td>• Within three days of the scheduled start of construction activity, a pre-construction survey should be conducted by a qualified biologist to determine the presence or absence of active nests within, or adjacent to, the project site.</td>
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<td>• If no breeding or nesting activities are detected within 500 feet of the proposed work and staging areas, construction activities may proceed.</td>
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<td>• If bird breeding/nesting activity is confirmed, work activities within 250 feet (or 300 feet for raptors, 500 feet for fully protected species, or a linear distance appropriate for the species approved by the project biologist) of any active nest shall be delayed until the young birds have fledged and left the nest. A work area buffer zone around any active nests shall be demarcated, indicating where work may not occur. Project activities may resume in this area once the project biologist has determined that the nest(s) is no longer active.</td>
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<td>• If the Coastal California Gnatcatcher or any other federally protected bird species is detected within the project area during nesting surveys, additional consultation with the USFWS is required.</td>
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<td>B-2</td>
<td><strong>USFS Mount Lukens Communication Site Management Plan</strong></td>
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<td>BOE</td>
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<td></td>
<td>The United States Forest Service has outlined a management plan for the placement of new towers on Mount Lukens, which is within USFS' jurisdiction. These measures are focused on discouraging use of the communications site by condors and raptors that typically inhabit montane habitats. The following measures should be implemented:</td>
<td>Construction</td>
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<td></td>
<td>- New towers should be self-supporting, should not exceed 120 feet in height, and should not exceed 5,175 feet above mean sea level.</td>
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<td></td>
<td>- Towers that have a shiny or reflective surface should be painted with dark grey to green colors unless the FAA requires that red and white striping be painted. Towers will a dull surface will be left unpainted. Antenna masts shall be grey.</td>
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<td>- Unless specifically required by the FAA, there should be no marker lights, beacons or strobes mounted on towers. Such lights required by the FAA should be white or red strobe lights and be of the minimum intensity, number and flash for the minimum duration.</td>
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<td>- Place anti-perching devices on open horizontal surfaces such as tower tops, edges of roof tops and ridges, on the front edge of microwave dishes and on coverings or tracks of waveguides.</td>
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<td>- Immediately remove trash from site.</td>
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<td></td>
<td>- Secure all loose wires or netting and place wires in conduit when feasible.</td>
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<td>- Cover all insulation or other soft materials.</td>
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<td>- Cover spill retention, catchment basins or other open structures that may collect water.</td>
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<td>- All radiating parabolic dish antennas must be equipped with radome covers.</td>
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<td></td>
<td>- New radomes shall be grey or a non-reflective dark earth-tone color.</td>
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<td></td>
<td>- Fences should be erected at a height that is not in directly line with any radiating beam and shall be designed to avoid the potential for accidental entrapment.</td>
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<td>Other measures pertaining to the protection of vegetation and wildlife:</td>
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<td>- Trimming, pruning, cutting or removal of vegetation required for construction shall need the approval of the Forest Service Authorized Officer.</td>
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<td></td>
<td>- Wildlife species shall not be adversely disturbed, harassed or purposefully attracted to site. Garbage shall be removed promptly.</td>
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<td>- The use of exterior pesticides is only allowed after approval of the Forest Service.</td>
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<td>- Ground disturbance and potential erosion shall be minimized.</td>
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<td>- Run-off and drainage from buildings, parking areas, walkways and access should be efficiently handled.</td>
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<td>- Disturbed areas should be restored and slopes should be stabilized</td>
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### Best Management Practices (BMP)/Project Design Guidelines- Measures

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<tbody>
<tr>
<td>B-3</td>
<td><strong>USFWS Communication Tower Specific Avoidance Measures</strong></td>
<td>Construction</td>
<td>BOE</td>
</tr>
<tr>
<td></td>
<td>Negative, physical impacts to wildlife resulting from collisions with project infrastructure should be minimized by following USFWS guidelines as thoroughly as practicable, as long as they are consistent with project objectives:</td>
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<td></td>
<td>- Erect towers no taller than 199 feet above ground level.</td>
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<td>- Attach new equipment to existing structures or towers when possible (i.e., collocating).</td>
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<td>- Use monopoles instead of guy-wire supported towers.</td>
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<td>- Construct towers at existing ‘antenna farms’.</td>
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<td>- Construct away from areas of high migratory bird traffic, wetlands, and other areas where bird diversity and density is high.</td>
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<td>- Use white aviation warning lights rather than red colored lights.</td>
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<td>- Use strobe aviation warning lights rather than steady-burning or pulsating lights.</td>
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<td>- Use visual daytime markers in areas of high diurnal raptor or waterfowl movements.</td>
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<td>- Security lighting for on-ground facilities should be minimized, point downwards or be down-shielded.</td>
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<td>- Allow access to tower site for bird monitoring purposes.</td>
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<td>- Towers and associated communication facilities should be sited, designed and constructed so as to avoid or minimize habitat loss within and adjacent to the tower “footprint”.</td>
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<tr>
<td>B-4</td>
<td><strong>Establish Habitat Protection Zones</strong></td>
<td>Construction</td>
<td>BOE</td>
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<td></td>
<td>- Construction activities should only take place after a qualified biologist has established habitat protection zones and/or approved the area for construction to begin.</td>
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<td>- Habitat protection zones shall be marked using flagging of temporary fencing. Designated special-status habitat areas and non-approved work areas shall be conspicuously marked to indicate where construction activities shall and shall not be permitted to occur without approval from the lead agencies.</td>
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<td>- A qualified biological monitor shall be present during project construction on a weekly basis or during any grubbing or grading to ensure non-approved work areas are not entered and that native vegetation is not removed, trimmed, or disturbed.</td>
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<tr>
<td>B-5</td>
<td><strong>Protect Native Vegetation</strong></td>
<td>Construction</td>
<td>BOE</td>
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<td></td>
<td>To avoid impacts to native vegetation, do not disturb existing coastal sage scrub vegetation that borders the project site. As stated above, a qualified biological monitor shall be present during project construction on a weekly basis or during any grubbing or grading to ensure non-approved work areas are not entered and that native vegetation is not removed, trimmed, or disturbed. The following measures apply:</td>
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<td>• Do not remove and/or grade plants or topsoil where stands of native vegetation occur</td>
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<td>• Avoid project activities that unnecessary disturb or compact the soil surface which could increase erosion, sediment transport, and make future native plant establishment more difficult. A buffer of native vegetation shall be retained where feasible to reduce potential erosion originating at the project site</td>
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<td>• Clearance of landscaped or non-native plants should be conducted under the supervision of a qualified biological monitor to ensure that direct and indirect impacts to wildlife, in particular birds, are avoided</td>
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<td>• Utilize existing access roads, pads, and previously developed or disturbed areas as much as feasible in order to avoid impacts to sensitive vegetation</td>
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<td>• Restoration of native habitat may be required for any unanticipated loss of native vegetation as deemed appropriate by the resource agencies</td>
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<td><strong>Construction</strong></td>
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<tr>
<td>B-6</td>
<td><strong>Limit the Spread of Invasive Plants</strong></td>
<td>Construction</td>
<td>BOE</td>
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<td>As a requirement from USFS Mount Lukens Site Management Plan (VII B-11), to minimize the spread and establishment of invasive plant species into the project area, all off-road heavy equipment used during project implementation will be free of noxious or exotic weeds and seeds before entering the project area. Vehicle washing guidelines will be implemented for all ground disturbing activities (Appendix A). Furthermore, any post-construction landscaping or revegetation shall not include the use of invasive, exotic plant species listed on the California Department of Food and Agriculture’s (CDFA) Noxious Weed List (CDFA, 2011) or in the California Invasive Plant Inventory (Cal-IPC 2006).</td>
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<td><strong>Construction</strong></td>
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<td>B-7</td>
<td><strong>Construction Monitoring</strong></td>
<td>Construction</td>
<td>BOE</td>
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<td>The project biologist should conduct pre-construction meetings with equipment operators to address project specific biological constraints including the avoidance of native vegetation removal.</td>
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<td>The project biological monitor should complete Weekly Construction Monitoring Forms detailing construction activities, evidence for or against compliance with the aforementioned best management practices, and any corrections and/or discussions made with site personnel. Is this a USFS requirement?</td>
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|       | **Construction**                                |                                 |                    |
## Executive Summary

### Best Management Practices (BMP)/Project Design Guidelines-Measures

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<thead>
<tr>
<th>BMP No.</th>
<th>Responsible Agency</th>
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<tr>
<td>B-8</td>
<td>BOE</td>
</tr>
<tr>
<td>B-9</td>
<td>BOE</td>
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</table>

### Open Trenches and Ditches

Open trenches and ditches can trap small mammals, amphibians, and reptiles and can cause injury to large mammals. Highest activities for many of these species occur during night time, summer months, and wet weather. To avoid and minimize the amount of the open trenches, the following measures are recommended:

- Avoid leaving open trenches overnight
- Keep trenching and back-filling crews close together at any given time

### Hazardous Materials and Pollution Abatement

- To avoid impacts to listed species and their habitats all hazardous materials will be stored at a location away from biological resource areas using a secondary containment system.
- All vehicle fueling and maintenance should be conducted at an appropriate facility away from natural areas. Vehicles should be checked daily for leaks that if introduced to water could be deleterious to aquatic life. Vehicles identified for repair should be positioned over drip pans as a temporary containment and removed from the construction site as soon as possible.

### INFRASTRUCTURE (I)

<table>
<thead>
<tr>
<th>Infra No.</th>
<th>Responsible Agency</th>
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<tbody>
<tr>
<td>I-1</td>
<td>BOE</td>
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<td>I-2</td>
<td>BOE</td>
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### Solid Waste Recycling (Construction)

- To facilitate on-site separation and recycling of construction-related wastes, the contractor(s) shall provide temporary waste separation bins on-site during construction. These bins shall be emptied and the contents recycled accordingly as a part of the project's regular solid waste disposal program.

### Solid Waste Disposal (Construction)

- All waste shall be disposed of properly. Use appropriately labelled recycling bins to recycle construction materials including: solvents, water-based paints, vehicle fluids, broken asphalt and concrete, bricks, metals, wood, and vegetation. Non recyclable materials/wastes shall be taken to an appropriate landfill. Toxic wastes must be discarded at a licensed regulated disposal site.

### HUMAN HEALTH AND SAFETY (HHS)

<table>
<thead>
<tr>
<th>HHS No.</th>
<th>Responsible Agency</th>
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<tr>
<td>HHS-1</td>
<td>BOE</td>
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<td>HHS-2</td>
<td>BOE</td>
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### Defensible spaces including the removing and/or reduction of grasses, shrubs, and trees on or adjacent to a project site shall be created to reduce the fuel load subject to burning from a wildland fire. This shall include remove of all vegetation within a project site enclosure since the project site is located in the Angeles National Forest.

### Defensible space shall be cleared and maintained on an annual basis as required by the city, county, state, or federal fire department since the project site is located in a designated very high fire severity area.
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<tr>
<td>HHS-3</td>
<td>Appropriate firefighting equipment shall be kept in the equipment shelter to be constructed on the project site to fight spot fires that may occur during a wildland fire.</td>
<td>Construction</td>
<td>BOE</td>
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**AESTHETICS AND VISUAL RESOURCES (AV)**

| AV-1   | To the extent technically feasible and in compliance with all safety regulations, neutral colors of paint or other camouflaging techniques shall be used on the tower to blend better with its setting. Finishes or colors that would be shiny or reflective in sunlight are not allowed. | Construction                     | BOE               |
| AV-2   | The minimum amount of pilot warning and obstruction avoidance lighting required by the FAA shall be used and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night shall be avoided when feasible. See FAA Advisory Circular AC 70/7460-1K: Obstruction Marking and Lighting. | Operation                        | BOE               |
| AV-3   | Security lighting for on-ground facilities and equipment shall be down-shielded to keep light within the boundaries of the site.                                                                                                                                     | Operation                        | BOE               |
| AV-4   | Tower shall not be used for the purposes of signage to display a message of any kind.                                                                                                                                                                               | Operation                        | BOE               |
| AV-5   | During construction, appropriate screening (i.e., temporary fencing with opaque material) shall be used to buffer views of construction equipment and material, when feasible.                                                                                   | Construction                     | BOE               |
1.10 FINDINGS AND DETERMINATION

The BOE has determined that the construction of the proposed project will create impacts on the following environmental issues that are thoroughly analyzed in the project EA:

- Noise;
- Air Quality;
- Biological Resources;
- Historic and Cultural Resources;
- Aesthetic and Visual Resources; and
- Human Health and Safety.

The BOE also has included a number of project design measures described in Section 1.7 and Section 6 of this EA that will reduce the above impacts on the environment to below a level of significance.

The BOE also supports the selection of the Proposed Action Alternative since it is the project alternative that will accomplish the objectives and goals of the City.

The BOE does not support the No Project Alternative as it will not provide for the improvement of critical emergency communications facilities in the County that are needed so that all first responders to natural and man-made emergencies can communicate with one another during such emergencies.

The BOE also does not support the Existing Tower Co-location Alternative because the Alternative would not meet the basic criteria for the JAG project, including coverage levels, as described in Section 1.4 above.
2.0 INTRODUCTION

The City will dedicate $7 million of its Recovery Act: Edward Byrne Memorial JAG Formula Program-Local Solicitation funds to provide upgrades to an existing communications tower site located within an existing City communications facility. The tower site is on property under a lease agreement between the City and USFS. As the project applicant, the City has determined that the project location will be analyzed under separate Environmental Assessment (EA) and individual Initial Study (IS) checklists under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), respectively.

This EA is divided into nine chapters plus appendices. Chapter 1 is an executive summary of the project EA. Chapter 2 introduces the project and this EA. Chapter 3 provides a framework for analysis, identifies the purpose and need for the Proposed Action, describes the area in which the Proposed Action will occur, and explains the public involvement process. Chapter 4 provides a detailed description of the Proposed Action, other alternatives considered, and the No Action Alternative. Chapter 5 describes the existing environmental conditions at the proposed project site. Chapter 6 discusses potential cumulative impacts and other impacts that might result from implementation of the Proposed Action, combined with foreseeable future actions. Chapter 7 discusses applicable environmental permits and regulatory requirements. Chapters 8 and 9 provide lists of references and preparers of this EA, respectively.

2.1 FRAMEWORK FOR ANALYSIS

The process for implementing the National Environmental Policy Act (NEPA) is codified in Title 40 of the Code of Federal Regulations (CFR) Parts 1500-1508, Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act. The Council on Environmental Quality (CEQ) was established under NEPA to implement and oversee Federal policy in this process. The U.S. Department of Justice’s Bureau of Justice Assistance (BJA) will serve as the Lead Agency for the Project under NEPA.

An EA is prepared when a proposed action is anticipated to have potentially “significant” environmental impacts, or a proposed action is environmentally controversial. CEQ regulations specify that the following must be accomplished when preparing an EA:

- Briefly provide evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI);
- Aid in an agency’s compliance with NEPA when an EIS is necessary; and
- Facilitate preparation of an EIS when necessary.

To comply with NEPA, the planning and decision making process for actions proposed by Federal agencies (or involving Federal funds) involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental regulations or statutes. It addresses them collectively in the form of an EA or EIS, which enables the decision makers to have a comprehensive view of significant environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated “with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively.”
Within the framework of environmental impact analysis under NEPA, additional authorities that may be applicable include the Clean Air Act (CAA), Clean Water Act (CWA) (including a National Pollutant Discharge Elimination System [NPDES] storm water discharge permit and Section 404 permit), Noise Control Act, Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), National Historic Preservation Act (NHPA), Archaeological Resources Protection Act (ARPA), Resource Conservation and Recovery Act (RCRA), and various Executive Orders (EOs).

Major Federal, state and local permits and approvals required to construct, maintain and operate the proposed JAG project are listed in Table 4-7 in Chapter 4, Proposed Action and Alternatives.

2.2 PUBLIC INVOLVEMENT

Public and agency involvement in the NEPA process promotes open communication between the public and the government and enhances the decision making process. All persons and organizations with an interest in the Proposed Action are encouraged to participate in the decision making process.

NEPA and implementing regulations from the CEQ direct Federal agencies to make their EAs and EISs available to the public during the decision-making process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process.

Through the public involvement process, the BJA notifies relevant Federal, state and local agencies of the Proposed Action and requests input regarding environmental concerns they might have regarding it. The public involvement process provides the BJA with the opportunity to cooperate with and consider different views in its decision regarding implementing this proposal involving Federal funds. As part of the EA process, the BJA has coordinated with agencies such as the U.S. Fish and Wildlife Service (USFWS), Federal Aviation Administration (FAA), U.S. Forest Service (USFS), California State Historic Preservation Office (SHPO), and other federal, state and local agencies. Agency input has been incorporated into resource area analysis of potential environmental impacts.

2.3 COOPERATING AND COORDINATING AGENCIES

Section 7 of the ESA states that any project authorized, funded, or conducted by any Federal agency should not “…jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined…to be critical.” There are no cooperating agencies for Section 7 consultation; however, some agencies (e.g. USFWS) were informally consulted.

The USFS has the authority to review and approve communications facilities proposed on Forest Service lands under the Special Uses Administration codified in Title 36, Code of Federal Regulations, Part 251, Subpart B. Applicants are expected to submit their land lease applications for Facilities on Forest Lands on the appropriate application form: Standard Form 299. Upon review by the Forest Authorizing Officer, as well as passing of primary and secondary screening criteria, an application for use will be accepted or denied. Forest Service Handbook 2709.11 outlines the recommended contents of leasing proposals.
The California Environmental Quality Act (CEQA), as promulgated in the California Public Resources Code Sections 21000-21177, was adopted in 1970 by the State of California to inform governmental decision-makers and the public about the potential environmental effects of a project, identify ways to reduce adverse impacts, offer alternatives to the project, and disclose to the public why a project was approved. CEQA applies to projects undertaken, funded, or requiring an issuance of a permit by a public agency. Projects that have a potential to result in physical change to the environment, and/or that might be subject to several discretionary approvals by governmental agencies including construction activities, clearing or grading of land, improvements to existing structures, and activities or equipment involving the issuance of a permit, are required to go through the CEQA process. A separate document, following the CEQA guidelines, has been prepared for the JAG project. The CEQA process includes a 30-day public review period for this document and the preparation of responses to all comments received.
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3.0 **PURPOSE AND NEED**

3.1 **BACKGROUND AND HISTORY**

The City has used this communications facility for communicating between City emergency first responders for decades, and with upgrades, the Mount Lukens Tower Replacement site can ultimately be incorporated into the LA-RICS network (see below).

In 2009, the City was given funds from the Edward Byrne Memorial JAG Formula Program to provide much needed upgrades to five communications sites throughout the City. These five sites (shown on Figure 3-1, *Regional Location Map*) are vital to police, fire, health and emergency providers not only throughout the City, but the County of Los Angeles as well. The five sites selected by the City for upgrades are:

- San Vicente Peak;
- Mount Lee;
- Baldwin Hills;
- Verdugo Peak; and
- Mount Lukens.

The LA-RICS Authority was formed in January 2009 to establish a County-wide modern interoperable public safety broadband network that allows multiple agencies to respond to the widest possible variety of emergencies. The Authority’s development strategy consists of several main objectives:

- Establish a 700 and 800 MHz, VHF and UHF, County-wide communications network that would utilize (to the greatest extent possible) existing communications sites or government facilities; and
- Leverage new technologies (including P25 LMR and LTE Broadband Mobile Data Systems) to increase public safety through increased cellular coverage and seamless communication between agencies.

While the LA-RICS network has plans to upgrade over 250 communications sites throughout the LA County region, the Mount Lukens site is likely to be incorporated into the LA-RICS network at a later date. Although the Mount Lukens project is considered a stand-alone project separate from LA-RICS, the upgrades/improvements made to the site will be LA-RICS compatible and allow LA-RICS to utilize the site in the future.

3.2 **GENERAL GEOGRAPHIC SETTING**

The City of Los Angeles is home to over 3,700,000 people, according to the 2008 Census, making it the second largest city in the United States. The City is approximately 468 square miles in area, with several distinct geographic regions. Several mountainous areas divide the region geographically. Mount Lukens is located within the Angeles National Forest, east of the communities of Tujunga and La Crescenta.
3.3 PROJECT NEED

The existing communications system used by public safety first responders in the City of Los Angeles has areas within the City’s boundaries in which reliable communications between first responders is less than ideal or very compromised. Access to a highly reliable broadband data system is necessary to support the modern, data-intensive, situational awareness applications that are needed by the City’s fire department, police department, and other law enforcement and public safety personnel. Neither government-operated mobile data networks nor existing commercial cellular operators offer the access, coverage or reliability to deliver critical safety data to field personnel.

Unfortunately, these City agencies currently use independent and incompatible voice and data systems that disrupt response operations and jeopardize the safety of the responders. Additionally, many City departments have deployed traditional public safety mobile data systems, but their limited bandwidth has restricted users to simple character-based messaging and database queries.

Because Los Angeles has a history of region-wide natural disasters, including wildfires and earthquakes, the ability to provide a single communication system that can be operated by all agencies is critical to protecting the public’s safety and welfare during such times.

3.4 PROJECT PURPOSE

The City has issued funding allocations to improve this radio and communications site that is vital to law enforcement, medical, and other first response personnel. The purpose of the funding is to develop or improve radio facilities and construction of the proposed towers that most need refurbishing throughout the City. The purpose of the Proposed Action is to:

- Provide better interoperability so that agencies and jurisdictions can mutually respond to disasters;
- Strengthen disaster recovery capability;
- Strengthen day-to-day enhanced operability;
- Upgrade capacity to 34,000 users simultaneously, more than twice the estimated need; and
- Eliminate unnecessary radio systems that will reduce need to build and maintain the region’s current communications infrastructure by 50%.

As a result of implementing the project, an improvement in public safety for the almost 4 million City residents will occur.
Figure 3-1, Regional Location Map
4.0 PROPOSED ACTION AND ALTERNATIVES

This chapter provides detailed information on the City’s proposal to construct, maintain and operate an approximately 109-foot self-supporting communications tower on USFS land in Los Angeles, California. The range of alternatives considered is limited to those that would meet the purpose and need described in Chapter 3 of this EA, to provide the City with the coverage necessary for broadband communication services to the Los Angeles public safety community. Such alternatives must also meet threshold technical, engineering, and economic requirements to ensure that each is environmentally sound, is economically viable, and complies with existing governmental statutes and regulations.

Screening criteria for alternatives are described below in Section 4.1, followed by a description of each alternative: the No Action Alternative (Section 4.2), and the Proposed Action Alternative (Section 4.4).

4.1 SCREENING CRITERIA FOR ALTERNATIVES

After the alternatives are established, criteria to rate them are devised, then each alternative is evaluated against the screening criteria. If an alternative is accomplished successfully within a reasonable period of time, meets project objectives, and is considered feasible, then it is to be evaluated against the Preferred Alternative (the Proposed Action).

The City, in establishing viable alternatives for further discussion, established a set of screening criteria to determine the feasibility of the alternatives. The criteria were based on the objectives for the project:

- The first objective of the project is to improve the radio tower at Mount Lukens as it is urgently in need of refurbishment in order to continue providing communications support to law enforcement, medical, and other first response personnel.
- The second objective of the project is to strengthen disaster recovery capability, day-to-day enhanced operability, and increase surge capacity through incorporating the Mount Lukens site into the operations of the LA-RICS network; and
- The third objective of the project is to provide better interoperability with the LA-RICS emergency network so that local agencies and jurisdictions can mutually respond to disasters.

The screening criteria used to evaluate the project objectives and feasibility of the alternatives was:

- System Performance: The ability of the project to operate at an optimum level; provide usage for simultaneous users (e.g. first responders); and upload and download data at an accelerated rate.
- System Reliability/Resiliency: The proposed site location needs City site control; have ample back-up power available; and the tower location must be as reliable as possible (i.e. as immune to natural disasters or other natural factors).

Based on these screening criteria, the BOE measured each alternative against its ability to accomplish the stated objectives of the project.
4.2 NO ACTION ALTERNATIVE

CEQ regulations require a discussion of the No Action Alternative. Under the No Action Alternative, the new 109-foot tower on Mount Lukens would not be constructed. The current emergency network in place between first and second responders would continue to be used within Los Angeles. The No Action Alternative serves as a baseline against which the impacts of the Proposed Action Alternative can be evaluated. However, the No Action Alternative does not satisfy the purpose and need discussed in Chapter 3, and does not accomplish all the project objectives discussed above in Section 4.1. The No Action Alternative was therefore eliminated from consideration by the BOE.

4.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DISCUSSION

Existing Tower Co-location

The BOE evaluated the possibility of co-locating transmission equipment on existing tower facilities at Mount Lukens. However, due to space constraints on the tower structures, and the possibility of electromagnetic conflicts with other existing tower users, the BOE eliminated this option from further consideration. Additionally, this option did not meet all the objectives of the Proposed Project. As a result, the co-location alternative was rejected by the City.

4.4 PROPOSED ACTION ALTERNATIVE

The proposed action includes facility upgrades to an existing communications site, including construction of a new communications tower, located at the summit of Mount Lukens, located on USFS lands, within the Angeles National Forest, in Los Angeles County, California.

The Bureau of Justice Assistance (BJA) will be the lead agency for the project under NEPA. The BOE is submitting this EA to obtain NEPA approval for the work to be funded through the U.S. Department of Justice Grant that has been allocated to the City of Los Angeles to improve radio and communications sites. The proposed new communications tower will be constructed to accommodate possible future uses, such as the possible relocation of existing communications equipment currently housed on existing towers located at Mount Lukens. Should existing towers need to be demolished in the future; the proposed new communications tower will have the capacity to house the antennas within the new structure.

4.4.1 Project Location and Regional Context

As shown in Figure 4-1, Aerial Image Map, the project components are located within the Angeles National Forest, east of Tujunga, California, within an existing communications site under long term lease between the USFS and the City of Los Angeles. The project and its associated components will be located primarily on property within existing facilities belonging to the USFS.

The Angeles National Forest, administered by the USFS, covers over 650,000 acres and serves as a recreational playground and watershed protection for the Los Angeles Metropolitan Area. The Forest spans from Glendora in the south to Santa Clarita in the north. Elevations range greatly in the Forest, from 1,200 feet to over 10,000 feet.
Figure 4-1, Aerial Image Map


Legend

- JAG Site
- City Boundary

JAG Project
Mount Lukens Site
Aerial Image Map
Scale 1:10,000
4.4.2 Project Facilities

**Figure 4-2, Preliminary Site Map**, shows the proposed Mount Lukens layout. The proposed project includes the following components:

**Steel Tower**

The new tower proposed at Mount Lukens will be a four-sided 109-foot lattice-based tower, with a height of no more than approximately 5,175 feet above mean sea level (AMSL), per Angeles National Forest land use requirements. **Figure 4-3, Typical Lattice Tower**, shows a photograph of a typical communications lattice-tower. (Please note that the proposed tower will be four-sided although the photograph depicts a three-sided tower. The photograph is for demonstration purposes only.)

4.4.3 Electronic Components

Existing commercial power will be used at each site to the maximum extent possible. Alternative power solutions (including batteries, solar with battery storage, etc.) will be evaluated by the BOE.

4.4.4 Construction Footprint

The project will include the excavation of four borings to accommodate caisson foundations approximately 40 feet deep for tower installation. All excavation work will be completed within existing developed agency properties. After foundation work is completed, the excavated earth will be distributed throughout the site.

In addition to the temporary ground disturbance taking place during construction, temporary work areas will also be required, as discussed below.
Figure 4-2, Preliminary Site Map
Figure 4-3, Typical Lattice Tower
4.4.5 Temporary Work Areas

Approximately 0.25 acre will be disturbed temporarily for project construction. This disturbance will include temporary access roads, structure sites, and materials storage and staging areas. Material removed during the process or the subsequent excavation will be spread over existing access roads and work pads as appropriate, or disposed of offsite in accordance with all applicable laws. All temporary work sites and areas will be restored or repaved as appropriate to preconstruction conditions following the completion of the project. Table 4.4-1 shows a summary of the project disturbance areas.

