

ENVIRONMENTAL ASSESSMENT FOR THE CAHUILLA INDIAN HEALTH CLINIC REPLACEMENT PROJECT VOLUME II: TECHNICAL APPENDICES



November 2020



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ENVIRONMENTAL ASSESSMENT

VOLUME II: TECHNNICAL APPENDICES

CAHUILLA INDIAN HEALTH CLINIC REPLACEMENT PROJECT ANZA, CALIFORNIA

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF INDIAN AFFAIRS PACIFIC REGION OFFICE



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November 2020

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VOLUME II: APPENDICES TO THE ENVIRONMENTAL ASSESSMENT

Appendix A Geotechnical Investigation

Prepared by Sladden Engineering, November 7, 2018

Appendix B Air Quality Report

Prepared by Birdseye Planning Group, May 2019

Appendix C Biological Resources Letter Report

Prepared by Merkel & Associates, October 7, 2019

Appendix D Farmland Conversion Impact Rating Form (Form AD-1006)

Prepared by BRG Consulting, Inc., February 2020.

Appendix E Cultural Resources Report and Section 106 Consultation

E-1 Cultural Resources Report, prepared by Cogstone August 2019

E-2 THPO Consultation and Request For Concurrence, August 4, 2020

E-3 THPO Concurrence, dated August 11, 2020

E-4 Cahuilla Tribe Correspondence, June 28, 2019

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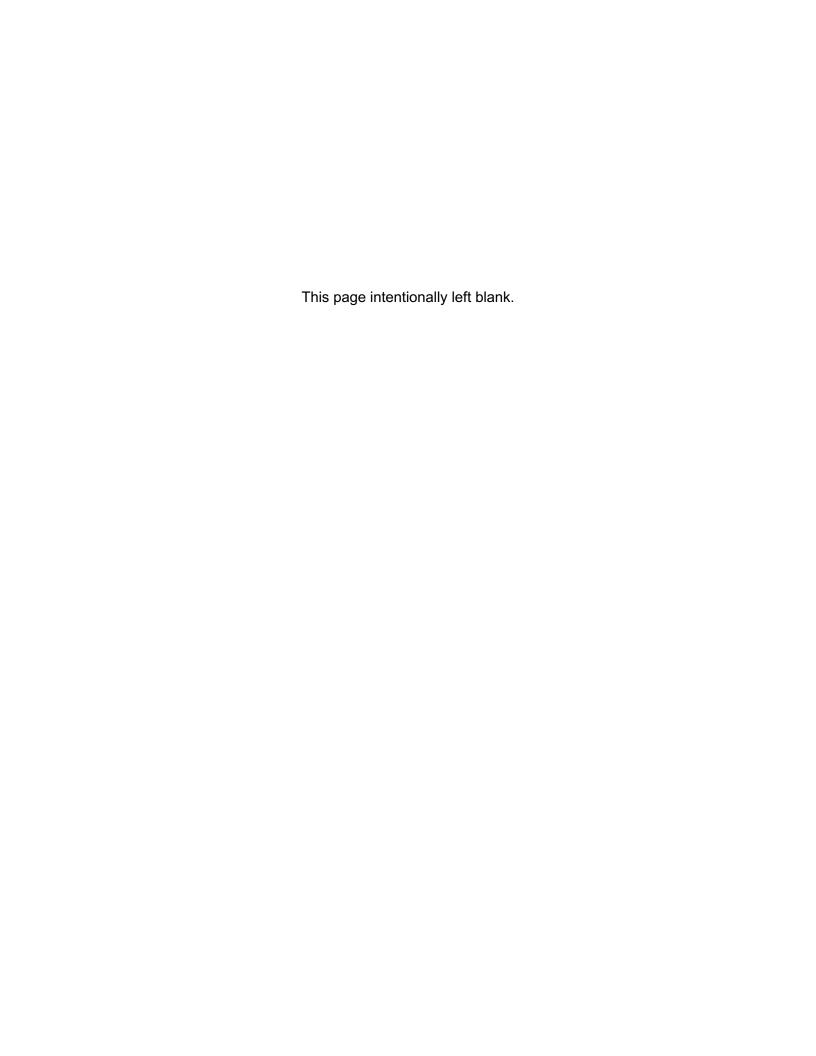
BRG Consulting, Inc. i November 2020