<table>
<thead>
<tr>
<th>Project Component</th>
<th>Temporary Impacts</th>
<th>Permanent Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Land Use</td>
<td>Area* (square feet)</td>
</tr>
<tr>
<td>New Construction Staging</td>
<td>Staging Areas</td>
<td>3,025</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>3,025</td>
</tr>
</tbody>
</table>

* Based upon preliminary engineering

Source: Los Angeles BOE

4.4.6 Materials Storage and Staging Areas

Construction of the project will require at least one staging and disposal area to store materials and construction equipment and dispose of soil and other materials during the construction process. To the extent feasible, the construction contractor will store or dispose of soil and materials and stage equipment within the existing facilities at the tower location. However, if the distance between the staging area and the construction site is too great, temporary staging and disposal areas closer to the tower location will be required. The staging area will be less than 0.25 acre and will only be used temporarily during construction. Land disturbed at the staging area, if any, will be restored to preconstruction conditions following the completion of project activities. Restoration will include, as appropriate, re-contouring and repaving. It is thought that, at Mount Lukens, a staging area can be located at the terminus point of the access road, as shown in Figure 4-2.

No new permanent power sources will be installed at the staging area and no additional improvements are anticipated to be required. If necessary, to provide electrical service to the staging area during construction, a temporary tap of an existing distribution line will be installed or diesel powered electrical generators will be used.

4.4.7 Temporary Right-of-Way

Construction is anticipated to occur within existing public land and no temporary construction right-of-way is anticipated at this time.
4.4.8 Construction Methods

This section includes an overview of the typical methods that will be used for construction of the project. Specifically, this section discusses the following activities: foundation construction; tower erection; electrical equipment cabinet installation; and construction of access roads where applicable.

Step 1 - Installing the Tower Foundation

Prior to installing the tower foundation, the area will be graded either flat or in a terraced fashion if necessary. Excavation will be required to install caisson foundations approximately 40 feet below grade. Material removed during the process will be replaced into the excavation once the tower is mounted onto the foundations, or spread over the existing area as appropriate. Figure 4-4, Tower Foundation, depicts what a caisson constructed tower foundation will look like. (Please note that the proposed tower will be four-sided although the plan depicts a three-sided tower. The plan is for demonstration purposes only.)

Step 2 - Tower Erection

The tower will be delivered in two or more sections to the site by flatbed truck and assembled on-site using a small truck-mounted crane. After assembly, a large crane will be used to lift and set the pole sections into place on the anchor bolts embedded in the concrete foundations. The nuts on the foundation will then be tightened and secured.

Step 3 - Site Cleanup

The contractor will restore all areas that are temporarily disturbed by project activities to near-preconstruction conditions following the completion of construction. Restoration will include filling and grading the site to its original contours and repaving as appropriate. In addition, all construction materials and debris will be removed from the project area and recycled or properly disposed of off-site. The contractor will conduct a final survey to ensure that cleanup activities are successfully completed as required.

4.4.9 Construction Equipment and Personnel

It is estimated that up to five people will be working at the tower site at one time. BOE will issue construction contracts through a bid and award process. Construction personnel will be employees of the firms awarded contracts. Construction work force is discussed in the subsections below in relation to each phase of construction.

4.4.10 Construction Equipment

Table 4.4-2 lists the typical construction equipment and its respective uses with respect to the project.
Figure 4-4, Tower Foundation
### Table 4.4-2
Standard Construction Equipment and Usage

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-ton flatbed trucks</td>
<td>Haul materials</td>
</tr>
<tr>
<td>40-ton crane</td>
<td>Set antenna towers</td>
</tr>
<tr>
<td>Backhoe</td>
<td>Excavate trenches and footings</td>
</tr>
<tr>
<td>Bulldozer</td>
<td>Prepare structure sites</td>
</tr>
<tr>
<td>Concrete pump truck</td>
<td>Pour concrete</td>
</tr>
<tr>
<td>Drill rig with augers</td>
<td>Install fences, excavate foundation holes, and bores</td>
</tr>
<tr>
<td>Dump truck</td>
<td>Haul excavated materials/import backfill</td>
</tr>
<tr>
<td>Forklift</td>
<td>Move materials on-site</td>
</tr>
<tr>
<td>Pickup trucks</td>
<td>Transport construction personnel</td>
</tr>
<tr>
<td>Portable generators</td>
<td>Operate power tools</td>
</tr>
<tr>
<td>Water truck</td>
<td>Dust control</td>
</tr>
</tbody>
</table>

*Source: Los Angeles BOE*
4.5 OPERATIONS AND MAINTENANCE

This section describes the operation and maintenance activities that will be conducted once the proposed project has been constructed and is in service.

4.5.1 Tower Operations

The transmission facilities associated with this project will continue to be inspected, maintained, and repaired following completion of the project.

Operations and maintenance activities will involve both routine preventive maintenance and emergency procedures to maintain service continuity. Above-ground components will be inspected annually, at a minimum, for corrosion, equipment misalignment, loose fittings, and other common mechanical problems. The foundations will be inspected annually by County engineers.

The City will maintain a 35-foot by 85-foot (from edge to foundation) working space around all antenna support structures that will be kept clear of shrubs and other obstructions for inspection and maintenance purposes. In addition, vegetation that has a mature height of 15 feet or taller will not be allowed to grow within 10 horizontal feet of the tower for safety and reliability reasons. As necessary, tree removal and/or trimming will reduce the potential for trees to come in contact with electrical lines and potentially result in power outages or fire. Power line maintenance activities will be conducted utilizing bucket trucks (man-lifts) or standard pickup trucks, depending on the scope of maintenance.

The following discussion provides a broad overview of the types of activities that will occur after installation of the project. Unless otherwise noted, all vehicles will have rubber tires.

4.5.2 Pole or Structure Brushing

Certain poles or structures require the removal of vegetation to reduce the possibility of system failure or to reduce fire danger. Vegetation is removed using mechanical equipment consisting of chain saws, weed trimmers, rakes, shovels, and brush hooks. Three-man crews typically conduct this work. Typically, in vegetated areas a 150-foot diameter area is cleared around the tower site. The total area needed to complete this task is approximately 150 feet by 150 feet; it takes approximately two hours to complete.

4.5.3 Application of Herbicides

Application of herbicides may follow the mechanical clearing of vegetation as needed to prevent vegetation from re-occurring in accordance with the Federal Noxious Weed Act of 1974. The act requires that each federal agency adopt a management plan to control noxious weed species. Herbicides approved for use by the USFS in Angeles National Forest include Chorosulfuron, Clopyralid, Dicamba, Glyphosate (Accord, Rodeo, Roundup, Roundup Pro), Imazapyr (Arsenal, Chopper, Stalker), Picoloram, and Triclopyr (Garlon 3A, Garlon 4). The method and quantity of application will vary by product and herbicide applicants should follow manufacturer and USFS guidelines.

4.5.4 Equipment Repair and Replacement

Tower and electrical equipment may need to be added, repaired, or replaced to maintain uniform, adequate, safe, and reliable service. Equipment repair or replacement

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1 Formal Section 7 Consultation on the Tehachapi Renewable Transmission Project, Angeles National Forest, California, 2010.
Proposed Action and Alternatives

generally requires a crew to gain access to the location of the equipment to be repaired or replaced. This is normally a four-man crew with two to three trucks, a boom or line truck, an aerial lift truck, and an assist truck.

4.6 REQUIRED APPROVALS

The BJA is the federal Lead Agency for this project. The Los Angeles Mayor’s Office, as the project applicant, must comply with NEPA, which contains the permitting requirements for the construction of the project as federal funds are being used to construct improvements. This EA is being prepared in compliance with NEPA.

In addition to NEPA approval, the BOE is required to obtain a number of other permits from federal, state and local agencies. Chapter 7 of this EA lists and discusses the permits, approvals, and licenses that the BOE anticipates obtaining from jurisdictional agencies.

4.7 ENVIRONMENTAL STANDARDS AND APPLICANT PROPOSED MEASURES

In addition to the project components previously discussed, BOE will incorporate mitigation measures, Best Management Practices (BMPs) and Applicant Proposed Measures (APMs) into the project scope. BOE will implement these APMs and Environmental Standards throughout project design, construction, operation, and maintenance as necessary, feasible, and appropriate to minimize potential environmental impacts.

4.7.1 Applicant Proposed Measures

Chapter 1 Executive Summary, Sections 1.8 and 1.9 list mitigation measures, BMPs and APMs that are applicable to each resource area. The various resource sections of this document outline how and when the APMs will be applied to avoid or minimize impacts to a less than significant level. Where application of APMs to avoid or reduce the effect of a project activity to a less than significant level is not feasible, additional suitable mitigation measures to do so are also proposed within the relevant resource project technical reports.

The APMs are designed to take advantage of project design flexibility by avoiding or minimizing environmental impacts, to the extent feasible. As defined in California Public Resources Code, “feasible” is defined as being “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors” while attaining the project’s basic objectives, its purpose and need.\(^2\)

The BOE will be responsible for overseeing the assembly of the construction and environmental teams that will implement and evaluate the Proposed project APMs. All of those contracted by the BOE to perform this work will be contractually bound to properly implement the APMs to ensure their effectiveness in reducing potential environmental effects. Chapter 1, Executive Summary, Table 1-5, Standard Mitigation Measures, details each of the measures that will be implemented during construction, operation, and maintenance of the project.

\(^2\) Public Resources Code, Section 21061.1 and California Code of Regulations Title 14, Section 15126.6.
4.7.2 Environmental Compliance Management

Implementation of the proposed APMs will be the responsibility of an environmental compliance team that will include a team manager and environmental specialists and monitors. All APMs will be implemented in accordance with applicable federal, state, and local regulations. The environmental compliance team will be responsible for the daily inspection, documentation, and reporting on compliance with all APMs as proposed. As needed, environmental specialists with expertise in water quality, hazardous materials, and natural resources will be retained to verify that all APMs are properly implemented during the construction phase. Implementation of the APMs will be monitored on-site on a daily basis and will be evaluated as to their status and effectiveness during regularly scheduled meetings of the construction team.

4.7.3 Monitoring and Inspection

During construction, environmental monitors and contract administrators will be required to be present on site to verify that the proposed APMs and other proposed project specifications are properly implemented. If conditions occur where construction potentially may adversely affect a known or previously unknown environmentally-sensitive resource, or if construction activities significantly deviate from proposed project requirements, BOE environmental monitors and/or contract administrators will have the authority to halt construction activities, if needed, until an alternative method or approach can be identified. Any concerns that arise during implementation of the APMs will be communicated to the appropriate authority to determine if corrective action is required, or addressed on site, as applicable.

4.7.4 Reporting and Documentation

As the proposed APMs and Environmental Standards are implemented, environmental monitors from BOE will be responsible for daily review and documentation of such activities. Field notes and digital photographs will be used to document and describe the status of the APMs.
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5.0 EXISTING ENVIRONMENT

This section provides information on the existing environment or the baseline conditions for the resource areas to be affected by the proposed action or alternatives. In addition to the baseline conditions, state laws and regulations are summarized, as well as permitting requirements required for each resource area.

5.1 NOISE

This section provides background information on noise in general and on noise conditions in the study area, which is defined in Section 5.1.1. As noted in Section 5.1.2, ambient noise levels were not measured for this document. After a brief review of the nature of sound and the metrics that will be used later in the EA to quantify its impacts, the federal, state and local noise regulatory environment is summarized (See Section 5.1.3). Finally sensitive noise receivers are defined in Section 5.1.4.

Characteristics of Sound

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The decibel (dB) scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Because the human ear is not equally sensitive to all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against upper and lower frequencies in a manner approximating the sensitivity of the human ear. The scale is based on a reference pressure level of 20 micropascals (zero dBA). The scale ranges from zero (for the average least perceptible sound) to about 130 (for the average human pain level).

To the human ear, a sound 10 dBA higher than another is judged to be twice as loud; 20 dBA higher is four times as loud; and so forth. Typically, the smallest change in sound levels that is detectable by human hearing under ambient conditions is 3 to 5 dBA. Changes of 1 to 3 dBA are detectable only under quiet, controlled conditions and changes of less than 1 dBA are usually indiscernible.

The normal range of conversation is between 34 and 66 dBA. Between 70 and 90 dBA, sound is distracting and presents an obstacle to conversation, thinking, or learning. Above 90 dBA, sound can cause permanent hearing loss. Examples of various sound levels in different environments are shown in Table 5.1-1, Typical Sound Levels.
Table 5.1-1
Typical Sound Levels

<table>
<thead>
<tr>
<th>Common Sounds</th>
<th>A-Weighted Sound Level in Decibels</th>
<th>Subjective Impression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen Torch</td>
<td>120</td>
<td>Pain Threshold</td>
</tr>
<tr>
<td>Rock Band</td>
<td>110</td>
<td>Very Loud</td>
</tr>
<tr>
<td>Pile Driver at 50 feet</td>
<td>100</td>
<td>Very Loud</td>
</tr>
<tr>
<td>Ambulance Siren at 100 feet</td>
<td>90</td>
<td>Very Loud</td>
</tr>
<tr>
<td>Garbage disposal</td>
<td>80</td>
<td>Moderately Loud</td>
</tr>
<tr>
<td>Vacuum Cleaner at 10 feet</td>
<td>70</td>
<td>Quiet</td>
</tr>
<tr>
<td>Air Conditioner at 100 feet</td>
<td>60</td>
<td>Just Audible</td>
</tr>
<tr>
<td>Quiet Urban Daytime</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Quiet Urban Nighttime</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Bedroom at Night</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Recording Studio</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>


Noise Measurement Scales

Several rating scales have been developed to analyze adverse effects of community noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise on people depends largely upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. Those that apply to this analysis include the following:

- **L_{eq}**, the equivalent noise level, is an average of sound level over a defined time period (such as 1 minute, 15 minutes, 1 hour or 24 hours). Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure.

- **CNEL**, the Community Noise Equivalent Level, is a 24-hour average L_{eq} with a 4.77-dBA “penalty” added to noise during the hours of 7:00 p.m. to 10:00 p.m., and a 10-dBA penalty added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime. The logarithmic effect of these additions is that a 60-dBA 24-hour L_{eq} corresponds to 66.7-dBA CNEL.

- **L_{dn}**, the day-night average noise, is a 24-hour average L_{eq} with an additional 10-dBA “penalty” added to noise that occurs between 10:00 p.m. and 7:00 a.m. The L_{dn} metric yields values similar to (within 1dBA of) the CNEL metric. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

- **L_{90}**, a noise level that is exceeded 90 percent of the time at a given location, is often used as a measure of “background” noise.

- **L_{max}**, the maximum noise level, is the highest noise level measured over a given time interval.
A noise environment consists of a base of steady “background” noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway.

When evaluating environmental community noise levels, a 3-dBA increase over 24 hours is barely perceptible to most people. A 5-dBA increase is readily noticeable and is considered a potentially significant impact. 10-dBA increase is perceived as a doubling of loudness and is a clearly significant impact.³

5.1.1 Study Area

The study area for the noise analysis for the Mount Lukens site was a circular area with a radius of 8,100 feet (distance to the nearest sensitive receiver), centered on the site. Given the expected magnitude of the project’s noise sources, and the attenuation of noise with distance, it was estimated that exposures at the nearest sensitive receptor will not be significant.

5.1.2 Ambient Noise Levels

The proposed project site is located on Mount Lukens.

No ambient noise survey was conducted for this report. Instead, the analysis was based partly upon the presumed noise levels for residentially-zoned areas, as specified by the City of Los Angeles Municipal Code.⁴ These values are 50 dBA for daytime (7:00 a.m. to 10:00 p.m.) and 40 dBA for nighttime (10:00 p.m. to 7:00 a.m.).

5.1.3 Applicable Noise Regulations

To limit population exposure to noise levels that are physically and/or psychologically damaging or intrusive, the federal government, the State of California, various county governments, and most municipalities in the state have established noise policies, standards and ordinances.

State of California

The California Department of Health Services (DHS) Office of Noise Control has studied the correlation of noise levels and their effects on various land uses.⁵ The most current guidelines prepared by the state noise officer were issued in 1987 and are contained in the “General Plan Guidelines” issued by the Governor’s Office of Planning and Research in 2003.⁶ These guidelines establish four categories for judging the severity of noise intrusion on specified land uses:

- Normally Acceptable: Is generally acceptable, with no mitigation necessary.
- Conditionally Acceptable: May require some mitigation, as established through a noise study.

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⁴ City of Los Angeles Municipal Code, §111.03, “Minimum Ambient Noise Level.”
⁵ The Office of Noise Control no longer exists.
⁶ State of California, General Plan Guidelines, Governor’s Office of Planning and Research, Sacramento, California. 2003.
- Normally Unacceptable: Requires substantial mitigation.
- Clearly Unacceptable: Probably cannot be mitigated to a less-than-significant level.

**Local Standards**

The County of Los Angeles Code (Code) prohibits construction activity between 7:00 p.m. and 7:00 a.m. Monday through Saturday, or at any time on Sundays or holidays that creates a noise disturbance across a residential or commercial real-property line.

**Table 5.1-2, County of Los Angeles – Exterior Construction Noise Standards**, lists the allowable exterior noise level exposure construction noise at residential and commercial locations.

According to the Code, government-sponsored and general construction projects are not exempt from the restrictions on the times construction is allowed. A permit to operate construction activities during prohibited hours can be obtained, and general construction is not exempt from noise regulation provided it is performed within the permissible hours.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Time</th>
<th>Single-family Residential (dBA)</th>
<th>Multi-family Residential (dBA)</th>
<th>Semiresidential / Commercial (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Equipment&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Monday-Saturday except holidays, 7:00 a.m. to 8:00 p.m.</td>
<td>75</td>
<td>80</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Monday-Saturday, 8:00 p.m. to 7:00 a.m. and all day Sunday and holidays</td>
<td>60</td>
<td>64</td>
<td>70</td>
</tr>
<tr>
<td>Stationary Equipment&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Monday-Saturday except holidays, 7:00 a.m. to 8:00 p.m.</td>
<td>60</td>
<td>65</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Monday-Saturday, 8:00 p.m. to 7:00 a.m. and all day Sunday and holidays</td>
<td>50</td>
<td>55</td>
<td>60</td>
</tr>
<tr>
<td>At Business Structures (Mobile Equipment)</td>
<td>Daily (including Sunday and holidays) at all hours</td>
<td>85</td>
<td>85</td>
<td>85</td>
</tr>
</tbody>
</table>

Source: County of Los Angeles Code, §12.08.440.

- a. Nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment
- b. Repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment
5.1.4 Sensitive Receivers

This noise analysis focuses primarily upon project impacts on sensitive noise receivers located near the project site or along roadways that will carry project-generated traffic. “Noise-sensitive” land uses are those (a) for which quiet is an essential element (e.g., recording studios, outdoor amphitheaters); (b) places where people sleep (e.g., residences, hotels); or (c) institutional land uses where it is important to avoid interference with such activities as speech, meditation and concentration on reading material (e.g., schools, libraries). The regulatory definition of sensitive receivers varies among jurisdictions. For the present analysis, sensitive receivers are defined to include:

- Residential areas (including hotels and motels);
- Schools;
- Child care centers;
- Libraries;
- Parks;
- Houses of worship; and
- Medical facilities.

For the site, an aerial photograph was examined to identify possible sensitive receivers within 500 feet of the proposed site. The presence of sensitive receivers was verified by further examination of the site with Google’s Street View tool and with photographs and videos taken at the site by project staff. Additional information was obtained in some cases through online searches. The distance from the site to the nearest receptor was measured on-screen, using Google Earth.

The nearest residence is 8,100 feet away. The Deukmejian Wilderness Park boundary is about 950 feet away; however its nearest sustained use site (a picnic area) is about 9,000 feet away, so the park is not a sensitive receiver. Figure 5.1-1, Sensitive Receptor Map, shows the sensitive receivers nearest to the site.

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Figure 5.1-1
Sensitive Receptor Map
5.2 AIR QUALITY

5.2.1 Regulatory Setting

Air pollution is a general term that refers to one or more chemical substances that degrade the quality of the atmosphere. Individual air pollutants degrade the atmosphere by reducing visibility, damaging property, combining to form "smog," reducing the productivity or vigor of crops or natural vegetation, and/or reducing human or animal health. Air quality is a term used to describe the amount of air pollution the public is exposed to.

Air quality in the United States is governed by the Federal Clean Air Act (CAA), which is administered by the United States Environmental Protection Agency (USEPA). In addition to being subject to the requirements of the CAA, air quality in California is also governed by the California Clean Air Act (CCAA). The CCAA, as amended in 1992, requires all air districts in the state to endeavor to achieve and maintain State Ambient Air Quality Standards. The California Air Resources Board (CARB) administers the CCAA statewide.

5.2.1.1 Pollutants of Concern

This evaluation addresses three general categories of air pollutants, all of which may be emitted during project construction and/or operation. "Criteria pollutants" are those for which ambient air quality standards have been set. Hazardous air pollutants (HAPs), also known as toxic air contaminants (TACs), are individual compounds or mixtures that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. Finally, greenhouse gases (GHG) are compounds that absorb long-wave radiation and therefore block transmission of heat through the atmosphere; they have been implicated in global climate change. The three pollutant categories are discussed in the following subsections.

Criteria Pollutants

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

Nitrogen Oxides (NO\(_x\))

Nitrogen oxides serve as integral participants in the process of photochemical smog production. The two major forms of NO, are nitric oxide (NO) and nitrogen dioxide (NO\(_2\)). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO\(_2\) is a reddish-brown pungent gas formed by the combination of NO and oxygen. NO\(_2\) acts as an acute respiratory irritant and eye irritant, and increases susceptibility to respiratory pathogens. A third form of NO\(_x\), nitrous oxide (N\(_2\)O), is a greenhouse gas (GHG), and is discussed later in this section.

Carbon Monoxide (CO)

Carbon monoxide is a colorless, odorless non-reactive pollutant produced by incomplete combustion of carbon substances (e.g., gasoline or diesel fuel). The primary adverse
health effect associated with CO is its binding with hemoglobin in red blood cells, which decreases the ability of these cells to transport oxygen throughout the body. Prolonged exposure can cause headaches, drowsiness or equilibrium, and high concentrations are lethal.

Particulate Matter (PM)

Particulate matter consists of finely divided solids or liquids, such as soot, dust, aerosols, fumes and mists. Two forms of fine particulate are now regulated. Respirable particles, or PM₁₀, include that portion of the particulate matter with an aerodynamic diameter of 10 micrometers (i.e., 10 millionths of a meter or 0.0004 inch) or less. Fine particles, or PM₂.₅, have an aerodynamic diameter of 2.5 micrometers (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind action on the arid landscape also contributes substantially to the local particulate loading. Fossil fuel combustion accounts for a significant portion of PM₂.₅. In addition, particulate matter forms in the atmosphere through reactions of NOₓ and other compounds (such as ammonia) to form inorganic nitrates. Both PM₁₀ and PM₂.₅ may adversely affect the human respiratory system, especially in those persons who are naturally sensitive or susceptible to breathing problems.

Hydrocarbons (HC)

Hydrocarbons are compounds comprised primarily of atoms of hydrogen and carbon. Total organic gases (TOG) and reactive organic gases (ROG) are the two classes of HC whose emissions are inventoried by the CARB and the SCAQMD. ROG have relatively high photochemical reactivity. The principal nonreactive⁸ HC is methane (CH₄), which is also a greenhouse gas (greenhouse gases are also discussed later in this section). The major source of ROG is the incomplete combustion of fossil fuels in internal combustion engines. Other sources of ROG include the evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products. Adverse effects on human health are not caused directly by ROG, but rather by reactions of ROG to form secondary pollutants. ROG are also transformed into organic aerosols in the atmosphere, contributing to higher levels of fine particulate matter and lower visibility.

Ozone (O₃)

Ozone is a secondary pollutant produced through a series of photochemical reactions involving ROG and NOₓ. O₃ creation requires ROG and NOₓ to be available for approximately three hours in a stable atmosphere with strong sunlight. Because of the long reaction time, peak ozone concentrations frequently occur downwind of the sites where the precursor pollutants are emitted. Thus, O₃ is considered a regional, rather than a local, pollutant. The health effects of O₃ include eye and respiratory irritation, reduction of resistance to lung infection, and possible aggravation of pulmonary conditions in persons with lung disease.

Toxic Air Contaminants

A toxic air contaminant (TAC) is defined by California law as an air pollutant that “may cause or contribute to an increase in mortality or an increase in serious illness, or which

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⁸ Almost all HC are photochemically reactive to some extent. State and local emission inventories include TOG because “nonreactive” HC, in sufficient atmospheric concentrations, have some photochemical reactivity.
may pose a present or potential hazard to human health” (California Health and Safety Code §39655a). USEPA uses the term hazardous air pollutant (HAP) in a similar sense. Stationary sources of TACs from JAG operations will include combustion of diesel fuel in standby electrical generators. Emissions of mobile source air toxics (MSAT)\textsuperscript{9,10} will be associated with the project, chiefly through motor vehicle traffic to and from the JAG stations. The following pollutants are components of diesel fuel combustion in both stationary and mobile sources.

**Acetaldehyde**

Acetaldehyde is a colorless liquid with a high vapor pressure and, at dilute ambient concentrations, a “fruity and pleasant odor.”\textsuperscript{11} It is present as a product of incomplete combustion in the exhausts of stationary equipment (e.g., boilers and generators) and mobile sources. It is also a secondary pollutant, formed through the photochemical reaction of VOC and NO\textsubscript{x} in the atmosphere. The primary acute effect of inhalation exposure to acetaldehyde is irritation of the eyes, skin, and respiratory tract in humans. At higher exposure levels, erythema, coughing, pulmonary edema, and necrosis may also occur. Chronic exposure to acetaldehyde causes inflammation and injury to the upper respiratory tract (e.g. lesions of the nasal passages).\textsuperscript{12} The chronic noncancer effects of acetaldehyde in humans have not been well characterized. No information is available on the reproductive or developmental effects of acetaldehyde in humans. The USEPA has classified acetaldehyde as a probable human carcinogen.

**Acrolein**

Acrolein is a water-white or yellow liquid that burns easily, is readily volatilized, and has “a disagreeable odor.”\textsuperscript{13} It is present as a product of incomplete combustion in the exhausts of stationary equipment (e.g., boilers and heaters) and mobile sources. It is also a secondary pollutant, formed through the photochemical reaction of VOC and NO\textsubscript{x} in the atmosphere. Acrolein is considered to have high acute toxicity, and causes upper respiratory tract irritation and congestion in humans. The major effects from chronic (long-term) inhalation exposure to acrolein in humans consist of general respiratory congestion and eye, nose, and throat irritation. No information is available on the reproductive, developmental, or carcinogenic effects of acrolein in humans. The USEPA considers acrolein data to be inadequate for an assessment of human carcinogenic potential.

\textsuperscript{9} U.S. Environmental Protection Agency, “Control of Emissions of Hazardous Air Pollutants from Mobile Sources; Final Rule.” 66 Federal Register 17229-17273 (March 29, 2001); U.S. Environmental Protection Agency, “Control of Hazardous Air Pollutants from Mobile Sources; Final Rule.” 72 Federal Register 8428-8476 (February 26, 2007).


Benzene

Benzene is a volatile, colorless, highly flammable liquid with a “sweet” odor. Most of the benzene in ambient air is from incomplete combustion of fossil fuels and evaporation from gasoline service stations. Acute inhalation exposure to benzene causes neurological symptoms, such as drowsiness, dizziness, headaches, and unconsciousness in humans. Chronic inhalation of certain levels of benzene causes disorders in the blood in humans. Benzene specifically affects bone marrow (the tissues that produce blood cells). Aplastic anemia, excessive bleeding, and damage to the immune system (by changes in blood levels of antibodies and loss of white blood cells) may develop. Available human data on the developmental effects of benzene are inconclusive due to concomitant exposure to other chemicals, inadequate sample size, and lack of quantitative exposure data. The USEPA has classified benzene as a known human carcinogen by inhalation.

1,3-Butadiene

1,3-Butadiene is a colorless gas with a mild gasoline-like odor. Sources of 1,3-butadiene released into the air include motor vehicle exhaust, manufacturing and processing facilities, forest fires or other combustion, and cigarette smoke. Acute exposure to 1,3-butadiene by inhalation in humans results in irritation of the eyes, nasal passages, throat, and lungs. Neurological effects, such as blurred vision, fatigue, headache, and vertigo, have also been reported at very high exposure levels. One epidemiological study reported that chronic exposure to 1,3-butadiene via inhalation resulted in an increase in cardiovascular diseases, such as rheumatic and arteriosclerotic heart diseases, while other human studies have reported effects on the blood. No information is available on reproductive or developmental effects of 1,3-butadiene in humans. USEPA has classified 1,3-butadiene as a “probable human carcinogen” by inhalation.

Diesel Particulate Matter/Diesel Exhaust Organic Gases

Diesel Particulate Matter/Diesel Exhaust Organic Gases are a complex mixture of hundreds of constituents in either a gaseous or particle form. Gaseous components of diesel exhaust (DE) include CO₂, oxygen, nitrogen, water vapor, CO, nitrogen compounds, sulfur compounds, and numerous low-molecular-weight hydrocarbons. Among the gaseous hydrocarbon components of DE that are individually known to be of toxicological relevance are several carbonyls (e.g., formaldehyde, acetaldehyde, acrolein), benzene, 1,3-butadiene, and polycyclic aromatic hydrocarbons (PAHs) and nitro-PAHs. Diesel particulate matter (DPM) is composed of a center core of elemental

17 USEPA MSAT regulations consider both the particulate and gaseous components of diesel engine exhaust, while California regulations focus on diesel particulate matter (DPM).
carbon and adsorbed organic compounds, as well as small amounts of sulfate, nitrate, metals, and other trace elements. DPM consists primarily of PM$_{2.5}$, including a subgroup with a large number of particles having a diameter <0.1 μm. Collectively, these particles have a large surface area, which makes them an excellent medium for adsorbing organics. Also, their small size makes them highly respirable and able to reach the deep lung. A number of potentially toxicologically-relevant organic compounds, including PAHs, nitro-PAHs, and oxidized PAH derivatives, are on the particles. Diesel exhaust is emitted from onroad mobile sources, such as automobiles and trucks, and from offroad mobile sources (e.g. diesel locomotives, marine vessels and construction equipment). DPM is directly emitted from diesel-powered engines (primary particulate matter) and can be formed from the gaseous compounds emitted by diesel engines (secondary particulate matter).

Acute or short-term (e.g., episodic) exposure to DE can cause acute irritation (e.g., eye, throat, bronchial), neurophysiological symptoms (e.g., lightheadedness, nausea), and respiratory symptoms (cough, phlegm). Evidence also exists for an exacerbation of allergenic responses to known allergens and asthma-like symptoms.\textsuperscript{19} Information from the available human studies is inadequate for a definitive evaluation of possible noncancer health effects from chronic exposure to DE. However, on the basis of extensive animal evidence, DE is judged to pose a chronic respiratory hazard to humans. USEPA has determined that DE is “likely to be carcinogenic to humans by inhalation” and that this hazard applies to environmental exposures.\textsuperscript{20}

\textsuperscript{19} Ibid.
\textsuperscript{20} Ibid.
Formaldehyde

Formaldehyde is a colorless gas with a pungent, suffocating odor at room temperature.\(^{21}\) The major emission sources of formaldehyde appear to be power plants, manufacturing facilities, incinerators, and automobile exhaust. However, most of the formaldehyde in ambient air is a result of secondary formation through photochemical reaction of VOC and NO\(_x\).\(^{22}\) The major toxic effects caused by acute formaldehyde exposure via inhalation are eye, nose, and throat irritation; and effects on the nasal cavity. Other effects seen from exposure to high levels of formaldehyde in humans are coughing, wheezing, chest pains, and bronchitis. Chronic exposure to formaldehyde by inhalation in humans has been associated with respiratory symptoms and eye, nose, and throat irritation. USEPA considers formaldehyde to be a probable human carcinogen.

Greenhouse Gases

Greenhouse Gases (GHG) are defined under the California Global Warming Solutions Act of 2006 (AB 32) as carbon dioxide (CO\(_2\)), methane (CH\(_4\)), nitrous oxide (N\(_2\)O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF\(_6\)). Associated with each GHG species is a “global warming potential” (GWP), which is defined as the ratio of degree of warming to the atmosphere that would result from the emission of one mass unit of a given GHG compared with one equivalent mass unit of CO\(_2\) over a given period of time. By this definition, the GWP of CO\(_2\) is always 1. The GWPs of methane and nitrous oxide are 21 and 310, respectively (California Climate Action Registry 2007).\(^{23}\) “Carbon dioxide equivalent” (CO\(_2\)-e) emissions are calculated by weighting each GHG compound’s emissions by its GWP and then summing the products. Because HFCs, PFCs, and SF\(_6\) are not emitted by project sources, they are not discussed further.

Carbon Dioxide (CO\(_2\))

Carbon dioxide is a clear, colorless, and odorless gas. Fossil fuel combustion is the main human-related source of CO\(_2\) emissions; electricity generation and transportation are first and second in the amount of CO\(_2\) emissions, respectively. Carbon dioxide is the basis of GWP, and thus has a GWP of 1.

Methane (CH\(_4\))

Methane is a clear, colorless gas, and is the main component of natural gas. Anthropogenic sources of CH\(_4\) are fossil fuel production, biomass burning, waste management, and mobile and stationary combustion of fossil fuel. Wetlands are responsible for the majority of the natural methane emissions. As mentioned above, CH\(_4\), within a 100-year period, is 21 times more effective in trapping heat than is CO\(_2\).

Nitrous Oxide (N\(_2\)O)


\(^{23}\) These values were reported by the Intergovernmental Panel on Climate Change (IPCC) in 1995. Some GWP values have been updated since 1995 on the basis of improved calculation methods. The 1995 values continue to be used by international convention to maintain consistency in GHG reporting.
Nitrous oxide is a colorless, clear gas, with a slightly sweet odor. $N_2O$ has both natural and human-related sources, and is removed from the atmosphere mainly by photolysis, or breakdown by sunlight, in the stratosphere. The main human-related sources of $N_2O$ in the United States are agricultural soil management (synthetic nitrogen fertilization), mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. Nitrous oxide is also produced from a wide range of biological sources in soil and water. Within a 100-year span, $N_2O$ is 310 times more effective in trapping heat than is $CO_2$.

5.2.1.2 Regulatory Agencies

California Air Resources Board

The California Air Resources Board (CARB) is responsible for ensuring implementation of the CCAA, meeting state requirements of the federal CAA, and establishing California Ambient Air Quality Standards (CAAQS). It is also responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB also establishes passenger vehicle fuel specifications.

In addition, CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities for controlling stationary emission sources at the regional and county levels. The CCAA is administered by CARB at the state level and by local air pollution control districts and air quality management districts at the regional level.

Local Agency Information

South Coast Air Quality Management District

The CCAA designates the South Coast Air Quality Management District (SCAQMD) as the regional agency principally responsible for comprehensive air pollution control in the South Coast Air Basin (SCAB), in which Mount Lukens is located. The SCAQMD adopts rules and regulations for stationary sources of air pollution, establishes permitting requirements, inspects emission sources, and enforces such measures. The SCAQMD is required to produce plans for complying with ambient air quality standards in its jurisdiction. Every three years, the SCAQMD and the Southern California Association of Governments (SCAG) update the Air Quality Management Plan (AQMP). The most recent AQMP is discussed in Section 5.2.1.4.

5.2.1.3 Applicable Regulations

Ambient Air Quality Standards

As required by the CAA and the CCAA, national ambient air quality standards (NAAQS) have been established for six major air pollutants. These pollutants, known as criteria pollutants, are: carbon monoxide (CO), nitrogen dioxide (NO$_2$), ozone (O$_3$), particulate matter (PM$_{10}$ and PM$_{2.5}$), sulfur dioxide (SO$_2$), and lead (Pb). The State of California has also established ambient air quality standards, known as the California Ambient Air Quality Standards (CAAQS). These standards are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles.

Both state and federal standards are summarized in Table 5.2-1, *Ambient Air Quality Standards for Criteria Air Pollutants*. The primary standards have been established to protect the public health. The secondary standards are intended to protect the nation's
welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare.

**Significance Thresholds**

The SCAQMD has developed criteria for determining whether emissions from a project are regionally significant. While these criteria were intended to be used for analyses under CEQA, they are also useful for estimating whether a project is likely to result in a violation of the NAAQS and/or whether the project is in conformity with plans to achieve attainment. A project is considered to have a regional air quality impact if emissions from its construction and/or operational activities exceed the corresponding significance thresholds.

**South Coast Air Quality Management District**

The SCAQMD has established thresholds of significance for regional impacts, which are summarized in **Table 5.2-2, SCAQMD Significance Thresholds for Regional Impacts** for criteria pollutant emissions during construction activities and project operation. A project is considered to have a regional air quality impact if emissions from its construction and/or operational activities exceed the corresponding SCAQMD significance thresholds.

The SCAQMD has also published guidance on determining the localized significance of construction activities.**Table 5.2-3, SCAQMD Ambient Air Quality Significance Thresholds for Construction**, shows the District’s thresholds for significance, which are expressed as short-term ambient concentrations. SCAQMD has prepared lookup tables that use the concentration-based thresholds to back-calculate emission rates from various sized projects, to indicate significant emission rates presumed to satisfy the ambient thresholds. These lookup tables are applicable for construction projects that affect less than 5 acres on any given day.

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Table 5.2-1
Ambient Air Quality Standards for Criteria Air Pollutants

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>California Standards</th>
<th>Federal Standards</th>
<th>Method</th>
<th>Primary Standards</th>
<th>Secondary Standards</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
<tr>
<td>Ozone (O₃)</td>
<td>1 Hour</td>
<td>0.09 ppm (180 µg/m³)</td>
<td>Ultraviolet</td>
<td>—</td>
<td>—</td>
<td>Same as Primary</td>
<td>Ultraviolet Photometry</td>
</tr>
<tr>
<td></td>
<td>8 Hour</td>
<td>0.07 ppm (137 µg/m³)</td>
<td>Photometry</td>
<td>—</td>
<td>0.075 ppm (147 µg/m³)</td>
<td>Same as Primary Standard</td>
<td></td>
</tr>
<tr>
<td>Respirable</td>
<td>24 Hour</td>
<td>50 µg/m³</td>
<td>Gravimetric or Beta Attenuation</td>
<td>—</td>
<td>150 µg/m³</td>
<td>Same as Primary Standard</td>
<td>Inertial Separation and Gravimetric Analysis</td>
</tr>
<tr>
<td>Particulate Matter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(PM₁₀)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine Particulate</td>
<td>24 Hour</td>
<td>No Separate State Standard</td>
<td>35 µg/m³</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Matter (PM₂.₅)</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>8 Hour</td>
<td>9 ppm (10 mg/m³)</td>
<td>Non-Dispersive Infrared Photometry (NDIR)</td>
<td>—</td>
<td>9 ppm (10 mg/m³)</td>
<td>None</td>
<td>Non-Dispersive Infrared Photometry (NDIR)</td>
</tr>
<tr>
<td></td>
<td>1 Hour</td>
<td>20 ppm (23 mg/m³)</td>
<td>Gravimetric or Beta Attenuation</td>
<td>15 µg/m³</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 Hour</td>
<td>9 ppm (1 mg/m³)</td>
<td>—</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Lake Tahoe)</td>
<td>6 ppm (7 mg/m³)</td>
<td>—</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO₂)</td>
<td>24 Hour</td>
<td>0.030 ppm (57 µg/m³)</td>
<td>Gas Phase Chemiluminescence</td>
<td>0.053 ppm (100 µg/m³)</td>
<td>Same as Primary Standard</td>
<td>Gas Phase Chemiluminescence</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Hour</td>
<td>0.18 ppm (399 µg/m³)</td>
<td>Gravimetric or Beta Attenuation</td>
<td>0.1 ppm (188 µg/m³)</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfur Dioxide (SO₂)</td>
<td>24 Hour</td>
<td>0.04 ppm (105 µg/m³)</td>
<td>Ultraviolet Fluorescence</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>3 Hour</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>1 Hour¹</td>
<td>0.25 ppm (855 µg/m³)</td>
<td>—</td>
<td>—</td>
<td>0.075 ppm (196 µg/m³)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Lead¹</td>
<td>30 Day</td>
<td>1.5 µg/m³</td>
<td>Atomic Absorption</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Calendar Quarter</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>1.5 µg/m³</td>
<td>Same as Primary Standard</td>
<td>High Volume Sampler and Atomic Absorption</td>
</tr>
<tr>
<td></td>
<td>Rolling 3-Month Average¹</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.15 µg/m³</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Visibility Reducing</td>
<td>8 Hour</td>
<td>Extinction coefficient of 0.23 per kilometer–visibility of 10 miles or more (0.07 – 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70%. Method: Beta Attenuation and Transmittance through Filter Tape.</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Particles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfates</td>
<td>24 Hour</td>
<td>25 µg/m³</td>
<td>Ion Chromatography</td>
<td></td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>1 Hour</td>
<td>0.03 ppm (42 µg/m³)</td>
<td>Ultraviolet Fluorescence</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Vinyl Chloride¹</td>
<td>24 Hour</td>
<td>0.01 ppm (26 µg/m³)</td>
<td>Gas Chromatography</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

Source: California Air Resources Board, “Ambient Air Quality Standards.” Internet URL: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. (September 8, 2010).
a. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM$_{10}$, PM$_{2.5}$, and visibility reduction particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

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

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

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

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

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

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

h. On June 2, 2010, the USEPA established a new 1-hour SO$_2$ standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The USEPA also revoked both the existing 24-hour SO$_2$ standard of 0.14 ppm and the annual primary SO$_2$ standard of 0.030 ppm, effective August 23, 2010.

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


### Table 5.2-2

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Mass Daily Thresholds (Pounds/Day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Construction</td>
</tr>
<tr>
<td>Nitrogen Oxides (NO$_x$)</td>
<td>100</td>
</tr>
<tr>
<td>Volatile Organic Compounds (VOC)</td>
<td>75</td>
</tr>
<tr>
<td>Respirable Particulate Matter (PM$_{10}$)</td>
<td>150</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM$_{2.5}$)</td>
<td>55</td>
</tr>
<tr>
<td>Sulfur Oxides (SO$_x$)</td>
<td>150</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>550</td>
</tr>
<tr>
<td>Lead</td>
<td>3</td>
</tr>
</tbody>
</table>


### Table 5.2-3

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>Threshold Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen Dioxide (NO$_x$)</td>
<td>1 hour</td>
<td>0.18 ppm</td>
</tr>
<tr>
<td>Respirable Particulate Matter (PM$_{10}$)</td>
<td>24 hours</td>
<td>10.4 µg/m$^3$</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM$_{2.5}$)</td>
<td>24 hours</td>
<td>10.4 µg/m$^3$</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>1 hour</td>
<td>20 ppm</td>
</tr>
<tr>
<td></td>
<td>24 hours</td>
<td>9.0 ppm</td>
</tr>
</tbody>
</table>

Mobile Source Air Toxics

In addition to the criteria pollutants for which there are NAAQS, the USEPA also regulates mobile source air toxics (MSATs). In February 2007, the USEPA finalized a rule to reduce hazardous air pollutants from mobile sources. The rule limits the benzene content of gasoline and reduces toxic emissions from passenger vehicles and gas cans. The USEPA estimates that in 2030 this rule would reduce total emissions of MSATs by 330,000 tons and volatile organic compound (VOC) emissions (precursors to ozone and PM$_{2.5}$) by more than one million tons.

By 2010, the USEPA's existing programs will reduce MSATs by more than one million tons from 1999 levels. In addition to controlling pollutants, such as hydrocarbons, particulate matter, and nitrogen oxides, the USEPA's recent regulations controlling emissions from highway vehicles and nonroad equipment will result in large air toxic reductions. Furthermore, USEPA has programs under development that would provide additional benefits from further controls for small nonroad gasoline engines and diesel locomotive and marine engines. Finally, CARB has adopted regulations to reduce emissions from both on-road and off-road heavy duty diesel vehicles, e.g. equipment used in construction.

General Conformity

Pursuant to the General Conformity Rule (40 CFR Part 93, §93.158), a federal agency must perform a General Conformity Analysis for any federal action. The federal agency must then make a General Conformity Determination for any federal action in non-attainment or maintenance areas where the total of direct and indirect emissions of the applicable criteria pollutants or their precursors exceeds threshold levels. The JAG project is considered a federal action since it requires federal approval and will receive federal funding. It is therefore subject to a General Conformity Analysis.

The Proposed Action is within the SCAB. As discussed in Section 5.2.1.3 below, the SCAB is currently designated as an extreme non-attainment area for the 8-hour NAAQS for O$_3$; a serious non-attainment area for PM$_{10}$; and a non-attainment area for PM$_{2.5}$. The project area is either a "maintenance area" or in attainment with the NAAQS for the other applicable criteria pollutants.

The emission thresholds that trigger a General Conformity Determination for non-attainment and maintenance pollutants are specifically identified in the General Conformity Rule. The applicable thresholds for the Proposed Action in the project area are identified in Table 5.2-4, Applicability Thresholds for General Conformity Analysis.

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Table 5.2-4
Applicability Thresholds for General Conformity Analysis

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emissions Threshold (tons per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCAB</td>
<td>10</td>
</tr>
<tr>
<td>VOC</td>
<td>10</td>
</tr>
<tr>
<td>NOx</td>
<td>10</td>
</tr>
<tr>
<td>CO</td>
<td>100</td>
</tr>
<tr>
<td>PM_{10}</td>
<td>70</td>
</tr>
<tr>
<td>PM_{2.5}</td>
<td>100</td>
</tr>
</tbody>
</table>


Federal Greenhouse Gas Regulations

The federal government has been involved in climate change issues at least since 1978, when Congress passed the National Climate Program Act (92 Stat. 601), under authority of which the National Research Council prepared a report predicting that additional increases in atmospheric carbon dioxide would lead to non-negligible changes in climate. At the “Earth Summit” in 1992 in Rio de Janeiro, President George H.W. Bush signed the United Nations Framework Convention on Climate Change (UNFCCC), a nonbinding agreement among 154 nations to reduce atmospheric concentrations of carbon dioxide and other greenhouse gases. The treaty was ratified by the U.S. Senate. However, when the UNFCCC signatories met in 1997 in Kyoto, Japan, and adopted a protocol that assigned mandatory targets for industrialized nations to reduce greenhouse gas emissions, the U.S. Senate expressed its opposition to the treaty. The Kyoto Protocol was not submitted to the Senate for ratification.

In Massachusetts et al. v. Environmental Protection Agency et al. [549 U.S. 497 (2007)], the U.S. Supreme Court ruled that carbon dioxide (CO\textsubscript{2}), a greenhouse gas (GHG), was an air pollutant under the CAA, and that, consequently, the USEPA had the authority to regulate its emissions. The Court also held that the Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 15, 2009 the USEPA published its determination (effective January 14, 2010) that (1) the current and projected concentrations of the mix of six key greenhouse gases—carbon dioxide (CO\textsubscript{2}), methane (CH\textsubscript{4}), nitrous oxide (N\textsubscript{2}O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF\textsubscript{6})—in the atmosphere threaten the public health and welfare of current and future generations, and that (2) the combined emissions of GHG from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key greenhouse gases, and hence to the threat of climate change.\textsuperscript{26} These findings form the basis for subsequent regulations to control GHG emissions from motor vehicles.

Executive Order 13514 of October 5, 2009 established a strategy towards sustainability within the federal government and made reduction of GHG emissions a priority for

\textsuperscript{26} U.S. Environmental Protection Agency, “Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act.” 74 Federal Register 66496-66546 (December 15, 2009).
federal agencies. The order is limited to GHG reduction strategies and measures within federal operations. On February 18, 2010, the Council on Environmental Quality (CEQ) issued draft guidance on consideration of the effects of climate change and GHG emissions in NEPA documents. Although the guidance does not establish thresholds for significance, it proposes that federal agencies consider 25,000 metric tons or more per year of CO₂-equivalent GHG emissions “as an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public.”

To date, the USEPA’s regulatory focus has been upon requiring major stationary sources to report GHG emissions; developing emission standards; and establishing permitting requirements. None of these activities is relevant to the proposed project.

5.2.1.3 Existing Air Quality

Study Area

The study area focuses on Mount Lukens, but includes Mount Lee, Baldwin Hills, Verdugo Peak, and San Vicente Peak, which are all located in the South Coast Air Basin (SCAB), which also includes all of Orange County and portions of Riverside and San Bernardino counties. The air quality agency responsible for the SCAB portion of Los Angeles County is the South Coast Air Quality Management District (SCAQMD).

South Coast Air Basin

Meteorology and Climate

Air quality is affected by both the rate and location of pollutant emissions, and by meteorological conditions that influence movement and dispersal of pollutants. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollutant emissions and air quality.

The SCAB is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the southwest and high mountains around its remaining perimeter. The region lies in the semi-permanent high pressure zone of the eastern Pacific Ocean, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds.

The vertical dispersion of air pollutants in the SCAB is hampered by the presence of persistent temperature inversions. An upper layer of dry air that warms as it descends characterizes high-pressure systems, such as the semi-permanent high-pressure zone in which the SCAB is located. This upper layer restricts the upward movement of cooler marine-influenced air near the ground surface and results in the formation of subsidence inversions. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce worst-case conditions for the formation of photochemical smog.


29 Ibid., p. 1.
The atmospheric pollution potential of an area is largely dependent on winds, atmospheric stability, solar radiation, and terrain. The combination of low wind speeds and low inversions produces the greatest concentration of air pollutants. On days without inversions, or on days of winds averaging over 15 mph, smog potential is greatly reduced.\(^\text{30}\)

**Attainment Status**

**Table 5.2-5.** *Federal and State Attainment Status for the South Coast Air Basin* summarizes the SCAB's attainment status for criteria pollutants. The Basin is nonattainment for the federal ozone, respirable particulate matter (PM\(_{10}\)), and fine particulate matter (PM\(_{2.5}\)) ambient air quality standards. The SCAB is a maintenance area for CO and NO\(_2\), which means that, although the Basin has achieved compliance with the NAAQS for those pollutants, control strategies that were used to achieve compliance must continue. The attainment status for the CAAQS is similar to that for the NAAQS, except that the Basin is non-attainment for the California 1-hour NO\(_2\) standard.

**Table 5.2-5**  
Federal and State Attainment Status for the South Coast Air Basin

<table>
<thead>
<tr>
<th>Pollutants</th>
<th>Federal Classification</th>
<th>State Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone (O(_3))</td>
<td>Non-Attainment (Extreme)</td>
<td>Non-Attainment</td>
</tr>
<tr>
<td>Particulate Matter (PM(_{10}))</td>
<td>Non-Attainment (Serious)</td>
<td>Non-Attainment</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM(_{2.5}))</td>
<td>Non-Attainment</td>
<td>Non-Attainment</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>Maintenance</td>
<td>Attainment</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO(_2))</td>
<td>Maintenance</td>
<td>Non-Attainment</td>
</tr>
<tr>
<td>Sulfur Dioxide (SO(_2))</td>
<td>Attainment</td>
<td>Attainment</td>
</tr>
</tbody>
</table>


**Local Air Quality**

A network of ambient air monitoring stations is operated throughout the SCAB. The purpose of the monitoring stations is to measure ambient concentrations of criteria pollutants. The nearest ambient monitoring station to the project site (approximately 8 miles away) is the Burbank Station\(^{31}\) in Burbank, which measures O\(_3\), NO\(_2\), SO\(_2\), CO, PM\(_{10}\), and PM\(_{2.5}\) as well as other pollutants not the subject of this analysis. Ambient pollutant concentrations measured at this monitoring station in 2008-2010 are presented in **Table 5.2-6, Ambient Air Quality Data for the Burbank Monitoring Station**. During the three-year period, the following ambient air quality standards were exceeded at least

\(^{30}\) South Coast Air Quality Management District. CEQA Air Quality Handbook. Diamond Bar, California. 2006.

\(^{31}\) The address for the station is 228 West Palm Avenue, Burbank, California 91502.
once: 8-hour CAAQS and NAAQS and 1-hour CAAQS for O\textsubscript{3}; Annual Arithmetic Mean CAAQS and 24-hour CAAQS for PM\textsubscript{10}; and 24-hour NAAQS and Annual Arithmetic Mean CAAQS and NAAQS for PM\textsubscript{2.5}.

5.2.1.4 Air Quality Plans

The CAA requires each state to prepare, update and execute a state implementation plan (SIP), which describes how the state will achieve attainment with ambient air quality standards. The SIP is not a single document, but rather a collection of compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations and federal controls.\textsuperscript{32} Local air districts and other agencies, such as the Bureau of Automotive Repair and the Department of Pesticide Regulation, prepare SIP elements and submit them to CARB for review and approval. CARB forwards SIP revisions to the USEPA for approval and publication in the Federal Register.\textsuperscript{33} Once a provision is in a USEPA-approved SIP, it is federally enforceable.\textsuperscript{34}


\textsuperscript{33} Ibid.

### Table 5.2-6

Ambient Air Quality Data for the Burbank Monitoring Station

<table>
<thead>
<tr>
<th>Air Pollutant</th>
<th>Standard/Exceedance</th>
<th>228 W. Palm Ave. Burbank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2008</td>
</tr>
<tr>
<td><strong>Carbon Monoxide (CO)</strong></td>
<td>Year Coverage</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>Max. 1-hour Concentration (ppm)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Max. 8-hour Concentration (ppm)</td>
<td>2.48</td>
</tr>
<tr>
<td></td>
<td># Days&gt;Federal 1-hour Std. of 35 ppm</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td># Days&gt;Federal 8-hour Std. of 9 ppm</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td># Days&gt;California 8-hour Std. of 9.0 ppm</td>
<td>0</td>
</tr>
<tr>
<td><strong>Ozone (O₃)</strong></td>
<td>Year Coverage</td>
<td>98%</td>
</tr>
<tr>
<td></td>
<td>Max. 1-hour Concentration (ppm)</td>
<td>0.133</td>
</tr>
<tr>
<td></td>
<td>Max. 8-hour Concentration (ppm)</td>
<td>0.110</td>
</tr>
<tr>
<td></td>
<td># Days&gt;Federal 8-hour Std. of 0.075 ppm</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td># Days&gt;California 1-hour Std. of 0.09 ppm</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td># Days&gt;California 8-hour Std. of 0.07 ppm</td>
<td>34</td>
</tr>
<tr>
<td><strong>Nitrogen Dioxide (NO₂)</strong></td>
<td>Year Coverage</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>Max. 1-hour Concentration (ppm)</td>
<td>0.105</td>
</tr>
<tr>
<td></td>
<td>Annual Average (ppm)</td>
<td>0.029</td>
</tr>
<tr>
<td></td>
<td># Days&gt;California 1-hour Std. of 0.18 ppm</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sulfur Dioxide (SO₂)</strong></td>
<td>Year Coverage</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>Max. 24-hour Concentration (ppm)</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>Annual Average (ppm)</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td># Days&gt;California 24-hour Std. of 0.04 ppm</td>
<td>0</td>
</tr>
<tr>
<td><strong>Respirable Particulate Matter (PM₁₀)</strong></td>
<td>Year Coverage</td>
<td>86%</td>
</tr>
<tr>
<td></td>
<td>Max. 24-hour Concentration (µg/m³)</td>
<td>66.0</td>
</tr>
<tr>
<td></td>
<td>#Days&gt;Fed. 24-hour Std. of 150 µg/m³</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>#Days&gt;California 24-hour Std. of 50 µg/m³</td>
<td>ND</td>
</tr>
<tr>
<td></td>
<td>Annual Average (µg/m³)</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Fine Particulate Matter (PM₂.₅)</strong></td>
<td>Year Coverage</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>Max. 24-hour Concentration (µg/m³)</td>
<td>68.9</td>
</tr>
<tr>
<td></td>
<td>State Annual Average (µg/m³)</td>
<td>13.9</td>
</tr>
<tr>
<td></td>
<td>#Days&gt;Fed. 24-hour Std. of 35 µg/m³</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td>Federal Annual Average (µg/m³)</td>
<td>13.9</td>
</tr>
</tbody>
</table>

Source:
South Coast Air Quality Management District, “Historical Data by Year.” Internet URL: [http://www.aqmd.gov/smog/historicaldata.htm](http://www.aqmd.gov/smog/historicaldata.htm) (November 8, 2011)
South Coast Air Quality Management District

The SCAQMD is presently being guided by the following portions of the California State Implementation Plan (SIP):

- 2007 Ozone SIP
- 2007 PM$_{2.5}$ SIP
- 2007 CO SIP (Maintenance Plan)
- 2007 NO$_{2}$ SIP (Maintenance Plan)
- 2003 PM$_{10}$ SIP

The most recently approved Air Quality Management Plan (AQMP) was adopted by the SCAQMD Governing Board on June 1, 2007 and revised in October 2007. The 2007 AQMP projects attainment of the federal 8-hour O$_3$ and 24-hour PM$_{2.5}$ standards by 2023 and 2014, respectively. However, to meet those targets, it is necessary to supplement the identified control measures with undefined long-term (“black box”) measures that will reduce emissions by approximately 27 tons per day of VOC and 190 tons per day of NO$_x$. Given the uncertainty in its ability to find effective black box measures, the SCAQMD Board asked CARB to request of USEPA that the federal 8-hour ozone classification be changed to “extreme,” which would modify the attainment deadline to June 15, 2024. When CARB submitted the October 2007 version of the AQMP to USEPA as a SIP revision, it concurred with the SCAQMD’s request for reclassification of the 8-hour ozone status from severe 17 to extreme. On May 5, 2010, USEPA granted the request.