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BRG Consulting, Inc. ii November 2020

A

Geotechnical Investigation



GEOTECHNICAL INVESTIGATION PROPOSED CAHUIILLA HEALTH CENTER APN 572-190-004 CAHUILLA ROAD ANZA AREA RIVERSIDE COUNTY, CALIFORNIA

-Prepared By-

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November 7, 2018

Project No. 544-18356

18-11-538

Herron & Rumansoff Architects, Inc. 530 Saint John Place Hemet, California 92543

Subject:

Geotechnical Investigation

Project:

Proposed Cahuilla Health Center

APN 572-190-004 Cahuilla Road Anza Area

Riverside County, California

Sladden Engineering is pleased to present the results of the geotechnical investigation performed for the Cahuilla Health Center proposed for the subject site located on the south side of Cahuilla Road in the Anza area of Riverside County, California. Our services were completed in accordance with our revised proposal for geotechnical engineering services dated December 2, 2017 and your authorization to proceed with the work. The purpose of our investigation was to explore the subsurface conditions at the site in order to provide recommendations for foundation design and site preparation. Evaluation of environmental issues and hazardous wastes was not included within the scope of services provided.

The opinions, recommendations and design criteria presented in this report are based on our field exploration program, laboratory testing and engineering analyses. Based on the results of our investigation, it is our professional opinion that the proposed project should be feasible from a geotechnical perspective provided that the recommendations presented in this report are implemented in design and carried out through construction.

We appreciate the opportunity to provide service to you on this project. If you have any questions regarding this report, please contact the undersigned.

Respectfully submitted,

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GEOTECHNICAL INVESTIGATION PROPOSED CAHUIILLA HEALTH CENTER APN 572-190-004 CAHUILLA ROAD ANZA AREA RIVERSIDE COUNTY, CALIFORNIA

November 7, 2018

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INTRODUCTION

This report presents the results of the geotechnical investigation performed by Sladden Engineering (Sladden) for the Cahuilla Health Center proposed for the subject site located on the south side of Cahuilla Road in the Anza area of Riverside County, California. The site is situated on the northern end of APN 572-190-004 and is located at approximately 33.5233 degrees north latitude and 116.7762 degrees west longitude. The approximate location of the site is indicated on the Site Location Map (Figure 1).

Our investigation was conducted in order to evaluate the engineering properties of the subsurface materials, to evaluate their *in-situ* characteristics, and to provide engineering recommendations and design criteria for site preparation, foundation design and the design of various site improvements. This study also includes a review of published and unpublished geotechnical and geological literature regarding seismicity at and near the subject site.

PROJECT DESCRIPTION

Based on our preliminary discussions, it is our understanding that the proposed project will consist of constructing a new health care facility on the currently vacant property. We anticipate that the project will also include a new on-site sewage disposal system consisting of a septic tank and leach lines, stormwater retention areas, paved parking, underground utilities, concrete flatwork and various associated site improvements. For our analyses we expect that the proposed structure will consist of a single story wood-frame or steel-frame structure supported on conventional shallow spread footings and concrete slabs-on-grade.

Sladden anticipates that grading will be limited to minor cuts and fills within the building area in order to accomplish the desired pad elevation and to provide adequate gradients for site drainage. This does not include the removal and re-compaction of the primary foundation bearing soil within the building envelope. Upon completion of precise grading plans, Sladden should be retained in order to ensure that the recommendations presented within in this report are incorporated into the design of the proposed project.

Based on our experience with relatively lightweight structures, we expect that isolated column loads will be less than 20 kips and continuous wall loads will be less than 2.0 kips per linear foot. If these assumed loads vary significantly from the actual loads, we should be consulted to verify the applicability of the recommendations provided.