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36 South Coast Air Quality Management District (SCAQMD). 2007b. “A Resolution of the Governing Board of the South Coast Air Quality Management District certifying the Final Program Environmental Impact Report for the 2007 Air Quality Management Plan, adopting the Final 2007 Air Quality Management Plan (AQMP), to be referred to after adoption as the Final 2007 AQMP, and to fulfill U.S. EPA Requirements for the use of emission reductions from the Carl Moyer Program in the State Implementation Plan.” Resolution No. 07-9, Diamond Bar, California (June 1).


38 “Designation of Areas for Air Quality Planning Purposes; California; San Joaquin Valley, South Coast Air Basin, Coachella Valley, and Sacramento Metro 8-Hour Ozone Nonattainment Areas; Reclassification.” Federal Register 75(86):24409-24421 (May 5, 2010).
5.3 GEOLGY AND SOILS

This section discusses the affected environment related to geology and soils in the study area.

5.3.1 Study Area

The project site is located approximately three miles north of La Crescenta in the San Gabriel Mountains, and is situated at the summit of Mount Lukens. Located within the Angeles National Forest, Mount Lukens has an elevation of 5,074 feet above sea level, and is primarily vegetated with chaparral and grassland. Its summit is dotted with communication towers and related support buildings. The site is accessed via the Mount Lukens Truck Trail, which consists of an unimproved Forest Service road that starts at the Angeles crest Ranger Station, located off of State Highway 2 (Angeles Crest Highway), and meanders approximately 7 miles and climbs almost 3,000 feet in elevation to the site. The City of Los Angeles maintains a fenced-in compound containing two, approximately 100-foot tall, communications towers and two auxiliary or equipment buildings at the site. The access road immediately south of the compound is approximately level while the majority of the property appears to be graded and slopes toward the north at a gradient of approximately 3:1 horizontal to vertical or flatter.  

5.3.2 Geology

The site is located within the Transverse Ranges Geomorphic Province of Southern California. The Transverse Ranges are characterized by roughly east-west trending, convergent deformational structural features (linear topography, folding, and faulting) in contrast to the predominant northwest-southeast structural trend found in the other geomorphic provinces in California. The site is located on the western flank of the San Gabriel Mountains, which are bounded to the north by the Antelope Valley and the Mojave Desert and to the south by the communities of the greater Los Angeles area. The San Gabriel Mountains are an east-west trending mountain range composed primarily of Precambrian to Mesozoic-age igneous and metamorphic rocks, which are flanked on the north, south, and west by younger Tertiary and Quaternary-age volcanic and sedimentary rocks. The San Gabriel Mountains are bounded on the north by the San Andreas Fault zone, on the south and southwest by the Cucamonga-Sierra Madre fault complex, and to the east by the San Jacinto fault zone. The western portion of the range is dominated by the near-vertical, right lateral, strike-slip San Gabriel fault, which extends across the mountain range in a northwesterly direction.

At the site, gneiss is exposed on the ground surface immediately south of the existing communications building and the proposed communications tower. Quartz monzonite and/or quartz diorite bedrock were not observed at the immediate site. The gneiss was unweathered, extremely hard and strong. Laboratory tests indicate the gneiss has unconfined compressive strength values ranging between 5,260 and 13,060 psi. Unconfined compressive strength values obtained from two of the on-site boulders indicate the quartz monzonite ranges between 6,950 and 9,960 psi.


Due to the limited amount of exploration that was performed by the Geotechnical Engineering Group (GEO), the gneiss exposed and cored at the surface could represent a bedrock outcrop or large buried boulders.\textsuperscript{41}

5.3.3 Soils

As exposed on the surface, the site appears to be underlain by large boulders, cobbles, gravels, and sand of granitic origin.

5.3.4 Faulting and Seismicity

Primary seismic hazards that may affect the site include ground shaking, ground surface rupturing along faults, liquefaction, and earthquake-induced landslides. Based on the current understanding of the geologic framework of the site area, the seismic hazard which is expected to have the highest probability of affecting the site is ground shaking resulting from an earthquake occurring along any of the major active and potentially active faults in Southern California. Known regional faults that could produce significant ground shaking at the site include the San Andreas, Sierra Madre, Verdugo, San Jacinto, among others.\textsuperscript{42}

\textbf{San Andreas Fault Zone.} The San Andreas fault zone is California’s most prominent structural feature, trending in a general northwest direction for almost the entire length of the state. The southern segment is approximately 280 miles long. It extends from the Mexican border into the transverse ranges west of the Tejon Pass. Along this segment, there is no single traceable fault line; rather, the fault is composed of several branches. The fault is considered capable of generating a maximum credible earthquake of magnitude 8.25 on the Richter scale.

\textbf{Sierra Madre Fault Zone.} The Sierra Madre fault is a reverse fault. The length of this general zone is approximately 34 miles; however, there are multiple fault segments that run in this zone. In certain areas, these segments run beside one another and branch. The total length of the multiple, main fault segments within this zone is approximately 47 miles. Each of these segments is approximately 6 miles long. Nearby communities are Sunland, Altadena, Sierra Madre, Duarte, Monrovia, and Glendora. The slip rate is roughly 0.014 in/year to 0.015 in/year. The fault is considered capable of generating earthquakes with probable magnitudes of 6.0 to 7.0 on the Richter scale. It was responsible for the 1991 Sierra Madre earthquake.\textsuperscript{43}

\textbf{Verdugo Fault Zone} The Verdugo fault is a reverse fault that dips to the northeast, and is approximately 13 miles long. Nearby communities are Sun Valley, Burbank, and Glendale. The slip rate is roughly 0.019 in/year. The fault is considered capable of generating earthquakes with probable magnitudes of 6.0 to 6.8 on the Richter scale.\textsuperscript{44}

\textbf{San Jacinto Fault Zone} The San Jacinto fault is a right-lateral strike-slip and minor right-reverse fault. It is approximately 130 miles long, and includes the Coyote Creek fault. Nearby communities are Lytle Creek, San Bernardino, Loma Linda, San Jacinto, Hemet, Anza, Borrego Springs, Ocotillo Wells. The slip rate is roughly 0.27 in/year and 0.67

\textsuperscript{41} Ibid.
\textsuperscript{42} Ibid.
\textsuperscript{43} Southern California Data Center. Found at: \url{http://www.data.scec.org/}. Accessed October 31, 2011.
\textsuperscript{44} Ibid.
in/year. The fault is considered capable of generating earthquakes with probable magnitudes of 6.5 to 7.5 on the Richter scale.\footnote{Ibid.}

The California Department of Conservation-California Geological Survey (2003) estimates there is a ten percent probability of exceedance in 50 years for a peak horizontal ground acceleration of 0.60g from firm rock conditions and the potential for a magnitude M 7.0 earthquake within this area.\footnote{Geotechnical Investigation Report for LA-RICS Mount Lukens Communications Site. City of Los Angeles Department of Public Works, Bureau of Engineering, Geotechnical Engineering Group. September 29, 2011.}

### 5.3.5 Ground Rupture and Deformation

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (Act) requires that “Earthquake Fault Zones” be established along the trace of active faults. The purpose of the Act is to regulate development near active faults so as to mitigate the hazard of surface fault rupture. Earthquake faults that are “sufficiently active” (have evidence of surface displacement within Holocene time or the last 11,000 years) and “well-defined” (a fault whose trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface) are subject to zoning. Under the Act, the State Geologist is required to delineate Earthquake Fault zones along all sufficiently active and well-defined faults that constitute a hazard to structures from surface displacement. Maps depicting the Earthquake Fault Zones are issued by the California Geological Survey (CGS).

According to the CGS, the site is not located within an Alquist-Priolo Earthquake Fault Zone, and no known faults cross or are near the site. According to Dibblee (2002), the closest fault is San Gabriel Fault, which is located approximately 1.5 miles northeast of the site. Although the San Gabriel Fault does not meet the criteria required for inclusion in an Official Earthquake Fault Zone prepared by the California Department of conservation-California Geological Survey (CGS) because no evidence of Holocene surface rupture has been located, it is considered to be a major potential seismic source.

### 5.3.6 Liquefaction

Liquefaction is a process that occurs when saturated sediments are subjected to repeated strain reversals during a seismic event. The strain reversals cause an increase in pore water pressure such that the internal pore pressure approaches the overburden pressure and the shear strength approaches a low residual value. Liquefied soils are subject to flow, consolidation, or excessive strain. Liquefaction typically occurs in loose to medium dense sand and silty sand soils below the groundwater table. Predominantly fine-grained soils such as silts and clays are less susceptible to liquefaction. According to the State of California Seismic Hazard Zones Map (Figure 4 of the Geotechnical Investigation Report for LA-RICS Mount Lukens Communications Site), the site is not located within an area that has potential for liquefaction. Furthermore, liquefaction is not considered a hazard at the site because it is underlain by shallow bedrock.\footnote{Geotechnical Investigation Report for LA-RICS Mount Lukens Communications Site. City of Los Angeles Department of Public Works, Bureau of Engineering, Geotechnical Engineering Group. September 29, 2011.}
5.3.7 Earthquake-Induced Landslides

According to the State of California Seismic Hazards Zones Map (Figure 4 of the Geotechnical Investigation Report for LA-RICS Mount Lukens Communications Site), the site is located within an area that has the potential for earthquake-induced landslide activity.\textsuperscript{48}

5.3.8 Groundwater

No seeps or springs were observed at the site. No groundwater was encountered in any of the test pits excavated by L.K.R. (1997).

5.3.9 Prime Farmlands

The California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program produced the Los Angeles Important Farmland Map, which identifies land use types for most of the non-urbanized areas of Los Angeles County. A large part of the urbanized portion of the Los Angeles Basin has not been surveyed because land in this area is no longer used for farming.

\textsuperscript{48} Ibid.
5.4 WATER RESOURCES

This section identifies and describes surface and groundwater resources in Los Angeles County that could be affected by construction of the Mount Lukens JAG site.

5.4.1 Climate

The windward side of the San Gabriel Mountain Range has a subtropical climate. On average, the warmest month of the year in the County is August, with an average maximum temperature of 85 degrees Fahrenheit; while the coldest month of the year is December, with an average minimum temperature of 48 degrees Fahrenheit. Most precipitation occurs between December and March, and rainless periods of several months are common. The intensity of rainfall in Southern California is highly variable, and can range from less than a tenth of an inch of rainfall per day to more than one inch of rainfall per hour.

5.4.2 Vegetative Cover and Land Use

Runoff characteristics are influenced by soil type, slope, vegetation, and many other conditions. Regions will differ according to these factors. For example, steep canyon walls and channel slopes that characterize the mountains in Los Angeles County rapidly concentrate storm runoff. Precipitation during periods of low soil moisture is almost entirely absorbed by the porous mountain soils. Significant surface runoff does not occur until soil moisture is near field capacity, except during extremely intense rainfall. The project site is undeveloped and vegetated with chaparral and grassland.

5.4.3 Potentially Affected Surface Water Resources

The project area encompasses a portion of the South Coast Hydrologic Region. The South Coast Hydrologic Region covers approximately 6.78 million acres (10,600 square miles) of the southern California watershed that drains to the Pacific Ocean. The Mount Lukens JAG site is located within the Los Angeles River Watershed, which is discussed below.

Los Angeles River Watershed

The Los Angeles River is the heart of an 871-square mile watershed that encompasses the Santa Susana Mountains to the west, the San Gabriel Mountains to the north and east, and the Santa Monica Mountains and Los Angeles coastal plain to the south. The watershed encompasses and is shaped by the path of the Los Angeles River, which flows from its headwaters in the mountains eastward to the northern corner of Griffith Park. The Los Angeles River, which experiences perennial low flows, was highly modified between 1917 and 1970 to control runoff and flooding. It has been channelized and lined with concrete except for reaches located in the Sepulveda Flood-Control Basin, within the Glendale Narrows, and south of Willow Street in Long Beach.

5.4.4 Groundwater

The South Coast Hydrologic Region contains 56 delineated groundwater basins. The Los Angeles subregion of the South Coast Hydrologic Region, which includes the study area, overlies 21 groundwater basins and encompasses most of Ventura and Los

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Ibid.
Within this subregion, the San Fernando Valley Basin is the nearest groundwater basin to the Mount Lukens site (approximately 5,060 feet).

The San Fernando Valley Groundwater Basin includes the water-bearing sediments beneath the San Fernando Valley, Tujunga Valley, Browns Canyon, and the alluvial areas surrounding the Verdugo Mountains near La Crescenta and Eagle Rock. The basin is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills.

Recharge of the basin occurs in a variety of ways. Spreading of imported water occurs in the Pacoima, Tujunga, and Hansen Spreading Grounds. Other sources of recharge include stream flow from the surrounding mountains, runoff from precipitation falling on impervious areas, reclaimed wastewater, and industrial discharges. The water-bearing sediments consist of the lower Pleistocene Saugus Formation, Pleistocene and Holocene age alluvium. The groundwater in this basin is mainly unconfined with some confinement within the Saugus Formation in the western part of the basin and in the Sylmar and Eagle Rock areas. Groundwater flows generally from the edges of the basin toward the middle of the basin, then beneath the Los Angeles River Narrows into the Central Subbasin of the Coastal Plain of Los Angeles Basin. The total storage capacity of the San Fernando Valley Groundwater Basin is calculated at 3.67 million acre feet.\(^{51}\)

5.4.5 Regulatory Framework

Discharges into waters of the United States are regulated by several resource agencies, including:

- U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA);
- State Water Resources Control Board (SWRCB) and the Los Angeles Regional Water Quality Control Board (LARWQCB) under Sections 303, 401 and 402 of the CWA and the California Porter-Cologne Water Quality Act; and by the
- California Department of Fish and Game (CDFG) under Sections 1601-1603 of the California Fish and Game Code.

Federal Laws and Regulations

Because of their ecological importance, the United States has passed a number of regulations to protect waterways and special aquatic sites, such as wetlands, from human development. Hydrologic and ecologic factors in applying the significant nexus test to determine whether the proposed project is within or adjacent to a Waters of the United States (WOUS) or Waters of the State (WSC) are considered. Water quality and pollutant loads are also regulated.

**Clean Water Act - Section 402**

Direct discharges of pollutants into waters of the United States are not allowed, except in accordance with the National Pollutant Discharge Elimination System (NPDES) program established by Section 402 of the CWA. The main goal of the NPDES program is to protect human health and the environment. Pursuant to the NPDES program, storm water discharges from municipal storm drain systems, specific industrial activities, and construction activities (of one acre or more) require permits. NPDES permits establish enforceable limits on discharges, require effluent monitoring, designate reporting requirements, and require the permitted project proponent to use Best Management Practices (BMPs) during active construction and post-construction phases of the project.

Construction activity that results in soil disturbances of less than one acre is subject to the general permit if the construction activity is part of a larger common plan of development that encompasses one or more acres of soil disturbance or if there is significant water quality impairment resulting from the activity. Therefore, a programmatic approach to the JAG project is advised.

If a Section 402 permit is required, a Notice of Intent (NOI) under Los Angeles County’s general NPDES permit (No. CAS004001, Order 01-182) or California’s general permit (CAS000002) must be submitted. The LARWQCB General Permit for Storm Water Discharges Associated with Construction Activity (General Permit) Water Quality is Order 99-08-DWQ.

The General Permit requires all dischargers, where construction activity disturbs one acre or more, to:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies BMPs that will prevent all construction pollutants from contacting storm water and with the intent of keeping all products of erosion from moving off site into receiving waters.
  - The SWPPP should include all phases and areas of the project under one programmatic plan to streamline the process of preparation and finalization of the permitting process.
  - In regards to the 402 “permit,” the SWPPP created under guidance of the general permit satisfies the intent of the general permit. An actual “permit” is not issued as a paper from the agency. Once a SWPPP is prepared and implemented the general permit is complied with for the project.
- Eliminate or reduce non-storm water discharges to storm sewer systems and other waters of the nation.
- Perform inspections of all BMPs contained within the SWPPP to ensure control of all potential point-source pollutants.

**State Laws and Regulations**

**Porter-Cologne Water Quality Control Act**

The Porter-Cologne Act (Division 7 of the California Water Code) establishes a regulatory program to protect water quality and to protect beneficial uses of State waters. It requires that any person proposing to discharge wastes that could affect the quality of “waters of the State” file a Report of Waste Discharge to the appropriate regional water quality control board (RWQCB). The RWQCB then either issues waste
discharge requirements (WDRs) or a waiver for WDRs. Unlike the CWA, “waters of the State” include both groundwater and surface waters located within the State’s boundaries. In March 2003, the SWRCB began requiring NPDES permit compliance for discharge from construction activities that disturb one or more acres of soil.

The Porter-Cologne Act also requires each RWQCB to adopt a Water Quality Control Plan or Basin Plan. The Basin Plan designates beneficial uses in the basin, establishes water quality objectives, and references the plans and policies adopted by the SWRCB. Each RWQCB establishes water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisances. The Water Code provides flexibility for some change in water quality, provided that beneficial uses are not adversely affected.

**California Fish and Game Code Sections 1601-1603**

The California Department of Fish and Game (CDFG), through provisions of Sections 1601-1603 Fish and Game Code, is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams and rivers are defined by the presence of a channel bed and banks and at least an intermittent flow of water. CDFG typically extends the limits of its jurisdiction laterally beyond the channel banks for streams that support riparian vegetation. In these situations, the outer edge of the riparian vegetation is generally used as the lateral extent of the stream and the CDFG jurisdiction.

California Fish and Game Code Section 1602 requires any person, state or local governmental agency, or public utility to notify the CDFG before beginning any activity that will result in one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream or lake. Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state.\(^{52}\)

**Regional and Local Water Quality Regulations**

**Dewatering Activities**

Dewatering activities and groundwater discharge onto the land must comply with General NPDES permit CAG994004, Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties. Under the terms of the general permit, the applicant must conduct testing on samples of the groundwater to be discharged. The sample is analyzed and compared to the water quality screening criteria. The applicant must be able to demonstrate that pollutant concentrations in the discharge will not cause a violation of any applicable water quality objective for the receiving waters, and that discharge will not exceed the water quality criteria for toxic pollutants.

**Los Angeles County MS4 NPDES Permit Requirements**

The storm water pollution prevention requirements for the municipal separate storm sewer systems (MS4) in Los Angeles County fall under NPDES Permit No.

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\(^{52}\) California Department of Fish and Game, Lake and Streambed Alteration Program. Internet URL: www.dfg.ca.gov/habcon/1600/. Accessed April 14, 2011.
CAS004001. To protect the beneficial uses of receiving waters in the region, the primary objectives of the requirements are to (1) effectively prohibit non-storm water discharges into the MS4s unless such discharges are authorized by a separate NPDES permit or are exempt by the subject permit, and (2) develop and implement programs, policies, and legal authority necessary to minimize the discharge of pollutants in urban runoff to the MS4 to the Maximum Extent Practicable (MEP). MEP means the standard for implementation of storm water management to reduce pollutants in storm water. The major focus of such efforts is the development and implementation of an appropriate Municipal Storm Water Management Program (MSWMP), including BMPs.

**Drainage and Flood Control Improvements**

Drainage and flood control structures and improvements in the County of Los Angeles are subject to review and approval by the County of Los Angeles Flood Control District. The agency uses design standards to provide a specified level of protection against flooding for different types of land use and regulates drainage-related improvements through plan approvals and permits.

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53 Renewal of, and changes to, the MS4 permit for Los Angeles County and its cities were approved by the Regional Water Quality Control Board August 2007, by Order No. R4-2007-0042).
5.5 BIOLOGICAL RESOURCES

This section discusses the affected environment related to biological resources in the study area.

5.5.1 Study Area

The proposed project is located within an existing communication facility in the San Gabriel Mountains, County of Los Angeles, California. Mount Lukens is located immediately northeast of Dunsmore and Cooks Canyons and northeast of the Sunland-Tujunga district of Los Angeles. The peak is 5,074 feet above sea level. The site is included in the United States Forest Service Angeles National Forest and is accessible to vehicles from SR-2 via a narrow truck trail. This truck trail is a winding dirt road that runs 1.5 miles from the highway to the site. The site is located in the southwest quarter of the U.S. Geological Survey (USGS) Condor Peak 7.5-minute Quadrangle.

5.5.2 Wildlife

Characteristic Wildlife Species

Los Angeles County supports approximately 432 species of birds, 94 species of mammals, 17 species of amphibians, and 54 species of reptiles. In addition to high total species richness, California boasts a high proportion of endemic species that exist nowhere else in the world. Rapid human development in the County of Los Angeles has, however, significantly reduced, degraded, and fragmented native habitats. As a consequence, southern California has one of the greatest densities of federally endangered and threatened species in the country. Refer to Section 6.5 for site-specific details.

5.5.3 Vegetation

Characteristic Vegetation Types

The project study area occurs within one of only five Mediterranean eco-regions in the world (southern California, Western Australia, coastal Chile, coastal South Africa, and the European Mediterranean). Mediterranean eco-regions occur along west-facing coastlines and are characterized by relatively short, cool, wet winters and long, dry summers. Because of the prolonged dry season, Mediterranean ecosystems tend to support shrub and grassland vegetation types. The Mount Lukens project site appears to contain only two major vegetation types; chaparral and disturbed annual grassland. Plant species and vegetation communities observed on-site are discussed in Chapter 6.5.

5.5.4 Wetland Habitat

The following section defines wetlands, discusses their general ecological importance, and describes wetland habitats that occur in the proposed project area. For a broader discussion on water resources and regulations, including the conditions and occurrences of surface water, ground water, coastal zone, floodplains, and wild and scenic rivers in the project area, see Section 5.4 on Water Resources.

Wetlands represent a subset of Waters of the United States (WOUS) and Special Aquatic Sites that include streams, rivers, lakes, ponds, fresh and saltwater marshes, estuaries, and near-shore marine environments that support biological diversity. The

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54 Ingles 1957; Stebbins 1985; Holt 1990.
U.S. Army Corps of Engineers (USACE)\textsuperscript{55} defines wetlands as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.”

A number of federal and State regulations exist to protect wetland habitats. As discussed in Section 5.4.4 (Regulatory Framework), the USACE has jurisdiction over wetlands and other waters of the United States as established in Section 404 of the Clean Water Act. To qualify a site as a jurisdictional wetland as defined in Section 404 of the Clean Water Act, hydrophytic vegetation, wetland hydrology, and hydric soils all must be present. The USACE requires that: (1) impacts to wetlands be avoided; (2) unavoidable impacts be minimized to the maximum extent practicable; and (3) when unavoidable, impacts be mitigated to achieve no-net-loss of wetland functions and values.

Sections 1601 – 1603 of the California Department of Fish & Game (CDFG) Code also requires a Streambed Alteration Agreement be created and followed for proposed projects found to pose adverse impacts to wetland habitats and wildlife.

All USACE wetlands are CDFG wetlands; however, CDFG wetlands also include habitat with hydrophytic vegetation regardless of whether the habitat meets the hydrology or hydric soils criteria. CDFG’s requirements regarding avoidance and mitigation of impacts are identical to the USACE requirements addressed in the technical document. For a complete discussion of state and federal regulations concerning wildlife and waters of the US, please see the attached Biological Assessment (See Appendix A).

As defined above, wetland habitat does not exist in the project vicinity.

\subsection*{5.5.5 Threatened and Endangered Species}

The federal Endangered Species Act (ESA) of 1973 was created to safeguard plant and animal species in the United States from extinction.\textsuperscript{56} In addition to giving protection to individual species, ESA protects and authorizes special management of critical habitat, specific geographic area(s) deemed essential for the conservation of a threatened or endangered species. Records of federally protected plant and animal species previously observed in the project vicinity (i.e. with 5 miles) were gathered from the California Native Plant Society (CNPS) list of Rare, Threatened, and Endangered Plants, the California Department of Fish & Game’s California Natural Diversity Database (CNDDB) RareFind\textsuperscript{57} and RareFind4 program, and the United States Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS)\textsuperscript{58}. Lists of these federally protected plant and wildlife species are provided in Table 5.5-1 and Table 5.5-2, respectively.

Informal consultation with the USFWS concerning potential project impacts to listed-species and their habitats was initiated with the Ventura USFWS office in October of 2011. Conversations with other wildlife and natural resource agencies, including the

\begin{itemize}
\item \textsuperscript{55} USACE, 1987. Corps of Engineers Wetlands Delineation Manual, Part II.
\item \textsuperscript{56} USFWS, http://www.fws.gov/laws/lewsdigest/esact.html.
\item \textsuperscript{57} California Natural Diversity Database, 2011.
\item \textsuperscript{58} USFWS, 2011. Environmental Conservation Online System’s Information, Planning, and Conservation System (ECOS-IPaC). Available at <http://ecos.fws.gov/ipac/> 
\end{itemize}
U.S. Forest Service (USFS), and CDFG were also initiated. Outcomes from these consultations, including agency recommendations, are discussed in Chapter 6.5.

5.5.6 Other Protections

In addition to the Endangered Species Act, the federal government has passed legislation that protects certain wildlife groups. The Migratory Bird Treaty Act (16 U.S.C. §703) and Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) both require the federal government to protect migratory birds. The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) prohibits anyone without a permit from “taking” or disturbing bald or golden eagles, including their nests and eggs. Lastly, The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §1801) was created to protect fish species and their habitat.
### Table 5.5-1
USFWS and California Natural Diversity Database Checklist of Federally Listed and USFS Sensitive Plant Species within the Mount Lukens Vicinity

<table>
<thead>
<tr>
<th>No.</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Federal Listing Status</th>
<th>Forest Sensitive and Fully Protected</th>
<th>Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Orcuttia californica</em></td>
<td>California orcutt grass</td>
<td>Endangered</td>
<td></td>
<td>Vernal pool, freshwater wetland</td>
</tr>
<tr>
<td>2</td>
<td><em>Nasturtium gambelii</em> (Rorippa gambelii)</td>
<td>Gambel's water cress</td>
<td>Endangered</td>
<td>USFS Sensitive</td>
<td>Brackish marsh, freshwater marsh, wetland</td>
</tr>
<tr>
<td>3</td>
<td><em>Pentachaeta lyonii</em></td>
<td>Lyon's pentachaeta</td>
<td>Endangered</td>
<td></td>
<td>Chaparral, Valley and foothill grassland</td>
</tr>
<tr>
<td>4</td>
<td><em>Arenaria paludicola</em></td>
<td>Marsh sandwort</td>
<td>Endangered</td>
<td>USFS Sensitive</td>
<td>Freshwater marsh, wetland</td>
</tr>
<tr>
<td>5</td>
<td><em>Calochortus plummerae</em></td>
<td>Plummer's mariposa-lily</td>
<td>Endangered</td>
<td>USFS Sensitive</td>
<td>Chaparral, coastal scrub, yellow pine forest, cismontane woodland, and valley and foothill grassland</td>
</tr>
<tr>
<td>6</td>
<td><em>Navarretia fossalis</em></td>
<td>Spreading navarretia</td>
<td>Threatened</td>
<td></td>
<td>Freshwater marsh and vernal pools</td>
</tr>
<tr>
<td>7</td>
<td><em>Dodecahema leptoceras</em></td>
<td>Slender-horned spineflower</td>
<td>Endangered</td>
<td>USFS Sensitive</td>
<td>Sandy soils in coastal sage scrub, chaparral, and cismontane woodland</td>
</tr>
<tr>
<td>8</td>
<td><em>Brodiaea filifolia</em></td>
<td>Thread-leaved brodiaea</td>
<td>Threatened</td>
<td></td>
<td>Cismontane woodland, coastal scrub, playa, valley and foothill grassland, vernal pool</td>
</tr>
</tbody>
</table>

### Table 5.5-2
USFWS and California Natural Diversity Database Checklist of Federally Listed and USFS Sensitive Wildlife Species within the Mount Lukens Project Vicinity

<table>
<thead>
<tr>
<th>No.</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Federal Listing Status</th>
<th>Forest Sensitive and Fully Protected</th>
<th>Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Phrynosoma blainvilli</em></td>
<td>Coast horned lizard</td>
<td></td>
<td>USFS Sensitive</td>
<td>Chaparral and coastal sage scrub in areas with loose soil and relatively open vegetation canopy</td>
</tr>
<tr>
<td>2</td>
<td><em>Gopherus agassizii</em></td>
<td>Desert tortoise</td>
<td>Threatened</td>
<td></td>
<td>Desert scrub, Joshua tree woodland, alluvial fans, desert oases, and sandy dunes</td>
</tr>
<tr>
<td>3</td>
<td><em>Thamnophis hammondii</em></td>
<td>Two-striped garter snake</td>
<td></td>
<td>USFS Sensitive</td>
<td>Riparian vegetation found in chaparral, oak woodland, and coastal sage scrub</td>
</tr>
<tr>
<td>4</td>
<td><em>Emys marmorata</em></td>
<td>Western pond turtle</td>
<td></td>
<td>USFS Sensitive</td>
<td>Aquatic habitats such as freshwater streams and ponds with emergent vegetation and upland vegetation in close proximity</td>
</tr>
<tr>
<td>5</td>
<td><em>Falco peregrinus anatum</em></td>
<td>American peregrine falcon</td>
<td>Delisted</td>
<td></td>
<td>Requires open areas for foraging such as grasslands and meadows. Nests on cliffs, shallow rock crevices, and buildings occasionally. Breeds between March and May.</td>
</tr>
<tr>
<td>6</td>
<td><em>Gymnogyps californianus</em></td>
<td>California condor</td>
<td>Endangered</td>
<td></td>
<td>Chaparral, Valley and foothill grassland</td>
</tr>
<tr>
<td>7</td>
<td><em>Polioptila californica californica</em></td>
<td>Coastal California gnatcatcher</td>
<td>Threatened</td>
<td></td>
<td>Coastal bluff scrub, Coastal scrub</td>
</tr>
<tr>
<td>8</td>
<td><em>Vireo bellii pusillus</em></td>
<td>Least Bell's vireo</td>
<td>Endangered</td>
<td></td>
<td>Riparian forest, Riparian scrub, Riparian woodland</td>
</tr>
<tr>
<td>9</td>
<td><em>Empidonax traillii extimus</em></td>
<td>Southwestern willow flycatcher</td>
<td>Endangered</td>
<td></td>
<td>Riparian woodland</td>
</tr>
<tr>
<td>10</td>
<td><em>Catostomus santaanae</em></td>
<td>Santa Ana sucker</td>
<td>Threatened</td>
<td></td>
<td>Aquatic, South coast flowing waters</td>
</tr>
<tr>
<td>No.</td>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Federal Listing Status</td>
<td>Forest Sensitive and Fully Protected</td>
<td>Habitat</td>
</tr>
<tr>
<td>-----</td>
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<td>------------------------------------</td>
<td>------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>11</td>
<td><em>Gasterosteus aculeatus williamsoni</em></td>
<td>Unarmored threespine stickleback</td>
<td>Endangered</td>
<td></td>
<td>Freshwater streams that move slowly and are shaded with dense vegetation.</td>
</tr>
<tr>
<td>12</td>
<td><em>Rhinichthys osculus ssp. 3</em></td>
<td>Santa Ana speckled dace</td>
<td></td>
<td>USFS Sensitive</td>
<td>Freshwater streams with shallow cobble and gravel riffles with abundant cover.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Crustaceans</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td><em>Streptocephalus woottoni</em></td>
<td>Riverside fairy shrimp</td>
<td>Endangered</td>
<td></td>
<td>Vernal pools in Riverside County</td>
</tr>
<tr>
<td>14</td>
<td><em>Branchinecta lynchi</em></td>
<td>Vernal pool fairy shrimp</td>
<td>Threatened</td>
<td></td>
<td>Vernal pools</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Amphibians</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td><em>Bufo californicus</em></td>
<td>Arroyo toad</td>
<td>Endangered</td>
<td></td>
<td>Semi-arid regions near freshwater washes or streams in valley foothills or desert riparian habitats.</td>
</tr>
<tr>
<td>16</td>
<td><em>Rana draytonii</em></td>
<td>California red-legged frog</td>
<td>Threatened</td>
<td></td>
<td>Slow-moving or standing deep ponds, pools and streams. Prefers tall vegetation like grasses, cattails and shrubs.</td>
</tr>
<tr>
<td>17</td>
<td><em>Rana mucosa</em></td>
<td>Sierra Madre yellow-legged frog</td>
<td>Endangered</td>
<td>USFS Sensitive</td>
<td>Rocky, shaded, cool canyon streams with steep sloping banks.</td>
</tr>
</tbody>
</table>

*Source: UltraSystems Environmental, 2011.*
5.6 **HISTORIC AND CULTURAL RESOURCES**

This section discusses the affected environment related to historic and cultural resources in the study area.

5.6.1 **Study Area**

Los Angeles County occupies 4,084 square miles within southern California and spans a variety of topographies and biological environments. These include offshore islands, 70 miles of Pacific Ocean coastline, major parts of the Santa Monica, San Bernardino, and San Gabriel Mountains, the Mohave Desert, and several large rivers including the Los Angeles, San Gabriel and Santa Clara Rivers. Although the county contains the major urban center of the west coast of the United States, there remain large expanses of woodland, scrubland, and grasslands. The urban environment is dominated by the City of Los Angeles and numerous towns within its corporate boundaries, but there are an additional 87 cities within the County of Los Angeles, and urban, suburban and rural lands under County jurisdiction. See Section 3.2 for further information on the geographic setting.

5.6.2 **Archaeological Resources**

The diverse and rich environment of the Los Angeles region has been inhabited by Native Americans since the peopling of the New World, probably dating back 12,000 years before present (YBP). Archaeological sites in the County have been dated back to over 9,000 YBP. All the diverse environments of the region, from the ocean to the desert, were exploited for their resources and inhabited on a year-round basis. Therefore there is a likelihood of discovering archaeological resources both on the surface and subsurface of undisturbed areas. The State Historic Preservation Officer (SHPO) requires an investigation of the potential for archaeological resources through two approaches – a records search for known sites at the local California Historic Resources Inventory System’s Information Center, and a field survey. This research was conducted for the project site under review.

No known archaeological resources are recorded at the South Central Coastal Information Center (SCCIC) for the proposed Mount Lukens site location. A field survey, conducted in conjunction with a visit to record any historic architectural resources, did not observe any archaeological resources in the vicinity.

5.6.3 **Architectural Resources**

As with the archaeological resources, SHPO requires an investigation of the potential for National Register of Historic Properties as well as the identification, description and evaluation of potential Historical Resource properties. This research is conducted through two approaches – a records search for known sites at the California Historic Resources Inventory System’s SCCIC, and a field survey. This research was conducted for the proposed Mount Lukens project site under review.

No structures at or nearby the project site with a construction date that placed them in the “historic” category of being age 45 years or more by FCC regulations were present.

5.6.4 **Native Resources**

Native American cultural and historic resources may include, but are not limited to, archaeological remains of past habitations, camps and cemeteries. Places used for healing, to gather resources for food and implements, for conducting religious
ceremonies, and cultural landscapes where events of religious and historic importance took place, are all included in this category. Some localities in the region of a spiritual nature have been documented and submitted to the Native American Heritage Commission (NAHC), a California state agency, for inclusion in its Sacred Lands File (SLF). Others are known within the tribal community, held in oral traditions by the group’s elders. The NAHC was contacted and the location of the proposed Mount Lukens project site was submitted for review. The Commission’s response included a list of local Native American tribes, organizations and individuals, descendants of the traditional Gabrielino and Fernandeño tribes whose traditional lands encompass the project area. No federally recognized tribes have traditional lands within the project area.

The NAHC found that the Mount Lukens project site is not situated within a half-mile of a known site on the Sacred Lands File. It is up to the Native American contacts provided by the Commission to provide further details on Native cultural resources if they wish.

5.6.5 Paleontological Resources

Paleontological resources represent the remains of prehistoric life, exclusive of any human remains, and include the localities where fossils were collected as well as the sedimentary rock formations in which they were found. The defining character of fossils or fossil deposits is their geologic age, which is typically – but not always – regarded as older than 10,000 years, the generally accepted temporal boundary marking the end of the last late Pleistocene glaciations and the beginning of the current Holocene epoch.

The results of the paleontological assessment indicate that the proposed project’s potential to impact paleontological resources is low at the Mount Lukens site.
5.7 AESTHETIC AND VISUAL RESOURCES
This section discusses the affected environment related to aesthetics and visual resources in the study area.

5.7.1 Study Area
The proposed project will add communications equipment to an existing facility in Mount Lukens occupied for the City of Los Angeles Mount Lukens facility. Given the height of the new tower, the project study area is a circular area within a 1 mile radius of the project site. Figure 5.7-1, Study Area Map shows the study area as well as any potential visual resources outside the 1-mile buffer.
5.7.2 Visual and Aesthetic Character

The project site is located within the Angeles National Forest. The project site is within an existing communications facility located on the summit of Mount Lukens within a remote natural environment, surrounded by mountains and open space in all directions. The fenced facility consists of two existing towers (approximately 100 feet each), equipment shelter, and dirt pathways. The project site provides a good vantage point to view the surrounding and distant mountains. The visual and aesthetic character of the surrounding area is typical of a remote mountain area.

5.7.3 Architectural Character

The project site is enclosed within a chain link fence. The existing communication towers at this location are two approximately 100-foot free-standing lattice towers. There are also two single-story concrete rectangular box equipment shelters adjacent to the proposed tower site. The equipment shelter does not have windows, but has several air conditioning and electrical vents throughout the facades of the shelter.

5.7.4 State and National Scenic Byways

The National Scenic Byways Program is administered by the U.S. Department of Transportation, Federal Highway Administration. Established in Title 23, Section 162 of the United States Code under the Intermodal Surface Transportation Efficiency Act of 1991 and reauthorized and expanded significantly in 1988 under TEA-21 and again under SAFETEA-LU in 2005, the program is a grass-roots collaborative effort established to help recognize, preserve and enhance selected roads throughout the United States.  

California’s Scenic Highway Program was created by the Legislature in 1963. Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263.  

The project is not located near a National Scenic Byway, State Scenic Highway or designated County Scenic Highway.


5.7.5 **Wild and Scenic Rivers**

The National Wild and Scenic Rivers System was created by Congress (Public Law 90-542, 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. Rivers may be designated by Congress or, if certain requirements are met, the Secretary of the Interior. Rivers are classified as wild, scenic, or recreational.\(^{61}\)

Piru Creek is the only designated National Wild and Scenic River within the Los Angeles County study area. Piru Creek is located approximately 30 miles northwest of the project site.

5.7.6 **State and National Parks and Forests, Wilderness Areas and Wildlife Refuges**

Angeles National Forest was established by Executive Order in December 1892 and covers over 650,000 acres, about one-quarter of Los Angeles County. The land within the Forest is as diverse in appearance and terrain as it is in the opportunities it provides for enjoyment. Elevations range from 1,200 to 10,064 feet. Much of the Forest consists of dense chaparral, which changes to pine and fir-covered slopes beneath the peaks of the higher elevations.\(^{62}\)

The project site is not located within a state park.

The Rim of the Valley Trail Corridor, which is under the geographic authority of the Santa Monica Mountains Conservancy, is located adjacent to the project site. The Corridor was created to facilitate the development of an interlocking, connected system of public parks, trails and wildlife habitat preserves within the mountain areas, circling the north, east and west edges of the San Fernando/La Crescenta Valleys.\(^{63}\)

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\(^{63}\) Rim of the Valley Trail Corridor Master Plan. June 1990.
5.8 LAND USE

This section discusses the affected environment related to land use and local permitting in the vicinity of the project site.

5.8.1 Study Area

The Mount Lukens facility is located in the Angeles National Forest near Mount Lukens Road and Rim of the Valley Trail in Los Angeles County. For the purpose of analysis in this report, the study area is generally defined as a 500-foot radius around the proposed project site for consideration of impacts to residential uses and approximately a 0.25-mile radius for potentially sensitive receptors (i.e., schools and hospitals). Areas adjacent to known or reasonably expected haul routes that may be used during the construction phase for the site were also considered. These areas represent the extent of the area where the proposed project is most likely to result in an impact or change to land use conditions.

5.8.2 Existing Zoning and Land Uses

A 120 foot self supporting steel communication tower is located on site, along with an existing emergency generator. There are also several other communications towers and support buildings near the project site.

<table>
<thead>
<tr>
<th>Table 5.8-1</th>
<th>Adjacent Land Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>Open space</td>
</tr>
<tr>
<td>South</td>
<td>Open space</td>
</tr>
<tr>
<td>East</td>
<td>Open space</td>
</tr>
<tr>
<td>West</td>
<td>Open space</td>
</tr>
</tbody>
</table>

Source: UltraSystems Environmental, Inc.

<table>
<thead>
<tr>
<th>Table 5.8-2</th>
<th>Project Site General Plan and Zoning Code Land Use Designations</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Plan</td>
<td>Angeles National Forest (O-NF)</td>
</tr>
<tr>
<td>Zoning Code</td>
<td>W (Watershed)</td>
</tr>
</tbody>
</table>

Source: Antelope Valley Areawide General Plan, December 4, 1986

The proposed project site is governed by the Antelope Valley Areawide General Plan (December 4, 1986), which is a component of the Los Angeles County General Plan (November 25, 1980). It is a long-range guide for land use and development throughout the County; it identifies goals, policies, and standards to guide the use of land. The Antelope Valley Areawide General Plan states:

“Commercial uses to support user groups within the Forest may be permitted as well as other uses allowed pursuant to the Forest Service’s Land and Resources Management Plan. In all cases development proposals will be subject to applicable
Rural Community and Special Management Area performance standards and criteria.\textsuperscript{64}

“All proposed private and public development projects within the National Forests will be reviewed by the Regional Planning Commission and the U.S. Forest Service for compliance with applicable land use and resource management plans.”\textsuperscript{65}

Wireless telecommunication facilities are neither specifically allowed nor prohibited within O-NF areas. The proposed project will need to be reviewed by the U.S. Forest Service before being approved.

The \textit{Los Angeles County Code of Ordinances} implements the goals, policies, and standards set forth in the county’s General Plan. Title 22 of the code specifies planning and zoning standards.

Allowed uses in Zone W include microwave stations\textsuperscript{66} as well as accessory buildings and structures required for equipment or uses lawfully permitted on the premises.\textsuperscript{67}

5.8.3 \textbf{Special Area/Agency Consideration}

\textbf{U.S. Forest Service (USFS)}

The proposed project site is located within the Angeles National Forest (ANF) and will require a Use Permit form U.S. Forest Service (USFS). The USFS permitting process requires the City’s Department of Water and Power (DWP) to initiate a pre-application meeting with the local office to discuss the proposal, identify potential land use concerns, and outline application procedures, probable timeframes, fees, bonding requirements, additional coordination with other agencies, environmental reports, and field reviews. The DWP has completed and submitted the form SF-299 Application for Transportation and Utility Systems and Facilities on Federal Lands. The USFS will develop mitigation measures that will be required and implemented for any projects developed within the forest. These measures will be implemented as the BOE project improvements are constructed.

The proposed project must also adhere to the conditions set forth in the \textit{Mount Lukens Communication Site Management Plan} authored by the USFS.

The ANF, comprised of approximately 662,983 acres, is located within Los Angeles, San Bernardino and Ventura Counties. The U.S. Department of Agriculture (USDA)’s \textit{Angeles Forest Land Management Plan} (Forest Plan) describes the strategic direction at the program level for managing the land and its resources. The Forest Plan consists of three parts: 1) vision for southern California national forests; 2) strategy specific to the ANF; and 3) design criteria.

The ANF is classified into land use zones, with allowances of specific activities. Communication sites are allowed in designated areas including: the developed areas interface zone; back country zone; and back country motorized use restricted zones. Communication sites are also allowed by exception in the back country non-motorized zone, critical biological zone, and experimental forest zone. Communication sites are

\textsuperscript{64} Antelope Valley Areawide General Plan, December 4, 1986, Page VI-10.

\textsuperscript{65} Ibid.

\textsuperscript{66} Los Angeles County Code of Ordinances, Section 22.40.250, B1.

\textsuperscript{67} Los Angeles County Code of Ordinances, Section 22.40.260.
not suitable (i.e., generally not allowed) in the wilderness zone. The Forest Zone Designation for Mount Lukens is BCMUR: Back Country Motorized Use Restricted, meaning communication sites are allowed at designated areas, and roads are allowed with approved use.

**Santa Monica Mountains Conservancy**

Mount Lukens is located within Santa Monica Mountains Conservancy (SMMC) boundaries, just north of Deukmejian Wilderness Park and near the Rim of the Valley Trail. The City of Los Angeles will need to consult with the Santa Monica Mountains Conservancy to ensure that the proposed project complies with the Santa Monica Mountains Comprehensive Plan, Rim of the Valley Trail Corridor Master Plan, and any other applicable regulations.

**Santa Monica Mountains Comprehensive Plan**

The goal of the Comprehensive Plan is to accommodate land uses that will least damage the natural and manmade environment, given the constraints the land itself imposes. This principle will be set aside only if adhering to it will mean that the region will lose benefits of overriding importance.

The objectives of the Comprehensive Plan are to:**68**

1. Emphasize the value of open space, conservation, and recreation compatible with the resources of the Santa Monica Mountains.
2. Protect the Santa Monica Mountains from further despoliation by establishing and implementing management programs to protect and preserve the scenic, natural, historic, cultural, and scientific resources.
3. Provide for public parks and facilities in the Santa Monica Mountains that offer a variety of recreational opportunities accessible to all income groups.
4. Provide a pattern of land use which balances conservation and development, prevents urban sprawl, retains a maximum amount of open space avoids natural hazards, and allows the efficient and economic delivery of public services.
5. Give priority to natural resource protection when balancing development and conservation goals.
6. Improve air and water quality and prevent noise pollution.
7. Support and encourage private open space, conservation, and recreation as a supplement to public efforts.
8. Develop innovative public transportation alternatives within the framework of existing roadways for access to the Santa Monica Mountains in ways that will protect the environment, maintain air quality, efficiently deliver public services, and assure maximum access to the recreation areas for all the public.

The following are policies that apply to the Mount Lukens project:

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Policy 1: Resource Protection

“Development should be restricted in areas most suited for recreation or in areas needing special protection to retain and protect valuable and unique environmental resources.”\(^{69}\)

The proposed Mount Lukens facility will not interfere with any special ecological qualities of the area, and any special design regulations proposed by the SMMC will be followed to the best extent feasible.

Policy 14: Protection of Landforms

“Natural landforms should be protected from excessive grading.”\(^{70}\)

The proposed Mount Lukens facility will involve minimal grading of already disturbed soil to accommodate the tower foundation. No sloped areas or natural landforms will be graded.

Policy 17: Protection for Special Plant Communities

“Development should respect the unique characteristics of the basic types of habitat in the Santa Monica Mountains and should not significantly and unnecessarily alter the surrounding vegetation.”\(^{71}\)

The proposed Mount Lukens facility will be constructed within a previously developed site and will not alter the surrounding vegetation or habitat.

Policy 36: Scenic Corridor Protection

Although the proposed Mount Lukens facility will not be located within or near a scenic corridor, parkway, highway or byway, the applicant will coordinate with the SMMC on the following issues:

A: Buildings: location, height, bulk, setbacks, colors, and materials;

C: Grading: maximum amount and slope angle, erosion control, seeding and planting of exposed surface, and prohibition of excessive or unnecessary grading;

D: Landscaping: encouraging use of native plants, maintenance of landscaping, and use of landscaping for screening;

F: Outdoor storage: screening of storage from public view, prohibition of exposed storage, and time limit for temporary storage.\(^{72}\)

Rim of the Valley Trail Corridor Master Plan

The proposed Mount Lukens facility is located approximately 500 feet from the Rim of the Valley Trail. The Rim of the Valley Trail is the major recreational element in the Corridor, which is a defined planning area circling the north, east and west edges of the San Fernando/La Crescenta Valleys. The Trail is the backbone of the Corridor's

\(^{70}\) Ibid. Page 27.
\(^{71}\) Ibid. Page 28.
\(^{72}\) Ibid. Page 44.
interlocking, connected system of public parks, trails and wildlife habitat preserves within the mountain areas.

- It completely encircles the San Fernando, La Crescenta, and Simi valleys and unifies the various parts of the Corridor recreational system
- It is a multiuse trail open for use by hikers, equestrians, and mountain bikers wherever possible
- It is a long distance trail, offering a variety of experiences and scenic views
- Special signage and standards distinguish it from other trails in the Corridor trail system
- Regular access and facilities support maximum use of the Rim Trail

The objectives for the Rim of the Valley Trail are:
1. To provide the major physical link among the ecologically and aesthetically important areas in the Corridor system
2. To provide opportunities for multi-use trail recreation in a naturalistic setting
3. To generate the interest, challenge the variety possible with a long distance trail

Criteria for determining the location of the Rim of the Valley Trail route were that it:
1. Should connect as many of the important parks and open space areas within the Corridor as possible
2. Must provide the opportunity to travel the complete distance around the valleys without interruption
3. Should be well buffered by natural open space
4. Should provide views of the valleys and natural surroundings

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74 Ibid. Page 13.
75 Ibid. Page 14.
5.9  INFRASTRUCTURE

This section discusses the affected environment related to the following infrastructure systems: electrical, solid waste, wastewater and transportation.

5.9.1  Study Area

The project area is served by the following public utilities and service providers:

- Southern California Edison (SCE);
- County of Los Angeles Department of Public Works (LADPW);
- Los Angeles County Sanitation Districts (LACSD)

5.9.2  Existing Utilities

SCE provides electrical service to the project sites. SCE is one of the nation's largest electric utilities, serving more than 14 million people in a 50,000 square-mile area of central, coastal and Southern California, excluding the City of Los Angeles and certain other cities. Based in Rosemead, California, the utility has been providing electric service in the region for more than 120 years. SCE's service territory includes more than 180 cities.76

Approximately 33 percent of the County's water supply comes from local sources, including surface water from mountain runoff, groundwater and recycled water. Water is imported into the County from three sources: the Colorado River, the Bay Delta in Northern California via the State Water Project, and the Owens Valley via the Los Angeles Aqueduct. The Los Angeles Aqueduct primarily serves the residents and businesses of the City of Los Angeles.77

5.9.3  Waste Disposal Services

Privately owned waste disposal service providers typically enter into service agreements with smaller municipalities that they are contracted to serve. They may also enter into agreements with regional agencies such as LACSD to provide waste services. These waste haulers are then responsible for pickup and disposal of waste into approved regional landfills. The LACSD function on a regional scale and consist of 23 independent special districts serving about 5.7 million people in Los Angeles County. The service area covers approximately 820 square miles and encompasses 78 cities and unincorporated territory within the county. The LACSD manages the collection of wastewater as well as solid waste. Approximately 1,400 miles of main trunk sewers and 11 wastewater treatment plants convey and treat about half the wastewater in Los Angeles County. The LACSD solid waste management sites similarly provide about one-third of the countywide solid waste management needs. The LACSD operate three sanitary landfills, four landfill energy recovery facilities, two recycle centers, three materials recovery-transfer facilities, and participate in the operation of two refuse-to-energy facilities.78

76 SCE, 2011.
77 County of Los Angeles, 2011.
78 LACSD, 2011.
5.9.4 Transportation

Los Angeles County has an extensive roadway network of interstate freeways, state highways, regional roadways, and local surface streets that provides access to every portion of the service area. This network of roadways serves as the major means of transportation throughout the County, providing both recreational and commercial users a reliable transportation network throughout the service area. Access to the interstate roadway network is essential, as interstate highways serve as regional evacuation routes during emergencies. The highway network spans the County in all directions and links critical infrastructure facilities such as the Ports of Los Angeles and Long Beach, and the Los Angeles International Airport to each other. The I-210 Freeway, south of the project site, provides regional access. Existing roadways provide local access to the project site. The nearest major arterial road is Sycamore Flats Motorway to the north. The nearest major cross streets are Rim of the Valley Trail and Haines Canyon Motorway. Direct access to the project site is provided by a private road extending from Rim of the Valley Trail. No additional roadway infrastructure is required to be constructed.
5.10 **SOCIOECONOMIC RESOURCES**

The analysis in this section focuses on the demographic profile of the study area and the presence of minority and low income populations.

5.10.1 **Study Area**

The socioeconomic study area is generally defined as the area within a one-mile radius around the project site. This is the extent of the area where the proposed project is most likely to result in a substantial change to socioeconomic conditions. This one-mile study area is used for all of the affected social and economic environmental topics discussed in this document, including environmental justice.

The one-mile study area for the site is located within Los Angeles County.

5.10.2 **Demographics and Population**

The project site is located on Mount Lukens within Los Angeles County. This site is located in an unpopulated remote area within the Angeles National Forest. Table 5.10-1, *SocioEconomic Profile* reflects that the total population within a one mile radius study area around this site is 1. The one person in the study area is Hispanic and is under the age of 20. Figure 5.10-1, *Environmental Justice Population within a 1 Mile Radius Study Area around JAG Site, Mount Lukens* illustrates the demographic distribution within a one mile radius of the project location. Figure 5.10-2, *Hispanic Ethnicity Populations within a 1 Mile Radius Study Area around JAG Site, Mount Lukens* illustrates the Hispanic population within the one-mile radius of the project location.
### Table 5.10-1
### Socioeconomic Profile

<table>
<thead>
<tr>
<th>Data by Area</th>
<th>1-Mile Radius</th>
<th>Los Angeles City</th>
<th>Los Angeles County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>1</td>
<td>3,891,823</td>
<td>10,019,309</td>
</tr>
<tr>
<td>Total Households</td>
<td>0</td>
<td>1,323,361</td>
<td>3,240,963</td>
</tr>
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</table>

#### Race and Ethnicity

<table>
<thead>
<tr>
<th>Race and Ethnicity</th>
<th>1-Mile Radius</th>
<th>Los Angeles City</th>
<th>Los Angeles County</th>
</tr>
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<tbody>
<tr>
<td>White</td>
<td>0</td>
<td>1,766,489</td>
<td>4,664,649</td>
</tr>
<tr>
<td>Black/African American</td>
<td>0</td>
<td>363,288</td>
<td>863,645</td>
</tr>
<tr>
<td>American Indian and Alaska Native</td>
<td>0</td>
<td>32,251</td>
<td>81,838</td>
</tr>
<tr>
<td>Asian</td>
<td>0</td>
<td>415,894</td>
<td>1,312,160</td>
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<tr>
<td>Native Hawaiian and Other Pac Islander</td>
<td>0</td>
<td>6,136</td>
<td>27,203</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>1</td>
<td>1,989,344</td>
<td>4,839,914</td>
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#### Age

<table>
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<th>Age</th>
<th>1-Mile Radius</th>
<th>Los Angeles City</th>
<th>Los Angeles County</th>
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<tbody>
<tr>
<td>Median Age</td>
<td>0</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Age 65 or over</td>
<td>0</td>
<td>411,549</td>
<td>1,088,846</td>
</tr>
<tr>
<td>Age 21-64</td>
<td>0</td>
<td>2,354,526</td>
<td>5,963,964</td>
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<tr>
<td>Age 0-20</td>
<td>1</td>
<td>1,125,748</td>
<td>2,966,499</td>
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#### Housing Tenure

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<tr>
<td>Owner-Occupied</td>
<td>0</td>
<td>508,749</td>
<td>1,558,246</td>
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<td>Renter-Occupied</td>
<td>0</td>
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#### Household Income

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<th>1-Mile Radius</th>
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<th>Los Angeles County</th>
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<tbody>
<tr>
<td>Median Income ($)</td>
<td>56,097</td>
<td>$45,150</td>
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<tr>
<td>Average Income ($)</td>
<td>109,883</td>
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#### Education

<table>
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<th>1-Mile Radius</th>
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<tbody>
<tr>
<td>High School Graduate or higher</td>
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<td>1,106,238</td>
<td>3,059,877</td>
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<tr>
<td>Bachelor's Degree or higher</td>
<td>0</td>
<td>747,639</td>
<td>1,858,264</td>
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#### Poverty Status

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<th>1-Mile Radius</th>
<th>Los Angeles City</th>
<th>Los Angeles County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Families below Poverty Level</td>
<td>0</td>
<td>132,322</td>
<td>277,888</td>
</tr>
<tr>
<td>Families with Children below Poverty Level</td>
<td>0</td>
<td>105,799</td>
<td>223,017</td>
</tr>
</tbody>
</table>

Source: Nielsen SiteReports 2011, UltraSystems Environmental, Inc., 2011
Figure 5.10-1

Environmental Justice Populations within a 1 Mile Radius Study Area around JAG Site, Mount Lukens
5.10.3 Income and Employment

As indicated in section 5.10.2, the median household income within the one-mile study area (about $56,000) is higher than the median household income (about $52,200) within Los Angeles County. There are no families below poverty level within the one-mile study area.

5.10.4 Environmental Justice Populations

Executive Order 12898 (“Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”), commonly known as the EJ Policy, requires federal agencies to achieve environmental justice by addressing disproportionately high adverse human health and environmental effects, including interrelated social and economic effects of their programs, policies and activities on minority and low-income populations in the United States. An adverse impact is found to have a disproportionately high and adverse impact on low-income or minority populations when (1) the adverse impact is predominately borne by a minority population and/or a low-income population, or (2) the adverse impact that would be suffered by the minority population and/or low-income population is more severe or of greater magnitude than
the adverse impact that would be suffered by the nonminority population and/or non-low-income population.

**Minority Population**

In accordance with the guidance for EJ provided under NEPA, minority population is defined as individuals who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black; Hispanic origin or Hispanic.

**Low Income Population**

Low Income Population is identified as population below annual statistical poverty thresholds. For the purpose of the analysis in this report, 2011 Nielsen SiteReports data for Families below Poverty Level was used to identify low income population.

The potential for environmental justice impacts is identified by the presence of a low-income population or minority population, defined as a population that met either or both of the following criteria:

1. The minority and/or low income population within the study area exceeds 50%; or
2. The percentage of minority and/or low income persons in the study area is meaningfully greater than the minority and/or low income population in Los Angeles County.

**Demographic Profile**

The minority and/or low income population is considered meaningfully greater if it is more than 10 percentage points greater than the county figures. As demonstrated in Table 5.10-1, the one-mile radius study area is an unpopulated remote area. Even though the one-mile radius of the study area contains an environmental justice population (Hispanic) of 100% of the total population, the percentage comes from the one person who lives in the study area and it is not a representation of a large population.

Therefore, this project site is at Mount Lukens can be categorized as an area with no effects to environmental justice populations because the population is not substantial enough to produce significant effects to large populations.
5.11 HUMAN HEALTH AND SAFETY

This section addresses health and safety issues associated with construction and operation of the proposed project. This includes (but is not limited to) existing hazardous waste sites, wildland fires, methane, and aviation hazards. The potential for construction workers and structures to be exposed to wildland fire hazards is discussed in 5.11.3 below.

5.11.1 Study Area

The study area consists of a one-mile radius around the project site.

5.11.2 Existing Hazardous Waste Sites

A search of known hazardous materials sites was conducted using the GeoTracker and EPA Cleanups in My Community databases. The State Water Resources Control Board (SWRCB) GeoTracker is a data management system used by SWRCB to manage information about permitted facilities such as operating Underground Storage Tanks (USTs) and land disposal sites. The SWRCB Geotracker program was used to identify Leaking Underground Tank (LUST) Cleanup Sites, other cleanup sites such as those on the Cortese list, and Permitted Underground Storage Tank (PUST) facilities located within a one-mile radius of the project site. The property is not listed on the National Priority List, Cortese List, or CERCLA lists.

5.11.3 Wildland Fires

The property is within the Angeles National Forest and is located in rugged terrain with limited access and is found near combustible plant communities such as ceanothus, chamise, sumac, sages, and wildland grasses. These areas are considered to represent a very high fire severity zone.

The property is located within a high fire severity zone. This determination is based on an area’s accessibility, amount and type of vegetative cover, water availability, and topography. Construction in a high fire severity zone is subject to governmental codes, guidelines, and programs, which are aimed at reducing the hazard potential to acceptable levels. These measures include standards for brush clearance, access, irrigation, building materials and others.

5.11.4 Methane Hazards

The project site is not within a methane zone or methane buffer zone.

5.11.5 Aviation Hazards

The fundamental concern in achieving airport land use compatibility involves safety in the air and on the ground within the vicinity of the airport. The primary ground strategy is to limit the intensity of use by limiting residential and non-residential densities and activities that attract people in locations most susceptible to an off-airport aircraft accident. The primary strategy in the air is to prevent the intrusion of an airport’s airspace by the erection of structures that penetrate the imaginary surfaces that encircle an airport. The property is not located near an existing airport.

5.11.6 Other Health and Safety Considerations

There are no other health and safety considerations at this project site.
6.0 ENVIRONMENTAL CONSEQUENCES

This section provides a comprehensive analysis of the potential direct and indirect effects and discusses the level of significance of each resource area identified for each of the two alternatives (No Action and the Proposed Action).

6.1 NOISE

Noise impacts from the proposed project can occur during both construction and operation. The main sources of short-term construction noise include construction equipment and material delivery truck traffic. During operations, the chief source of noise exposure will be motor vehicles to visit the sites for maintenance.

6.1.1 Methodology

The noise impact analysis was conducted in three steps. In the first step, the nearest sensitive receivers were identified along with their distances to the site. The second step was to estimate short-term noise exposures during construction and long-term exposures during the operational phase for each nearby sensitive receiver. Finally, estimated exposures were compared with local noise standards to determine whether potential issues or impacts existed. Detailed information can be found in Appendix A.

In the short term, sensitive receivers surrounding the project site will be exposed to noise from construction equipment and from traffic carrying workers and materials back and forth to the work sites. These sources will disappear when construction is complete. The facility will have short-term noise exposures from motor vehicles occasionally visiting the site for maintenance activities.

Construction Noise Sources

Table 6.1-1 (Construction Equipment Noise Emission Levels) lists the types of equipment that will be used in at least one phase of construction. Reasonable assumptions were made for the types and number of pieces of construction equipment, as well as the percentages of time that each type of equipment will be in operation. Typical values for noise emissions (expressed as short-term noise exposures at 50 feet) for the types of equipment used for this project were obtained mainly from the Federal Highway Administration’s FHWA Highway Construction Noise Handbook. Other noise emissions data sources are referenced in Table 6.1-1, Construction Equipment Noise Emission Levels.

For each day of construction, a likely combination of types of equipment was assigned. Using the equipment-specific noise emissions values, percent utilization rates, distances to sensitive receivers, the total noise exposure at the sensitive receiver was calculated. Intervening noise barriers, elevation differences, and ground surface type (i.e. soft or hard) were taken into account. The basic equation for noise attenuation, assuming a hard ground surface (typical of urban sites), is:

---

79 The reference distance was 50 feet unless otherwise specified.

Table 6.1-1
Construction Equipment Noise Emission Levels

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Maximum Sound Level (dBA)a</th>
<th>Utilization Rate (%)</th>
<th>Ref.</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerial Man-Lift or Bucket Truck</td>
<td>75</td>
<td>20</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Backhoe</td>
<td>78</td>
<td>40</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Concrete Truck</td>
<td>79</td>
<td>40</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Crane, 25-Ton</td>
<td>81</td>
<td>16</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Drill Rig with Augers</td>
<td>79</td>
<td>20</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Dump Truck</td>
<td>76</td>
<td>40</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Excavator</td>
<td>81</td>
<td>40</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Flatbed Truck, 2-ton</td>
<td>74</td>
<td>40</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Forklift</td>
<td>65</td>
<td>50</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mechanical Truck</td>
<td>75</td>
<td>40</td>
<td>1</td>
<td>Assume same as pickup truck</td>
</tr>
<tr>
<td>Portable Generator</td>
<td>81</td>
<td>50</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Water Truck</td>
<td>84</td>
<td>50</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

a Noise level at 50 feet, unless otherwise specified.

Sources:
2 E-mail from Mark Rapp, Brooks Brothers Trailers, Winfield, Missouri to Brendan Keeler, UltraSystems Environmental, Inc., Irvine, California. March 18, 2011.

\[
N_D = N_{ref} - 20 \log_{10} \left( \frac{D}{D_{ref}} \right) + 10 \log_{10} \left( \frac{U}{100} \right)
\]

where

- \( N_D \) = Noise level at distance \( D \) from a particular piece of equipment
- \( N_{ref} \) = Noise level at reference distance
- \( D \) = Distance from source to receiver
- \( D_{ref} \) = Reference distance
- \( U \) = Utilization rate, as a percentage
- \( \log_{10} \) = Logarithm to base 10

For a soft ground surface, the basic equation for noise attenuation is:

\[
N_D = N_{ref} - 25 \log_{10} \left( \frac{D}{D_{ref}} \right) + 10 \log_{10} \left( \frac{U}{100} \right)
\]

For \( n \) pieces of equipment the total noise exposure at a particular point is:

\[
L_{eq} = 10 \log_{10} \left( 10^{L_1/10} + 10^{L_2/10} + 10^{L_3/10} + \ldots + 10^{L_n/10} \right)
\]

Microsoft Excel™ worksheets were used to calculate one-hour noise exposures (\( L_{eq} \)) at the nearest sensitive receivers. Given the noise thresholds that were discussed in Section 3.3.4 of the Technical Study, construction at the site was determined to have a potential issue or significant impact if the \( L_{eq} \) is greater than 60 dBA during the daytime.
Table 6.1-2, *Noise Exposure from Construction Activities*, shows the noise exposures from construction activities.

<table>
<thead>
<tr>
<th>Receiver</th>
<th>Distance To Site (feet)</th>
<th>$L_{eq}$ (dBA)</th>
<th>Potential Issue or Potentially Significant Impact?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence</td>
<td>8,100</td>
<td>40.1</td>
<td>No</td>
</tr>
</tbody>
</table>

**Operational Noise Sources**

The facility will have short-term noise exposures from pick-up trucks occasionally visiting the site for maintenance activities. It is assumed that the maintenance of the facility will require at most two standard pick-up trucks traveling to the site. Because of the short-term nature of driving a pick-up truck on site, no further analysis was done.

### 6.1.2 Impact Analysis

#### No Action Alternative

Under the No Action Alternative, no construction activity will occur and there will be no new maintenance activities. Noise impacts will not occur.

#### Proposed Action Alternative

As described in Section 6.1.1, both construction and operational noise impacts have been deemed not a potential issue. Therefore, mitigation measures will not be necessary.
6.2 AIR QUALITY

Air quality impacts from the proposed project can occur during both construction and operation. Construction emissions may include gases and particulate matter in exhaust from construction equipment engines, generation of dust during grading and other land disturbance, and mobile source emissions from construction worker commuting and truck traffic. During operations, the chief source of air pollutant emissions will be from motor vehicles visiting the sites for maintenance.

6.2.1 Methodology

The South Coast Air Quality Management District (SCAQMD) emission thresholds under CEQA were used to determine the significance of emissions from project construction and operation.

Construction Emissions

Based on the project description and communication with the architect, UltraSystems developed a list of likely types and numbers of pieces of construction equipment, as well as estimates of hours per day and total days of use. UltraSystems used this information to develop a Microsoft Project™ schedule. The scheduling results were used to formulate inputs to CalEEMod, a widely used emissions estimation model. CalEEMod takes into account changes in federal and state offroad equipment emission limits over future years to produce daily construction criteria pollutant emissions. Table 6.2-1, Construction Equipment shows a list of construction equipment, hours per day, and total days of use. Detailed information can be found in Appendix B.

Table 6.2-2, Construction Emissions at Mount Lukens Site summarizes the results of the construction emissions calculations at the Mount Lukens site, while Table 6.2-3, Maximum Cumulative Daily Construction Emissions, summarizes the cumulative results of the construction emissions calculations at all five JAG sites.

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Number In Use</th>
<th>Hours per Day Usage</th>
<th>Number of Days Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerial Man-Lift or Bucket Truck</td>
<td>1</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Backhoe</td>
<td>1</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Concrete Truck</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Crane, 25-Ton</td>
<td>1</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Drill Rig with Augers</td>
<td>1</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Dump Truck</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Flatbed Truck, 2-ton</td>
<td>1</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Forklift</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Mechanical Truck (Pick-up Truck)</td>
<td>2</td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>Portable Generator</td>
<td>1</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Rubber Tired Dozer</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Water Truck</td>
<td>1</td>
<td>2</td>
<td>18</td>
</tr>
</tbody>
</table>
Table 6.2-2
Construction Emissions at Mount Lukens Site

<table>
<thead>
<tr>
<th></th>
<th>VOC</th>
<th>NO₂</th>
<th>CO</th>
<th>PM₁₀</th>
<th>PM₂.₅</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Pounds per Day</td>
<td>2.53</td>
<td>20.37</td>
<td>9.23</td>
<td>1.05</td>
<td>0.92</td>
</tr>
<tr>
<td>SCAQMD Threshold (pounds)</td>
<td>75</td>
<td>100</td>
<td>550</td>
<td>150</td>
<td>55</td>
</tr>
<tr>
<td>Potential Issue or Significant Impact?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Table 6.2-3
Maximum Cumulative Daily Construction Emissions

<table>
<thead>
<tr>
<th></th>
<th>VOC</th>
<th>NO₂</th>
<th>CO</th>
<th>PM₁₀</th>
<th>PM₂.₅</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions in late 2012 (pounds)</td>
<td>14</td>
<td>108</td>
<td>52</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>SCAQMD Threshold (pounds)</td>
<td>75</td>
<td>100</td>
<td>550</td>
<td>150</td>
<td>55</td>
</tr>
<tr>
<td>Potential Issue or Significant Impact?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Operational Criteria Pollutant Emissions

CalEEMod was used to estimate emissions from motor vehicle traffic for site maintenance. The motor vehicles were assumed to make at most two visits per month, and two vehicle trips on each visit. Table 6.2-4, Operational Emissions, summarizes the results from operational emissions calculations.
Greenhouse Gas Emissions

CalEEMod was used to estimate carbon dioxide (CO$_2$) emissions from motor vehicle traffic for site maintenance. The total CO$_2$ for all JAG sites is estimated to be 5 tonnes per year. Emissions of other GHG from motor vehicles are at least an order of magnitude lower and were not considered. As discussed in Section 5.2.1.3, the CEQ’s proposed threshold for detailed evaluation of GHG issues is 25,000 tonnes per year of CO$_2$ equivalent. Because the operation emissions from the project will be below this criterion, GHG were not considered to be an issue for any individual site or all sites combined.

General Conformity Analysis

Pursuant to the General Conformity Rule (40 CFR Part 93, §93.158), a federal agency must perform a General Conformity Analysis for any federal action. The federal agency must then make a General Conformity Determination for any federal action in non-attainment or maintenance areas where the total of direct and indirect emissions of the applicable criteria pollutants or their precursors exceeds threshold levels. The JAG project is considered a federal action since it requires federal approval and will receive federal funding. It is therefore subject to a General Conformity Analysis.

The Proposed Action is within the SCAB. As discussed in Section 5, the SCAB is currently designated as an extreme non-attainment area for the 8-hour NAAQS for O$_3$; a serious non-attainment area for PM$_{10}$; and a non-attainment area for PM$_{2.5}$.

The emission thresholds that trigger a General Conformity Determination for non-attainment and maintenance pollutants are specifically identified in the General Conformity Rule. The applicable thresholds for the Proposed Action in the project area are identified in **Table 6.2-5, Applicability Thresholds for General Conformity Analysis**.

For the JAG project, the maximum annual emissions will occur during 2012 during construction. **Table 6.2-6, Maximum Annual Emissions, All Sites Combined**, shows the annual emissions in the air basin for all sites combined. As seen in the table, project-wide maximum annual emissions are below the thresholds for all the nonattainment pollutants. Therefore further analysis was not necessary.
Table 6.2-5
Applicability Thresholds for General Conformity Analysis

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emissions Threshold (tons per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCAB</td>
<td></td>
</tr>
<tr>
<td>VOC</td>
<td>10</td>
</tr>
<tr>
<td>NO$_x$</td>
<td>10</td>
</tr>
<tr>
<td>CO</td>
<td>100</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>70</td>
</tr>
<tr>
<td>PM$_{2.5}$</td>
<td>100</td>
</tr>
</tbody>
</table>


Table 6.2-6
Maximum Annual Emissions, All Sites Combined

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>South Coast Air Basin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emissions (Tons/Year)</td>
</tr>
<tr>
<td>VOC</td>
<td>0.06</td>
</tr>
<tr>
<td>NO$_x$</td>
<td>0.41</td>
</tr>
<tr>
<td>CO</td>
<td>0.25</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>0.04</td>
</tr>
<tr>
<td>PM$_{2.5}$</td>
<td>0.02</td>
</tr>
</tbody>
</table>

6.2.2 Impact Analysis

No Action Alternative

Under the No Action Alternative, no construction activity will occur and there will be no new maintenance activities at the sites. Air pollution impacts will not occur.

Proposed Action Alternative

Daily construction emissions associated with the Mount Lukens site are within the SCAQMD’s daily thresholds; however, according to the South Coast Air Quality Management District, construction at multiple sites must be considered as a single project for impact evaluation purposes.\textsuperscript{81} According to Table 6.2-3, there is a potential air quality issue associated with the simultaneous construction of the 5 sites in the SCAB; the regional NO$_x$ emissions from the project have the potential to cause an exceedance of the NAAQS for ozone or for NO$_2$. (The Basin is in severe nonattainment for ozone.) The mitigation measures presented in Section 6.2.3 will reduce the cumulative criteria pollutant impacts due to construction.

\textsuperscript{81} Personal communication from Ian MacMillan, South Coast Air Quality Management District, Diamond Bar, California to Michael Rogozen, UltraSystems Environmental Incorporated, Irvine, California. April 12, 2011.
As discussed in Section 6.2.1, both the operational criteria emissions and GHG emissions will result in no potential issues; therefore no mitigation measures are required for project operation.

6.2.3 Mitigation of Construction Air Quality Impacts

Construction Mitigation Measures

The following mitigation measures will reduce the air pollution impacts of this project.

A-1 When scheduling construction activities, the construction contractor shall project the emissions from each active construction site for each day; if the total emissions of any pollutant would exceed the SCAQMD’s daily threshold for that pollutant, the schedule shall be revised to ensure that the exceedance does not occur.

A-2 Extend the project schedule to span more than three months so that fewer pieces of construction equipment will be needed to run concurrently on days of maximum emissions.
6.3 GEOLOGY AND SOILS

The geologic hazards associated (i.e. geology/soils, faulting and seismicity, ground rupture and deformation, liquefaction, etc.) with the project site were reviewed and summarized using the methodology described below. Detailed information can be found in Appendix C.

6.3.1 Methodology

In order to assess the geologic setting of the site, the geologic maps produced by the State of California, United States Geological Survey (USGS), and/or the Dibblee Geological Foundation were reviewed. The latitude and longitude coordinates for each site were used to locate the site in Google Earth and to identify the USGS 7.5-minute topographic map coverage for the site. The site was located on its respective geologic map, and the surficial geologic units, as shown and described on these maps, were identified and recorded.

In order to assess the geologic hazards for the site, site location with respect to the California Geological Society (CGS) Alquist-Priolo Earthquake Fault Zone Maps (AP Zone Maps), Landslide Inventory Maps, and Seismic Hazard Maps with accompanying Seismic Hazard Reports were reviewed. The site was located on these maps and the associated geologic seismic hazard was identified and recorded. The geologic seismic hazards identified by these maps and reports include: fault zones, landslide areas, and liquefaction zones.

The California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program produced the Los Angeles Important Farmland Map that identifies land use types for most of the non-urbanized areas of Los Angeles County. A large part of the urbanized portion of the Los Angeles Basin has not been surveyed since this land is no longer used for farming. The land use types identified on the Farmland Map was recorded for the site. Aerial photographs were also reviewed to identify the general setting of the site location.

The findings from these maps and reports, are included in the Geotechnical Investigation Report for LA-RICS Mount Lukens Communications Site, September 2011.

Site Design Recommendations

The following recommendations are based on the Geotechnical Investigation Report for LA-RICS Mount Lukens Communications Site, City of Los Angeles Department of Public Works, Bureau of Engineering, Geotechnical Engineering Group.

6.3.2 (Site Clearing)

- Prior to construction, all organic and inorganic materials and debris shall be removed from the construction area. Debris shall be removed from the construction area and disposed of outside the site. All existing soil at the site may be re-used for fill or backfill provided it is free of organic material, highly expansive clay, deleterious debris, and bedrock fragments, brick and concrete rubble larger than three inches in diameter. Such unsuitable material shall be removed from the site and disposed of accordingly.

- Any existing structural elements within these areas, including any foundation elements, shall be demolished and removed from the site. Any utilities, whether active or inactive, shall be identified and removed from the site or relocated per project plans and specifications. Any cavities resulting from removal of any
existing foundations or utility lines should be properly backfilled and compacted in accordance with the following sections.82

6.3.3 (Structure Foundations)

Recommendations are provided in Section 7.3.1 of the Geotechnical Investigation Report for support of the proposed communications tower on cast-in-drilled-hole (CIDH) piles. Alternatively it may be possible to support the proposed tower on shallow pad foundations with rock anchors or mini-piles. If rock anchors or mini-piles are pursued, load testing will be required during construction to confirm the capacities of each of the anchors.83

6.3.4 (Construction/Pile Installation)

Construction/Site Preparation as well as all aspects of CIDH pile installation shall comply with the acceptance criteria for cast-in-drilled-hole pile installation presented in Section 7.4.2 of the Geotechnical Investigation Report, dated September 29, 2011.

6.3.5 Impact Analysis

No Action Alternative

Under the No Action Alternative no project improvements would be constructed and there would be no impacts on geology and soils resources in the project area. Therefore, there would be no facilities constructed that would be subject to future seismic events, liquefaction, soil subsidence or landslides.

Proposed Action Alternative

Geology/Soils - The project site is currently developed with several structures. The construction of the site includes the addition of a tower that will expose project site soils during short-term project construction activities. However, the exposure of soils during construction will be short-term and subject to the National Pollution Discharge Elimination Systems (NPDES) requirements. NPDES requirements include “Prior to construction initiation, activities shall be broken into phases. Construction scheduling should facilitate installation of erosion and sediment control measures prior to construction start, detail time limits for soil stabilization after grading occurs, and schedule BMP maintenance.” Once constructed, the project site will be covered by impervious materials. With incorporation of these standards for design and construction, impacts from soil erosion or the loss of topsoil will be reduced to less-than-significant levels.

Faulting and Seismicity - While there are several known faults in the County of Los Angeles, none are known to occur in the Project area.84 According to the California Geological Survey (CGS), the site is not located within an Alquist-Priolo Earthquake Fault Zone and no known faults cross or are near the site. To reduce the effects of ground movement, seismic design will adhere to the most recent edition of the Uniform Building Code and the policies and objectives presented in the Seismic Element of the


83 Ibid.

County of Los Angeles’ General Plan and the Public Safety Element of the County of Los Angeles’ General Plan. With incorporation of these standards for design and construction, impacts from seismic related ground movement will be reduced to less-than-significant levels.

**Ground Rupture and Deformation** - To reduce the effects of ground rupture and other seismic related ground failure, seismic design will adhere to the most recent edition of the Uniform Building Code and the policies and objectives presented in the Seismic Element of the County of Los Angeles’ General Plan and the Public Safety Element of the County of Los Angeles’ General Plan. With incorporation of these standards for design and construction, impacts from seismic related ground failure will be reduced to less-than-significant levels.

**Liquefaction** - The project site is not located within an area that has potential for liquefaction. Furthermore, liquefaction is not considered a hazard at the site because it is underlain by shallow bedrock. Therefore no impact will result from the proposed project.

**Earthquake Landslides** - According to the State of California Seismic Hazard Zones Map, the site is located within an area that has the potential for earthquake-induced landslide activity. However, although this site lies in the general earthquake region, this proposed project will result in less-than-significant impacts.

**Groundwater** - No seeps or springs were observed at the site, therefore there is no impact.

**Prime Farmlands** - This project site is not used for farming, therefore there is no impact.

### 6.3.5 Mitigation Measures

Based on the findings contained within the geotechnical report, no mitigation measures are required.
6.4 WATER RESOURCES

6.4.1 Methodology

Surface Water Investigation

The objective of the surface water investigation was to identify surface water bodies that could be affected by construction and/or operation of the Mount Lukens JAG site. Possible impacts could include:

- Contamination of surface waters by polluted runoff from the site, during construction or in the operational phase.
- Contamination of surface waters by dewatering of sites where excavation encounters groundwater.

Surface water resources near the Mount Lukens JAG site were identified through a search of the U.S. Geological Survey’s National Hydrography Dataset (NHD) website. First, the NHD dataset was imported into a Geographic Information System (GIS) analytical software platform (ArcGIS 10) and compared with a point representation of the proposed project site. The analysis was limited to (a) the NHDFlowline dataset, which represents flowing waters, such as streams, rivers, canals, ditches, coastline, pipes, and connectors; (b) the NHDWaterbody dataset, which represents standing water bodies, such as lakes, reservoirs, and water storage areas; and (c) a U.S. Rivers and Streams dataset from ESRI, which is largely based on the USGS Hydrography Dataset. Using an analytical selection tool in GIS, UltraSystems searched for all naturally occurring water bodies that lie within 500 feet of the proposed project site and exported this subset dataset as a separate layer. Lastly, UltraSystems produced reports containing descriptive information about these water features, such as names, types, reach codes, and their distances from the proposed project site.

Groundwater Investigation

The objective of the groundwater investigation was to identify groundwater resources that could be affected by construction and/or operation of the Mount Lukens JAG site. Possible impacts could include:

- Contamination of alluvial aquifers by infiltration of polluted runoff from the site, during construction or in the operational phase.
- Contamination of alluvial aquifers by contact with construction pollutants (e.g., oil and grease from construction equipment) where excavation encounters groundwater.

In determining whether the site had potential groundwater issues, it was important to determine, whether the water table was near the ground surface. For the purpose of this investigation, “near” was defined as within 20 feet. An attempt was made to determine the depth to groundwater at the site by calculating the difference between ground surface and historical water table elevations. Efforts to obtain GIS well data near the site.

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85 Internet URL: http://nhd.usgs.gov/

were hampered by the following: (a) suitable data were available only for basins in the Coastal Plain, and (b) the day-to-day, and year-to-year variability of the data for individual wells would have required extensive calculations.

The findings of the geology and soils investigation for this project were used to obtain groundwater elevation data that were useful to the purpose of this EA.\textsuperscript{87} The geology and soils teams used exploratory boring data to determine that no groundwater exists at this project site.

The site was considered to have no groundwater issues during construction if:

- Construction will not include excavation or
- Construction will include excavation and groundwater is more than 20 feet below ground surface or
- Construction will include excavation and the site is at a high altitude (3,500 feet or higher), where groundwater resources are generally absent.

The site was considered to have no groundwater issues during operations if:

- Groundwater is more than 20 feet below ground surface or
- The site is at a high altitude, where groundwater resources are generally absent.

**Flood Plains**

The objective of the flood plain evaluation was to determine whether the project site was located in a 100 year floodplain (Flood Zone A) as defined by the Federal Emergency Management Agency (FEMA) Flood Hazard Insurance Maps (FIRM) for Los Angeles County.\textsuperscript{88} The site was considered to have no floodplain related issues during construction and operation if it is not located in a FEMA 100 year flood hazard zone.

### 6.4.2 Impact Analysis

**No Action Alternative**

Under the No Action Alternative, no construction activity will occur and there will be no new maintenance activities at the proposed site. Water resources and water quality impacts will not occur.

**Proposed Action Alternative**

**Potential Surface Water Impacts**

Construction activities have the potential to degrade surface water quality as a result of leaks or spills of commonly used lubricants, coolant, and similar fluids found in construction equipment and around the construction site. Ground disturbance may also cause soil erosion and sedimentation in local waterways.

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\textsuperscript{88} In Flood Zone A, a flood has a 1% chance of occurring in any given year.
The GIS analysis identified the closest surface feature to be an intermittent stream about 1,490 feet from the project site; however, no surface water features, including jurisdictional waterways, are located within 500 feet of the Mount Lukens JAG site. Therefore, the project was determined to have no surface water impacts.

**Potential Groundwater Impacts**

During construction, especially during the excavation phase, contamination of alluvial aquifers may occur when construction equipment pollutants such as oil and grease contact the groundwater.

The proposed construction includes excavation for the new tower footings, but no groundwater within the project site was discovered in the exploratory boring reports, so the site can be expected not to have groundwater issues. Additionally, the Mount Lukens JAG site is approximately 5,060 feet from the nearest groundwater basin and recharge area (San Fernando Valley Groundwater Basin). Because the distance from the site to the nearest recharge area is so large, it is unlikely that an onsite spill or runoff from the project will contaminate the groundwater basin. Thus, the project can be expected to have no groundwater issues during construction, or operations.

**Flood Plain Issues**

Placement of structures within the floodplain has the potential to impact the ecological values of the flood system including the functions as water quality filtration, water holding capacity, and natural habitat. A search of FEMA records found that the Mount Lukens JAG Site is 1,890 feet from the nearest 100-year flood hazard zones (FEMA Zone A). Thus, the project site is considered to have no flood plain issues.

**Mitigation Measures**

No mitigation measures will be required, as the project site will not result in impacts to water quality.
6.5 BIOLOGICAL RESOURCES

For purposes of this EA, the No Action Alternative (No Project), and the Proposed Action Alternative (Preferred Project) were analyzed for potential impacts to biological resources including wildlife, vegetation, federal Threatened and Endangered Species (listed-species), USFS Sensitive species, and wetland habitat.

The analysis, discussed in detail in the attached Biological Assessment, finds that through implementation of Best Management Practices and appropriate Mitigation Measures the Preferred Project should not have significant impacts to biological resources, including federally-listed species. As such, further consultation with the USFWS under Section 7 of the Endangered Species Act is not required. While the No Action Alternative would also not have a significant impact on biological resources either, it would also not address the goals of the preferred project.

6.5.1 Methodology

General Approach

In order to predict impacts of the proposed project to biological resources, particularly federally listed-species, we assessed habitat suitability on site using a combination of literature reviews and a field reconnaissance-level survey. For the purposes of this EA (a federal document required under NEPA), listed-species include federally-listed (T) threatened, (E) endangered, (P) proposed, or (C) candidate species (TEPC) species and USFS Sensitive Species (FSS). Proximity of the project site to protected USFWS critical habitat was also evaluated.

Potential occurrence of and impacts to California State-listed (T) threatened, (E) endangered, (P) proposed, or (C) candidate species (TEPC species), CDFG Fully-Protected Species (DFG-FP), CDFG’s Species of Special Concern (DFG-SSC), and plant species recognized as rare or endangered by the California Native Plant Society (rank 1A, 1B, and 2) were also analyzed under CEQA for a IS-MND document. Collectively, these species are referred to as special-status species. The full impact study for biological resources can found in the attached BA.

Bio-geographic data were gathered from the CDFG’s Natural Diversity Database (CNDDB) and the USFWS Environmental Conservation Online System (ECOS) to generate species lists and distribution maps for all special-status species recorded within 5 miles of the proposed project site (i.e. the project vicinity). Aerial maps of the site were also evaluated to help identify ecologically important features like water bodies and rocky outcrops.

Using the generated lists and maps, a reconnaissance-level field survey was conducted to determine the occurrence potential for each species within the project study area, defined as a circular buffer area extending 500 feet around the expected project footprint (Figure 6.5-1). The project footprint includes land surfaces that are temporarily and/or permanently impacted by project activities such as grading, foundational construction,

89 The CNPS Ranking System. Available at <http://www.cnps.org/cnps/rareplants/ranking.php>
92 Google, Inc., 2011. Google Earth (Version 6.0.2) [Software]. Available at <www.google.com>
lay-down of construction supplies and equipment, as well as access roads used during project construction and maintenance. Surveys included the recording of all native plant and wildlife species observed in the project study area. We also documented the presence and location of any heritage trees on site, which are afforded special protection in the City of Los Angeles and may require permits to trim or remove. For example, the removal or encroachment of any tree of the oak genus, 25 inches or greater in circumference, is prohibited by Ordinance 22.56.2060.

The information gathered from the reconnaissance-level survey was then analyzed in the context of the proposed site development to determine whether the proposed project poses significant negative impacts to wildlife, vegetation, listed-species, and wetland habitat. For a detailed description of reconnaissance-level survey methods and analysis, please see the Methods section of the attached Biological Assessment (Appendix D). A detailed project description can also be found in Chapter 4 of this EA.
Figure 6.5-1
Map of Project Study Area
Mount Lukens Los Angeles, California

Source: Bing Maps, 2010

UltraSystems
6.5.2 Impact Analysis

The following section addresses the expected impacts of the proposed project on biological resources.

**No Action Alternative**

The No Action Alternative would not introduce any temporary or permanent changes to the existing environment at the proposed project site. Therefore, impacts of the No Action Alternative would be insignificant to biological resources, including wildlife, vegetation, threatened and endangered species, and wetlands.

**Proposed Action Alternative**

**Wildlife**

The Proposed Action is not expected to have a significant impact to non-listed wildlife species. If best management practices (BMPs) outlined in Section 6.5.4 are implemented during construction and operation, the project will not disturb or remove native vegetation, and therefore no significant loss of wildlife habitat will occur. A biological monitor shall be present during project construction to ensure that no vegetation is disrupted and to help avoid or minimize direct impacts to wildlife.

The site has potential habitat for nesting birds because of the presence of native vegetation within about 50 feet of the existing telecommunication center (see photographs in attached BA). Performing construction activities outside of the bird nesting season (February 15th through August 30th), however, will likely reduce potential impacts to bird survival and reproduction to an insignificant level. Nesting bird surveys should also be conducted immediately prior to the start of construction. If breeding and/or nesting activity is observed on site, work activities will be moderated according to BMP B-1.

There is moderate potential for the peregrine falcon (*Falco peregrinus anatum*), a federally delisted raptor species, to utilize the site as foraging habitat. Communication towers can pose collision hazards to birds, including peregrine falcons.\(^{93}\) The USFWS estimates that between 5 and 50 million birds are killed from collisions with communication towers each year in the United States.\(^{94}\) In order to comply with the USFS Mount Lukens Communication Site Management Plan, it will be necessary to follow BMP B-2, which limits the height of all newly constructed towers to 120 feet. Compliance with these guidelines and the USFWS guidance on communication tower construction and operation will minimize potential impacts to birds and other wildlife.

**Vegetation**

Two major vegetation types were identified during the field survey. The existing telecommunication site is immediately surrounded by landscaped and otherwise disturbed vegetation. *Arctostaphylos glauca* (Big berry manzanita chaparral) Shrubland Alliance (CNDDB 2011, CaCode 37.104.02) occurs outside of the landscaped area, but remains near the site, and makes up the majority of the vegetation cover within the study


area. However, the proposed project is not expected to require the disturbance of native vegetation. Although native chaparral vegetation exists within approximately 50 feet of the existing tower, a sufficiently large, cleared staging and parking area exists to accommodate a work and equipment lay down area. A biological monitor shall flag the boundaries of the construction area to avoid intrusion into native vegetation, and be present during project construction to ensure vegetation is not removed, trimmed, or disturbed (see Figure 6.5-1).

**Threatened, Endangered, and Forest Service Sensitive Species**

Two species, Plummer’s mariposa-lily (*Calochortus plummerae*) and coast horned lizard (*Phrynosoma blainvilli*), which are listed by the USFS as sensitive, have potential to occur in the project study area. While no individuals of these species were observed during the field survey, suitable chaparral habitat does exist adjacent to the existing facility, and their presence should be assumed. However, implementation of certain BMPs, including the establishment of work-free habitat protection zones, will reduce potential impacts to below a significant level for both of these species. For a more detailed discussion of state and local special-status species and their potential for occurrence, see the attached Biological Assessment.

**Agency Consultation**

The proposed project is located within the USFWS jurisdictional boundary of the Carlsbad FWS office (CFWO). Informal consultation was initiated via telephone with CFWO biologist Jonathan Snyder in October 2011 for advisory purposes. We provided a brief description of the location and scope of the project and indicated, based on our impact analysis, that the project would not pose significant impacts to biological resources, specifically federally protected species and habitats. Based on the information provided, Mr. Snyder supported our initial determination of no significant impacts, and agreed that formal and further informal consultations were not appropriate at this time. While a letter of concurrence would not be provided without a more thorough project review by the agency, we were informed that consultation is not required when the lead federal agency (in this case the Department of Justice) does not expect the Preferred Project to have a significant negative, adverse impact to federal threatened and endangered species. Such a review by USFWS would take place, however, during the formal review process. The proposed project is also located within the Angeles National Forest (ANF), a USFS jurisdictional area. Informal consultation with the USFS for telecommunication development at Mount Lukens was initiated in May of 2011. The Forest Service indicated that the project, as proposed, did not pose a significant threat to USFS protected resources and that further consultation would not be required with the assumption that its guidelines would be followed through project implementation.

**Wetlands**

Impacts of the Proposed Project to wetlands are not expected. No resources or features that qualify as a wetland including hydrophytic vegetation, wetland hydrology, and hydric soils are present in the project study area.

**Impact Summary**

The Preferred Project is not expected to generate significant impacts to biological resources. Although suitable habitat is present for the FSS Plummer’s mariposa lily (*Calochortus plummerae*) and coast horned lizard (*Phrynosoma blainvilli*) in native vegetation surrounding the project site, strict adherence to the BMPs discussed in
Section 6.5.4 will avoid and/or reduce impacts to these species to below a significant level.

6.5.3 Mitigation Measures

No mitigation measures are required for the proposed project. However, a number of Best Management Practices (BMPs) shall be implemented to avoid or prevent potential project-related impacts to biological resources from occurring.

6.5.4 Best Management Practices

B-1: Pre-Construction Survey for Nesting Birds The Migratory Bird Treaty Act (MBTA)\(^{95}\) protects the majority of migratory birds breeding in the U.S., regardless of their official listing status. The provisions of this act govern the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. The law applies to the removal of nests occupied by migratory birds during the breeding season. It is therefore a violation of the MBTA to directly kill or destroy an occupied nest of any bird species covered by the MBTA.

To avoid impacts on nesting migratory birds, clearing of vegetation and construction activities should occur outside of the peak bird nesting season from September 1st through February 14th. However, if construction must occur during the nesting season, the following measures should be implemented:

- Within three days of the scheduled start of construction activity, a pre-construction survey should be conducted by a qualified biologist to determine the presence or absence of active nests within, or adjacent to, the project site.
- If no breeding or nesting activities are detected within 500 feet of the proposed work and staging areas, construction activities may proceed.
- If bird breeding and/or nesting activity is confirmed, work activities within 250 feet (or 300 feet for raptors, 500 feet for fully protected species, or a linear distance appropriate for the species approved by the project biologist) of any active nest shall be delayed until the young birds have fledged and left the nest. A work area buffer zone around any active nests shall be demarcated, indicating where work may not occur. Project activities may resume in this area once the project biologist has determined that the nest(s) is no longer active.

If the Coastal California Gnatcatcher or any other federally protected bird species is detected within the project area during nesting surveys, additional consultation with the USFWS is required.

B-2: USFS Mount Lukens Communication Site Management Plan

The United States Forest Service has outlined a management plan for the placement of new towers on Mount Lukens, which is within USFS' jurisdiction. These measures are focused on discouraging use of the communications site by condors and raptors that typically inhabit mountain habitats. The following measures should be implemented:

- New towers should be self-supporting, should not exceed 120 feet in height, and should not exceed 5,175 feet above mean sea level.

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\(^{95}\) Migratory Bird Treaty Act (16 U.S.C. 703-711). This treaty with Canada, Mexico and Japan makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season.
• Towers that have a shiny or reflective surface should be painted with dark grey to green colors unless the FAA requires that red and white striping be painted. Towers with a dull surface will be left unpainted. Antenna masts shall be grey.

• Unless specifically required by the FAA, there should be no marker lights, beacons or strobes mounted on towers. Such lights required by the FAA should be white or red strobe lights and be of the minimum intensity, number and flash for the minimum duration.

• Place anti-perching devices on open horizontal surfaces such as tower tops, edges of roof tops and ridges, on the front edge of microwave dishes and on coverings or tracks of waveguides.

• Immediately remove trash from site.

• Secure all loose wires or netting and place wires in conduit when feasible.

• Cover all insulation or other soft materials.

• Cover spill retention, catchment basins or other open structures that may collect water.

• All radiating parabolic dish antennas must be equipped with radome covers.

• New radomes shall be grey or a non-reflective dark earth-tone color.

• Fences should be erected at a height that is not in directly line with any radiating beam and shall be designed to avoid the potential for accidental entrapment.

Other measures pertaining to the protection of vegetation and wildlife:

• Trimming, pruning, cutting or removal of vegetation required for construction shall need the approval of the Forest Service Authorized Officer.

• Wildlife species shall not be adversely disturbed, harassed or purposefully attracted to the site. Garbage shall be removed promptly.

• The use of exterior pesticides is only allowed after approval of the Forest Service.

• Ground disturbance and potential erosion shall be minimized.

• Run-off and drainage from buildings, parking areas, walkways and access should be efficiently handled.

• Disturbed areas should be restored and slopes should be stabilized

**B-3: USFWS Communication Tower Specific Avoidance Measures**

Negative, physical impacts to wildlife resulting from collisions with project infrastructure should be minimized by following USFWS guidelines as thoroughly as practicable, as long as they are consistent with project objectives:

• Erect towers no taller than 199 feet above ground level.

• Attach new equipment to existing structures or towers when possible (i.e., collocating).

• Use monopoles instead of guy-wire supported towers.

• Construct towers at existing ‘antenna farms.’
• Construct away from areas of high migratory bird traffic, wetlands, and other areas where bird diversity and density is high.

• Use white aviation warning lights rather than red colored lights.

• Use strobe aviation warning lights rather than steady-burning or pulsating lights.

• Use visual daytime markers in areas of high diurnal raptor or waterfowl movements.

• Security lighting for on-ground facilities should be minimized, point downwards or be down-shielded.

• Allow access to tower site for bird monitoring purposes.

• Towers and associated communication facilities should be sited, designed and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint."

**B-4: Establish Habitat Protection Zones**

• Construction activities should only take place after a qualified biologist has established habitat protection zones and/or approved the area for construction to begin.

• Habitat protection zones shall be marked using flagging of temporary fencing. Designated special-status habitat areas and non-approved work areas shall be conspicuously marked to indicate where construction activities shall and shall not be permitted to occur without approval from the lead agencies.

• A qualified biological monitor shall be present during project construction on a weekly basis or during any grubbing or grading to ensure non-approved work areas are not entered and that native vegetation is not removed, trimmed, or disturbed.

**B-5: Protect Native Vegetation**

To avoid impacts to native vegetation, do not disturb existing coastal sage scrub vegetation that borders the project site. As stated above, a qualified biological monitor shall be present during project construction on a weekly basis or during any grubbing or grading to ensure non-approved work areas are not entered and that native vegetation is not removed, trimmed, or disturbed. The following measures apply:

• Do not remove and/or grade plants or topsoil where stands of native vegetation occur

• Avoid project activities that unnecessary disturb or compact the soil surface. as these actions could increase erosion and sediment transport, and make future native plant establishment more difficult. A buffer of native vegetation shall be retained where feasible to reduce potential erosion originating at the project site

• Clearance of landscaped or non-native plants should be conducted under the supervision of a qualified biological monitor to ensure that direct and indirect impacts to wildlife, in particular birds, are avoided

• Utilize existing access roads, pads, and previously developed or disturbed areas as much as feasible in order to avoid impacts to sensitive vegetation

• Restoration of native habitat may be required for any unanticipated loss of native vegetation as deemed appropriate by the resource agencies
B-6: Limit the Spread of Invasive Plants

To minimize the spread and establishment of invasive plant species into the project area, all off-road heavy equipment used during project implementation will be free of noxious or exotic weeds and seeds before entering the project area. Vehicle washing guidelines will be implemented for all ground disturbing activities (Appendix A). Furthermore, any post-construction landscaping or revegetation shall not include the use of invasive, exotic plant species listed on the California Department of Food and Agriculture’s (CDFA) Noxious Weed List (CDFA, 2011) or in the California Invasive Plant Inventory (Cal-IPC 2006).

B-7: Construction Monitoring

The project biologist should conduct pre-construction meetings with equipment operators to address project specific biological constraints including the avoidance of native vegetation removal.

The project biological monitor should complete Weekly Construction Monitoring Forms detailing construction activities, evidence for or against compliance with the aforementioned management practices, and any corrections and/or discussions made with site personnel.

B-8: Open Trenches and Ditches

Open trenches and ditches can trap small mammals, amphibians, and reptiles and can cause injury to large mammals. Highest activities for many of these species occur during night time, summer months, and wet weather. To avoid and minimize the amount of the open trenches, the following measures are recommended:

- Avoid leaving open trenches overnight
- Keep trenching and back-filling crews close together at any given time

B-9: Hazardous Materials and Pollution Abatement

- To avoid impacts to listed species and their habitats, all hazardous materials will be stored using a secondary containment system, at a location away from biological resource areas.
- All vehicle fueling and maintenance should be conducted at an appropriate facility away from natural areas. Vehicles should be checked daily for leaks that if introduced to water could be deleterious to aquatic life. Vehicles identified for repair should be positioned over drip pans as a temporary containment and removed from the construction site as soon as possible.
6.6 HISTORIC AND CULTURAL RESOURCES

The Proposed Action Alternatives and the No Action Alternative were analyzed to evaluate potential impacts on historic and cultural resources, including archaeological, architectural and Native American resources within the proposed project area.

6.6.1 Methodology

The Area of Potential Effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The proposed site APE was investigated by means of a literature search and field survey to gather the data required for evaluation of their potential to contain historic resources. Two teams of researchers were utilized for this work. An archaeologist (UltraSystems and/or CRM TECH staff) conducted the literature search at the South Central Coastal Information Center (the local California Historical Resources Information System [CHRIS] repository), to identify those previously recorded prehistoric and historic sites that may be located within the APE (see Tang and Hogan 2011 in Appendix E). The APE for direct effect is defined as the maximum extent of ground disturbance required for tower installation, which includes the construction pad and adjacent vacant land within a 55- by 55-foot buffer zone. The APE for visual effect and possible prehistoric cultural resources encompasses the area within an 0.5-mile or 0.75-mile radius of the tower site, depending on the proposed tower heights, pursuant to the FCC’s Nationwide Programmatic Agreement Section VI.C.4a.

In a letter dated May 11, 2012, the State Historic Preservation Officer (SHPO) concurred that the APE has been properly determined and documented pursuant to 36 CFR Parts 800.4 (a)(1) and 800.16(d) (see Appendix F).

A team of architectural historians and archaeologists (UltraSystems and CRM TECH staff) conducted a field visit to the project site location to identify potential historic properties within the APE for direct effects. A further source of information is the Native American Heritage Commission (NAHC), which maintains a Sacred Lands File (SLF). The information gathered from these three sources was then synthesized to determine what potential issues might arise given the California State Office of Historic Preservation (SHPO) guidelines for the evaluation of historic places (see Tang and Hogan 2011 in Appendix E and Native American Correspondence in Appendix G).

A geologist/paleontologist (CRM TECH staff) reviewed the records search results from the Los Angeles County Museum of Natural History, conducted a literature search and carried out a systematic field survey of the APE in accordance with the guidelines of the Society of Vertebrate Paleontology. The information gathered from these three sources was then synthesized to determine what potential issues might arise (see Quinn and Jacquemain 2011 in Appendix H).

6.6.2 Impact Analysis

The following section describes the two project alternatives, followed by the potential effects of each alternative on archaeological resources, architectural resources, Native American resources, and paleontological resources.

6.6.2.1 No Action Alternative

Under the No Action Alternative, the new 109-foot tower on Mount Lukens would not be constructed. Impacts of the No Action Alternative would be insignificant to historic and cultural resources.
6.6.2.2 Proposed Action Alternative

The proposed action includes facility upgrades to an existing communications site, including construction of a new communications tower, located at the summit of Mount Lukens, on USFS lands, within the Angeles National Forest, in Los Angeles County, California. Impacts of the Proposed Action Alternative will be insignificant to historic and cultural resources.

Archaeological Resources

The Mount Lukens proposed site location was not found to be situated over any documented prehistoric archaeological resource. Field surveys that were conducted by archaeologists and architectural historians (UltraSystems and CRM TECH staff) at the project site locations did not observe any archaeological resources in the vicinity.

The proposed improvement of facility upgrades to an existing communications site, including construction of a new communications tower, may create a subsurface disturbance with an adverse effect on buried cultural resources. If an access road that falls outside the current APE is required to transport construction material, the grading for these roads also has the potential for disturbing or destroying surface and subsurface archaeological deposits.

Architectural Resources

The age of a structure that sets apart “historic” from “recent” for consideration is 45 years or older according to the FCC guidelines, meaning a construction date of 1966 or earlier. While several structures at and near the proposed site fall within this category, the site will not have new towers placed on or immediately adjacent (i.e., less than 20 feet) to them, and so there will be no direct effect upon any historic structures.

In a letter dated May 11, 2012, the State Historic Preservation Officer (SHPO) concurred that a finding of No Historic Properties Affected is appropriate pursuant to 36 CFR Part 800.4 (d)(1) and that the documentation supporting this finding has been provided pursuant to 36 CFR Part 800.11(d) (see Appendix F).

Native Resources

The BOE, as a part of the Section 106 process, is required to consult with the Native American Heritage Commission (NAHC), a California state agency, regarding all project site locations. The Commission will then conduct a review to determine if a given potential project site location lies in the vicinity of a recorded Native American religious site listed on the Commission’s Sacred Lands File (SLF). Communication with the Commission is also required to receive a contact list of those Native American tribes, communities, entities and individuals who are on record as interested parties for projects being conducted within their traditional lands and/or area of interest. For these purposes, the location of the proposed project site, provided to UltraSystems by longitude and latitude as well as by street address, was converted to Range, Township and Section, and shown on a USGS quad map for evaluation by the NAHC. This location information for the project site was then mailed to the Commission on October 31, 2011. In their reply of November 1, 2011 the Commission staff determined that the project site was not located within 0.5-mile of a known site listed in the SLF. They also identified traditional Native American tribal lands where the project site was located. The identified tribes are the Gabrielino-Tongva and Fernandeño. (See Figure 6.6-1, Native
American Tribal Territories below for a map of local Native American Tribal Territories that fall within the County of Los Angeles.) These groups are neither federally recognized tribes nor have a federally recognized component. This information was mailed to UltraSystems Environmental, Inc. (UEI), along with a list of 14 Native American contacts and the tribal lands with which they are connected.

UEI staff prepared and mailed letters on November 2, 2011 to the 14 groups and individuals identified by the NAHC, including the site location and a map. These letters requested any information they would care to provide on possible sacred sites, such as those on the SLF, as well as if they had any questions, concerns or issues related to the JAG project. This mailing was followed by e-mails on November 3, 2011, to the 14 groups for which e-mail addresses were available. (See Native American Heritage Commission and Native American Consultation Letters in Appendix G.)

Mr. Andy Salas with the Gabrielino Band of Mission Indians replied on November 8, 2011 to the e-mail that there are prehistoric village sites within “the proposed project area and are highly culturally sensitive;” and requested that a Native American monitor be on site if the project results in ground disturbance. There were no other responses from Native Americans by the time this report was prepared. (See Native American Consultation Letters in Appendix G.)

The Preferred Project Alternative does not have the potential to adversely affect known Native American resources with ground disturbing activities associated with the construction of a communications tower.

**Paleontological Resources**

The results of the paleontological assessment indicate that the proposed project’s potential to impact paleontological resources is low at the Mount Lukens site (see Quinn and Jacquemain 2011 in Appendix H).

### 6.6.3 Mitigation Measures

There are no known prehistoric cultural resources present at this project site, so no adverse effects requiring mitigation are expected. However, the DOJ has received comments from several Native American representatives regarding planned ground disturbance during project construction. These individuals expressed concern over the potential presence of unrecorded sites, remains and artifacts within areas of planned excavation and have requested the implementation of mitigation measure CUL-1 (see Appendix E). Additionally, as a precaution in case archaeological materials are found, implementation of mitigation measures CUL-2 through CUL-4 will reduce JAG Project impacts to a less than significant level.

**Archaeological Resources**

**CUL-1:** A qualified Native American and archaeological monitor will be present during all ground disturbance associated with the project.

**CUL-2a.** If any archaeological materials are encountered during the course of project development, all further development activity shall halt and:

- The services of an archaeologist shall then be secured by contacting the SCCIC, located at California State University Fullerton, for a referral, or a member of the Register of Professional Archaeologists (RPA) or a RPA-
quality archaeologist, who shall assess the discovered material(s) and prepare a survey, study or report evaluating the impact.

b. The archaeologist’s survey, study or report shall contain a recommendation(s), if necessary, for the preservation, conservation, or relocation of the resource.

c. JAG shall comply with the recommendations of the evaluating archaeologist, as contained in the survey, study or report.

d. Project development activities may resume once copies of the archaeological survey, study or report are submitted to: SCCIC Department of Anthropology at CSU Fullerton, CA.

CUL-2b. Human Remains - In the event that human remains are discovered during construction excavation activities, the following procedure shall be observed:

a. Stop immediately and contact the Los Angeles County Coroner.

b. The Coroner has two working days to examine human remains after being notified by the responsible person. If the remains are Native American, the Coroner has 24 hours to notify the Native American Heritage Commission.

c. The Native American Heritage Commission will immediately notify the person it believes to be the most likely descendent (MLD) of the deceased Native American.

d. The MLD has 48 hours to make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the human remains and grave goods.

e. If the descendent does not make recommendations within 48 hours the owner shall reinter the remains in an area of the property secure from further disturbance, or;

f. If the owner does not accept the descendant’s recommendations, the owner or the descendent may request mediation by the Native American Heritage Commission.

Architectural Resources

For project improvements affecting historic architectural resources, implementation of the JAG facility shall involve minimal change to the defining characteristics of the building and its site and environment. The historic character of a property shall be retained and preserved. The removal of historic material or alteration of features and spaces shall be avoided. Prior to the issuance of any permit, the project shall obtain clearance from the Department of Cultural Affairs for the proposed work.

There are no National Register Properties at this project site, and so no mitigation is required.

Native Resources

There are no known Native American cultural and/or religious resources present at this project site, and so no adverse effects requiring mitigation are expected.

CUL-3. If an unexpected discovery of a Native American cultural resource is made, a qualified archaeological and Native American monitor should be brought to evaluate the find and make mitigation recommendations.

Paleontological Resources
The results of the paleontological resource assessment indicate that the proposed project's potential to impact resources is low at the Mount Lukens site, and so no adverse effects requiring mitigation are expected.

**CUL-4.** If an unexpected discovery of paleontological resources is made, a qualified paleontologist should be brought to evaluate the find and make mitigation recommendations.
Figure 6-1 Native American Tribal Territories

Legend
- LA County Boundary
- Tribal Boundary
- Uncertain Tribal Boundary

Source: ESRI, 2010; Los Angeles County, 2011; ESRI World Street Map, 2009; UltraSystems Environmental Inc, 2011; Smithsonian, 1978

March 30, 2011
6.7 AESTHETIC AND VISUAL RESOURCES

6.7.1 Methodology

This section examines the potential project impacts on federal and state resources including Scenic Byways, Highways, National and State Parks, Wild and Scenic Rivers, and Coastal Areas.

A site visit that formed the basis for the existing conditions and adjacent land use descriptions was conducted in late September 2011. The field crew was instructed to take photos of the project boundaries facing the site as well as photos facing away from the site.

To determine if a project site had no issues, potential issues, or demonstrated issues, a review of maps, relevant state and federal land use planning documents, field work photos, and existing state and federal regulatory requirements was conducted. A Visual Impact Assessment was prepared by UltraSystems in May 2012 to determine the potential visual impacts to the surrounding area and to the general public, and is included in Appendix I.

6.7.2 Impact Analysis

No Action Alternative

No impact would result since no new communications facilities would be constructed.

Proposed Action Alternative

National Scenic Byways and State Designated Scenic Highway

The nearest National Scenic Byway to the project site is the Angeles Crest Byway. However, the Scenic Byway is located more than 2 miles east of the project site, and is screened from views of the project site by the terrain. Travelers on this byway will not be affected by installation of the communication tower. The installation of the communication tower will result in insignificant impacts on this visual resource.

National Wild and Scenic Rivers

The project site is not located near any National Wild and Scenic River. Therefore, no visual issues associated with designated Wild and Scenic Rivers will result from implementation of the proposed project.

Coastal Zone

According to California Coastal Act Section 30251,

“The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality to visually degraded areas.”

The project site is not located within a coastal zone. Therefore, the project will not result in any visual impacts on the coastal zone.

State and National Parks and Forests, Wilderness Areas and Wildlife Refuges

This site is located on the grounds of a large telecommunications complex on the summit of Mount Lukens, which is within the boundaries of the Angeles National Forest.
and is regulated under the Angeles National Forest Land Management Plan. The natural environment of Angeles National Forest harbors numerous sensitive visual resources for visitors to enjoy. The national forest has been divided into geographical units called “Places.” Each Place has its own “landscape character.” The project site is located in the Front Country Place, which is described as the scenic mountain backdrop for the greater Los Angeles area. It is one of the “Key Places” representing the most picturesque national forest locations, containing its own landscape character. The project site is listed as an area of high scenic priority according to the Scenic Integrity Map of the ANF Land Use Plan.96

The Rim of the Valley Trail Corridor is located within the project study area. It is a policy of the Rim of the Valley Trail Master Plan that foothills along the urban edge, and ridges and peaks visible from the valleys should be preserved for the views, and that broad buffers of natural vegetation along trails and surrounding developed park facilities be preserved to enhance the scenic values of the Corridor.

Available views in the area include rugged canyon slopes vegetated with mixed chaparral. Long distance views of the urbanized valley are also available. Multiple communications towers are visible on the peak. The proposed project would be of similar height to the existing multiple communications towers, and would not obstruct views along the Corridor or Forest.

Northwest of the project site is the Stone Canyon Trail, which becomes Pigpen Spur Road as it leads directly up to the existing communication facility on Mount Lukens Road (Rim of the Valley Trail). The location of the proposed tower would be 100 feet from the Rim of the Valley Rail on the north and less than 500 feet from a descending section of the trail to the southwest. Recreational users of these trails who travel upslope toward the summit of Mount Lukens are visually sensitive to the physical changes proposed by the project. The installation of a new lattice-tower may affect the intactness of the visual landscape, but does not substantially lower the overall visual quality for trail users. The current view of the summit is already composed of multiple communication towers and antennas. The project will blend well with these existing backdrop elements and will not obstruct any scenic views. Existing trees, brush, vegetation and surrounding hilly terrain would also help to screen offsite visual receptors at lower elevations from the new tower on Mount Lukens.

The proposed project will not exceed 5,175 feet above mean sea level and would not exceed a tower height of 120 feet, as specified in the Mount Lukens Communication Site Management Plan.97 The project will also be visually consistent with the existing communication facility, and not result in any negative visual impacts on the Angeles National Forest. To be consistent with the Communication Site Management Plan and to maintain the aesthetic quality of the Angeles National Forest’s sensitive visual resources, the project will incorporate BMPs AV-1 through AV-5.

6.7.3 Best Management Practices

AV-1: To the extent technically feasible and in compliance with all safety regulations, neutral colors of paint or other camouflaging techniques


shall be used on the tower to blend better with its setting. Finishes or colors that would be shiny or reflective in sunlight are not allowed.

**AV-2:** The minimum amount of pilot warning and obstruction avoidance lighting required by the FAA shall be used and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night shall be avoided when feasible. See FAA Advisory Circular AC 70/7460-1K: Obstruction Marking and Lighting.

**AV-3:** Security lighting for on-ground facilities and equipment shall be down-shielded to keep light within the boundaries of the site.

**AV-4:** Tower shall not be used for the purposes of signage to display a message of any kind.

**AV-5:** During construction, appropriate screening (i.e., temporary fencing with opaque material) shall be used to buffer views of construction equipment and material, when feasible.
6.8 LAND USE

6.8.1 Methodology

The analysis in this report focuses on the land profile of the study area, including land use characteristics, land use policy consistency, land use compatibility and anticipated land use regulations and permitting requirements. The land use analysis describes the relevant existing conditions, the potential impacts of the project (at the project site, adjacent land uses and nearby sensitive receptors), the significance of the identified impacts, and potential solutions (or mitigation) to best avoid the adverse impacts resulting from the project.

Data Sources

Data sources for the land use analysis included physical site visits, review of aerial photography, review of agency documents, and additional research through online searches and agency contacts.

The proposed project site was visited to establish the context of existing onsite and adjacent surrounding land uses. The general plan and zoning code for Los Angeles County was reviewed to identify the adopted land use designation, policies, regulations and zone category for the proposed project site. Policy and comprehensive planning documents for special areas/agencies (i.e., forest plan or coastal zone plans) were also accessed and reviewed for information pertaining to siting wireless telecommunication facilities. When available, specific wireless telecommunication facility permitting and development standards were obtained and evaluated.

6.8.2 Impact Analysis

No Action Alternative

No environmental impacts would result since no new communications facilities would be constructed at the project site. The No Action alternative would not meet the needs of the City and County first responders.

Proposed Action Alternative

The proposed action alternative calls for a new, approximately 109-foot self supporting steel four-legged communication tower, including footing modification and conduits. The original proposed height for the new tower was 180 feet, but the Mount Lukens Communication Site Management Plan specifies that “all new towers (including antennas) shall not exceed 5,175 feet above mean sea level (AMSL).” Therefore, at the proposed location, a communications tower will have a maximum allowable height of approximately 109 feet. The facility will be in compliance with FAA lighting and warning signal regulations, as specified in the Site Management Plan. Appurtenant ground equipment related to the BOE antenna will be placed within an existing indoor shelter onsite and proximal to the proposed tower location. The project facility will be powered by commercial electricity. Back-up emergency power will be provided by an existing onsite diesel-powered generator. No impacts to surrounding land uses will occur.

6.8.3 Mitigation Measures

When considering project site conditions, proposed development, applicable policy, and local-agency entitlement requirements no impacts are identified with the proposed action alternative, as the proposed action will be in compliance with all existing land use regulations. Therefore no mitigation measures are required.
6.9 INFRASTRUCTURE

According to NEPA Guidelines, a project would have a significant impact on infrastructure systems if it would:

- Result in prolonged disruption of services due to relocation or improvements.
- Result in the loss of or reduced access to public utility lines or pipes.
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Need new or expanded entitlements to supply water to the project.
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project’s projected demand in addition to its existing commitments.
- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Be served by a landfill with insufficient permitted capacity to accommodate the project’s solid waste disposal needs.
- Not comply with federal, state, and local statutes and regulations related to solid waste.

6.9.1 Methodology

Most impacts to utilities will occur during construction of the project, when utility lines may require relocation. However, following construction, utility lines will be the same or have improved functionality over the existing lines.

Impacts to public utility services were determined by analyzing direct impacts to utility lines (overhead and underground). Direct impacts include conflicts with proposed communications facilities and existing utilities. Information about utility line locations was obtained from the service providers, field review, project plans and profiles, and as-built drawings. Although every effort was made to obtain available documentation (such as as-built drawings) for all known utilities and to map existing utility lines and facilities, other unidentified utilities may be located on project sites. Analysis of infrastructure impacts focused on the proposed project’s potential to result in disruption of services or loss of access to utilities, require construction of new or expanded utility services or facilities, or affect solid waste landfill capacity. Coordination with all providers will continue through final design and construction of the project.

UltraSystems studied aerial photographs and roadway maps for the project site, to identify site access information. This was followed by visits to the project location for field verification of existing infrastructure facilities. The following infrastructure facilities were surveyed:

- Vehicle access;
- Electrical access;
- Drainage; and
- Solid waste disposal
If these facilities were already available at the project site, it was assumed that the proposed development of the tower could be constructed and operated with little or no infrastructure improvement.

6.9.2 Impact Analysis

For the purpose of this impact analysis, the threshold for potentially significant operational or direct impacts on infrastructure has been defined as follows. It would be considered an environmentally adverse impact if the project would:

- Require significant additional infrastructure capacity, such as:
  - Significantly increasing peak and/or base period electrical demand; and/or
  - Require significant extension of service lines or roadways
- Contribute to a cumulatively significant requirement for additional infrastructure capacity

In addition, significant short-term construction energy impacts would occur if construction of the project was determined likely to consume a large commitment of nonrenewable energy resources. This is not anticipated to occur as increasing infrastructure capacity availability is typically done by providers in a cost and energy efficient manner.

No Action Alternative

Under the No Action Alternative, the proposed new 109-foot tower on Mount Lukens would not be constructed. The No Action Alternative would not create any new demand on existing infrastructure or transportation systems. No impacts to infrastructure would occur.

Proposed Action Alternative

The Proposed Project Alternative will result in a minor increase in demand for electricity, largely from the creation of a new tower. Electrical power is already provided to the facility, and this increase in demand is considered a less than significant impact as the project’s overall electrical demand is minimal from a regional context. The Proposed Action will not result in long-term impacts to wastewater or solid waste providers as the Proposed Action is an unmanned system and not expected to generate waste. Mitigation Measures I-1 and I-2 will reduce temporary impacts to solid waste providers that could arise during construction activities.

The project site may have potential access issues, and the proposed action could result in temporary impacts to the transportation system at the local level due to the presence of construction vehicles in the vicinity of each construction site during construction activities. Long-term operational impacts on the regional transportation network will be minimal, as the Proposed Action will only require periodic maintenance visits.

6.9.3 Applicant Proposed Measures

Although the Preferred Alternative will not result in significant impacts to infrastructure, the following Applicant Proposed Measures will be implemented during construction and demolition to minimize the potential for any impacts to occur.

I-1: Solid Waste Recycling (Construction and Demolition) - Prior to the issuance of any demolition or construction permit, BOE shall provide a copy of the receipt or contract from a waste disposal company providing services to the
project, specifying recycled waste service(s), to the satisfaction of the Department of Building and Safety. The demolition and construction contractor(s) shall only contract for waste disposal services with a company that recycles demolition and/or construction-related wastes.

I-2: Solid Waste Recycling (Construction and Demolition) - To facilitate on-site separation and recycling of demolition- and construction-related wastes, the contractor(s) shall provide temporary waste separation bins on-site during demolition and construction. These bins shall be emptied and their contents shall be recycled accordingly as a part of the project's regular solid waste disposal program.
6.10 SOCIOECONOMIC RESOURCES

6.10.1 Methodology

The impact analysis in this section is based on the demographic and economic information provided in Section 5.10, Existing Setting for Socioeconomic Resources. All data for socioeconomic resources were gathered from Nielsen Claritas Site Reports for the year 2011.

Environmental Justice

Executive Order 12898, known as the Environmental Justice Policy, requires federal agencies to achieve environmental justice by addressing disproportionately high adverse human health and environmental effects, including interrelated social and economic effects of their programs, policies and activities on minority and low-income populations in the United States. An adverse impact is found to have a disproportionately high and adverse impact on low-income or minority populations when (1) the adverse impact is predominately borne by a minority population and/or a low-income population, or (2) the adverse impact that would be suffered by the minority population and/or low-income population is more severe or of greater magnitude than the adverse impact that would be suffered by the nonminority population and/or non-low-income population.

In accordance with the guidelines set forth in Executive Order 12898, the potential for impacts to environmental justice populations is identified by the presence of a low-income population or minority population, defined as a population that met either or both of the following criteria:

3. The minority and/or low income population within the study area exceeds 50% or
4. The percentage of minority and/or low-income persons in the study area is meaningfully greater than the minority and/or low income population in Los Angeles County. The minority and/or low income population is considered meaningfully greater if it is more than 10 percentage points greater than the county average.

Minority Population

In accordance with the guidance for Environmental Justice (EJ) provided under NEPA, minority population is defined as individuals who are members of the following population groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black or Hispanic. Note that the U.S. Census treats Hispanic as an ethnicity, rather than a race.

Low Income Population

Low Income Population is identified as population below annual statistical poverty thresholds as established by the U.S. Census Bureau. For the purpose of the analysis in this report, 2011 Claritas Data for Families below Poverty Level was used to identify low income population.

6.10.2 Impact Analysis

No Action Alternative

The No Action Alternative would have no socioeconomic impact, and public services, residents, businesses and institutions would continue to operate without the benefit of increased public safety, welfare and more efficient communication.
Proposed Action Alternative

The proposed project will not have any significant effects on the population and the socioeconomic characteristics on the study area. Environmental Justice will not be an issue for this site since it is a remote location and the one-mile study area is mostly unpopulated.

6.10.3 Mitigation Measures

The primary objective of the proposed project is increased public safety and enhanced communication. Therefore, any effects to environmental justice populations and the community at large, resulting from the proposed project will be positive in nature and beneficial for the community. Therefore, no EJ mitigation measures are required.
6.11 HUMAN HEALTH AND SAFETY

Human health and safety issues (i.e. existing hazardous wastes sites, wildland fires, methane hazards, aviation hazards, etc.) associated with the project site were reviewed and summarized using the methodology described below.

6.11.1 Methodology

Hazards associated with wildland fires were evaluated by overlaying the project site onto georeferenced fire severity zone maps prepared by the California Department of Forestry and Fire Protection. This site, located in a very high fire severity zone, was tabulated and cross referenced with a review of aerial photos to confirm its location in areas of steep slope, limited access, and combustible vegetation.

A search of known hazardous materials sites was conducted using the GeoTracker and EPA Cleanups in My Community data bases. The State Water Resources Control Board (SWRCB) GeoTracker is a data management system used by SWRCB to manage information about permitted facilities such as operating Underground Storage Tanks (USTs) and land disposal sites. The SWRCB Geotracker program was used to identify Leaking Underground Tank (LUST) Cleanup Sites, Other Cleanup Sites such as those on Cortese list, and Permitted Underground Storage Tank (PUST) facilities located within a one-mile radius of the project site.

EPA Cleanups in My Community is a mapping tool that provides maps and lists of contaminated sites. Cleanup progress profiles include information about sites, facilities, and properties that have been contaminated by hazardous materials, have been cleaned up, or are in the process of being cleaned up under EPA Superfund, Resource Conservation and Recovery Act (RCRA), or Brownfield cleanup programs. This database was used to determine sites, facilities, and properties listed as Superfund, RCRA, or Brownfield sites located within a one-mile radius of the project site.

Hazards associated with methane gas were evaluated by overlaying the project site onto a georeferenced map containing data layers from a variety of sources including the Department of Oil, Gas and Geothermal Resources (DOGGR) and Los Angeles County Department of Public Works. The site is not within a methane zone or methane buffer zone.

Aviation safety was evaluated by considering the distance from the project site to a public or private airport. If the site was within one mile of an airport, it would have been further examined to determine whether they offered the potential for the project to conflict with policies of the applicable Airport Land Use Compatibility Plan adopted by the local Airport Land Use Commission. The site is not within one mile of an airport.

6.11.2 Impact Analysis

No Action Alternative

Under Alternative 1 (No Action), construction of a new tower would not occur, so workers would not be potentially exposed to contaminated soil or groundwater nor would they be exposed to the hazards of excavation for foundation construction. Similarly, the No Action Alternative would not introduce new structures or expose people to the hazards of a wildland fire or methane.

Proposed Action Alternative

Construction of new communication towers requires soil excavation for up to four caisson foundations. The proposed action consists of the construction of a new 109-foot
communications tower. The exposure potential is greatest where excavation is to occur on property listed in a state or federal database as having an open file.

**Existing Hazardous Waste Sites**- As discussed above in the Affected Environment, the property under consideration for the project is not listed on the National Priority List, Cortese List, or CERCLA lists.

Since a new tower is to be constructed, soil excavation needed to prepare the foundation footing can also expose workers to hazards from soil collapse if not properly sloped, benched, or otherwise shored. All excavation will be conducted consistent with Cal/OSHA regulations for safety including those outlined in California Code of Regulations, Title 8, Section 1540, Excavations. Providing all construction safety procedures are followed, the project will not generate any safety issues. Trained and qualified workers will perform all work. As part of the installation contractor selection process, bidders will be required to provide a detailed work plan, and a listing of the qualifications and training records of each worker proposed by the contractor to work in the project. In addition, the contractor’s safety records, OSHA 300 log for the last three years and the company’s safety program also will be required. The work plan and safety submittals will be taken into consideration as part of contractor selection process. For these reasons, impacts with regard to excavation related work are anticipated to be less than significant.

**Wildland Fires**- Since the site is located in the Angeles National Forest, it is located within a high fire hazard severity zone based on its combination of rugged topography, limited or poor access, presence of combustible vegetation, and lack of urban fire services. Consequently, project implementation at the location listed above may expose people or structures to a significant risk of loss, injury, or death involving wildland fires absent compliance with existing fire and building codes. Incorporation of design features required by local building codes will reduce the wildland fire hazard potential by: 1) creating defensible space through removal and clearance of flammable vegetation; 2) selective use of building materials, and; 3) construction and/or maintenance of existing, all weather access roads. These and additional Project Design Features are listed below.

**Methane and Aviation Hazards**- The site is not located within a Methane Zone, Methane Buffer Zone, or within 200 feet of an oil well or 1,000 feet of a landfill. Furthermore, the site is not located within the boundary of an adopted Airport Land Use Compatibility Plan. Therefore there are no methane hazards and no aviation hazards that will expose people as a result of the proposed action.

6.11.3 Mitigation Measures

No mitigation measures are required.

6.11.4 Project Design Features

Implementation of the following project design features will reduce the impact of wildland fire to an acceptable level.

**HHS-1**: Defensible spaces, including the removing and/or reduction of grasses, shrubs, and trees on or adjacent to a project site, shall be created to reduce the fuel load subject to burning from a wildland fire. This shall include removal of all vegetation within the project site enclosure and within 100 feet since the project site is located in the Angeles National Forest.
**HHS-2:** Defensible space shall be cleared and maintained on an annual basis as required by the city, county, state, or federal fire department since the project site is located in a designated very high fire severity area.

**HHS-3:** Appropriate firefighting equipment shall be kept in the equipment shelter to be constructed on the project site to fight spot fires that may occur during a wildland fire.
6.12 CUMULATIVE EFFECTS

“Cumulative impact” is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7). The cumulative impact assessment included in this EA identifies activities in the region that could interact, or overlap, in time or space with effects from the Proposed Action.

As mentioned in the project description (Chapter 2.0), the project site is within existing developed property leased by the City of Los Angeles for communications uses. Existing infrastructure is already present, further reducing the potential for additional impacts to the project area.

The LA-RICS project, a regional public safety communications network, has been proposed at over 260 locations throughout Los Angeles County. Providing an interoperable network for emergency first responders, the LA-RICS project would require installation of several new communications towers and/or entirely new communications facilities. The project site has been discussed as a potential LA-RICS site location, and in the future, may be incorporated into the LA-RICS network.

While the LA-RICS project is similar in nature (communications) and larger in scope than the Proposed Action, it has been determined that no potential for cumulative effects will occur. While LA-RICS would require the construction of up over 250 projects within the region, project construction would not occur within the same time frame as the JAG project, thereby reducing the potential for impacts in conjunction with the Proposed Action. Additionally, any potential LA-RICS activity at the project area would not occur during the Proposed Action, and would likely occur at a much later date, and be of minimal scope. Completion of both the JAG and LA-RICS projects would result in cumulative improvements to public health and safety and provide additional benefits to the community, including providing economic boosts to the region.

No additional projects are known at this time within the project site, therefore there is no potential for cumulative impacts.
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7.0 APPLICABLE ENVIRONMENTAL PERMITS AND REGULATORY REQUIREMENTS

This section summarizes the applicable permitting and regulatory requirements, including identification of the responsible agency, a brief description of the permit and review requirements, and a statement of the Mount Lukens project status. Detailed descriptions and discussions are provided within the topical Technical Reports of this document. A summary of the applicable permits and requirements also is provided in Table 7-1, Summary of Applicable Environmental Permits and Regulatory Requirements.

7.1 FEDERAL

**U.S. Forest Service (USFS)**

A Special Use Permit will be required for construction of any project on land owned by the USFS. The Mount Lukens site is located on land within the Angeles National Forest. The USFS has developed mitigation measures that must be implemented for the project. These measures will be implemented as project improvements are constructed.

7.2 STATE AND REGIONAL

Prior to issuance of a Finding of No Significant Impact (FONSI) in this EA process, the Project must undergo a review under the provisions of CEQA. The following state and local agency clearances must also be obtained as needed.

**California Native American Heritage Commission (NAHC)**

The NAHC is a California state agency overseeing the review of projects to determine impacts to recorded Native American religious sites listed on the Commission’s Sacred Lands File.

**NAHC Consultation** – The NAHC was contacted with a description of the Mount Lukens project and the project site location with a request that it conduct a search of its Sacred Lands Inventory for any Native American culturally sensitive sites, and to provide a list of Native American tribes and organizations to contact regarding the project site. The Commission responded November 2, 2011, stating that no Native American cultural resources were identified in the area of the Mount Lukens project site. A list of 14 Native American tribes and organizations was provided; letters describing the project and the site location were mailed November 2, and followed up with e-mails on November 4, 2011. Correspondence to and from these Indian Tribes is found in the technical appendix to the Historical and Cultural Technical Report.

**California Office of Historic Preservation**

Because funding has been provided by the Department of Justice (DOJ), it must comply with Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f), as amended, and its implementing regulation found at 36 CFR Part 800. A letter from the State Historic Preservation Officer (SHPO) dated May 11, 2012 was received which concurred that DOJ is in compliance with Section 106.

**South Coast Air Quality Management District (SCAQMD)**

The California Air Resources Board (CARB), which became part of the California Environmental Protection Agency (Cal-EPA) in 1991, is responsible for meeting the State requirements of the federal CAA, administering the CCAA, and establishing the CAAQS. The CCAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the CAAQS. CARB oversees the functions of local air...
pollution control districts and air quality management districts, including the SCAQMD, which in turn administer air quality activities at the regional and county levels.

SCAQMD monitors air quality within the South Coast Air Basin. The District establishes rules and regulations for construction activities of projects and on-going operation and maintenance of facilities which emit air pollutant emissions.

**Rule 403** – Measures to prevent, reduce or mitigate fugitive dust emissions must be taken during construction.

### 7.3 LOCAL

#### County of Los Angeles

The city of Los Angeles will require project approval to authorize the proposed use and construction of wireless telecommunication facilities within its jurisdiction. Such approvals may require the appropriate planning approval permit, grading permits, building permits and haul route plan review.
Table 7.3-1
Summary of Applicable Environmental Permits and Regulatory Requirements

<table>
<thead>
<tr>
<th>Applicable Permit/Regulatory Requirement</th>
<th>Permitting Agency</th>
<th>Regulatory Requirements</th>
<th>Status of Project Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Federal</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Special Use Permit</td>
<td>United States Forest Service (USFS)</td>
<td>Compliance with the USFS Mount Lukens Communication Site Plan</td>
<td>Prior to issuance of a construction permit.</td>
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<tr>
<td><strong>State and Regional</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Tribal Consultation</td>
<td>Native American Heritage Commission (NAHC) and Local Tribes</td>
<td>Contact NAHC for search of Sacred Lands File, and contact listed tribes for comments and concerns.</td>
<td>NAHC contacted November 1, 2011; Native American tribes and organizations contacted by letter November 2 and by e-mail on November 4, 2011.</td>
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<tr>
<td>Section 106 Compliance</td>
<td>California Office of Historic Preservation</td>
<td>Requires Federal agencies to take into account the effects of their undertakings on historic properties, and identify the appropriate State Historic Preservation Officer/Tribal Historic Preservation Officer (SHPO/THPO) to consult with during the process.</td>
<td>State Historic Preservation Officer (SHPO) was contacted by the DOJ on ____, and a response letter dated 5/11/12 was received which concurred that DOJ is in compliance with Section 106.</td>
</tr>
<tr>
<td>Rule 403 Compliance</td>
<td>South Coast Air Quality Management District (SCAQMD)</td>
<td>Prevent, reduce or mitigate fugitive dust emissions.</td>
<td>Will be addressed in construction phase.</td>
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<tr>
<td><strong>Local</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Local Land Use Entitlement (including Exemptions, Administrative Permits, Site Plan Approval, Use Permits, and Modification/Variances)</td>
<td>County of Los Angeles</td>
<td>Compliance with local agency requirements, including application and approval of local agency permits will be required.</td>
<td>Will be addressed in local permitting and construction phase.</td>
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</table>

Source: UltraSystems Environmental Inc.
## 8.0 List of Preparers

<table>
<thead>
<tr>
<th>NAME</th>
<th>AGENCY/ORGANIZATION</th>
<th>DISCIPLINE/EXPERTISE</th>
<th>EXPERIENCE</th>
<th>ROLE IN PREPARING IS/MND</th>
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</tr>
</tbody>
</table>
9.0 References


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emission reductions from the Carl Moyer Program in the State Implementation Plan.”
Diamond Bar, California: Resolution No. 07-9, June 1, 2007.