SCOPE OF SERVICES

The purpose of our investigation was to determine pertinent engineering characteristics of the surface and near surface soil and bedrock in order to develop foundation design criteria and recommendations for site preparation. Exploration of the site was achieved by advancing ten (10) exploratory boreholes to depths between approximately five (5) and fifteen (15) feet below the existing ground surface (bgs). Specifically, our site characterization consisted of the following tasks:

- Site reconnaissance to assess the existing surface conditions on and adjacent to the site.
- Advancing ten (10) exploratory boreholes to depths between approximately five (5) and fifteen (15) feet bgs in order to characterize the subsurface soil and bedrock conditions. Representative samples of the soil were classified in the field and retained for laboratory testing and engineering analyses.
- Performing laboratory testing on selected samples to evaluate their engineering characteristics.
- Reviewing geologic literature and discussing geologic hazards.
- Performing engineering analyses to develop recommendations for foundation design and site preparation.
- The preparation of this report summarizing our work at the site.

SITE CONDITIONS

The project site is located on the south side of Cahuilla Road and northeast of Puckit Drive in the Anza area of Riverside County, California. The site consists of approximately 4-acres of undeveloped land and is formally identified by the County of Riverside as APN 572-190-004. At the time of our field investigation, the site was undeveloped and covered in scattered low growth vegetation. A topographic high composed of shallow seated bedrock is located near the eastern portion of the site. The site is near the elevation of the adjacent properties and roadways and is bounded by Cahuilla Road to the north and undeveloped land to the east, south, and east.

Based on our review of the Cahuilla Mountain 7.5-Minute Quadrangle Map (USGS, 2015) the site is situated at an approximate elevation of 3,490 feet above mean sea level (MSL).

No natural ponding of water or surface seeps were observed at or near the site during our investigation conducted on October 10, 2018 Site drainage appears to be controlled via sheet flow and surface infiltration. Regional drainage is provided by Cahuilla Creek and associated tributaries located to the south of the site.

GEOLOGIC SETTING

The project site is located in the Peninsular Ranges Physiographic Province of California. The Peninsular Ranges are mountainous areas that extend from the western edge of the continental borderland to the Salton Trough and from the Transverse Ranges Physiographic Province in the north to the tip of Baja California in the south. The Peninsular Ranges Physiographic Province is characterized by northwest-trending topographic and structural features that locally include the San Jacinto Structural Block. The San Jacinto Structural Block is a northwest-southeast trending elongated structural block bounded on the southwest by the San Jacinto Fault and by the San Andreas Fault Zone to the northeast. The province is characterized by elongated, northwest-southeast trending mountain ranges and valleys and is truncated at its northern margin by the east-west grain of the Transverse Ranges. Mountainous areas of the Peninsular Ranges Physiographic Province generally consist of Igneous, metasedimentary and metavolcanic rocks. However, plutonic rocks of the Southern California Batholith are the dominant basement rock exposed (Jahns, 1954).

The site has been mapped by Rogers (1965) to be immediately underlain by alluvium (Qal) and Mesozoicage granitic rocks (gr). The regional geologic setting for the site vicinity is presented on the Regional Geologic Map (Figure 2).

SUBSURFACE CONDITIONS

The subsurface conditions at the site were investigated by advancing ten (10)) exploratory boreholes to depths between approximately five (5) and fifteen (15) feet bgs. The approximate locations of the boreholes are illustrated on the Borehole Location Photograph (Figure 3). The boreholes were advanced using a truck-mounted Mobile B-61 drill-rig equipped with 8-inch outside diameter hollow stem augers. A representative of Sladden was on-site to log the materials encountered and retrieve samples for laboratory testing and engineering analysis.

During our field investigation, a thin mantle of fill/disturbed soil and alluvium consisting of silty sand and sandy silt was encountered to depths between approximately two (2) feet and twelve (12) feet bgs. The surface soil appeared yellowish brown to olive brown in in-situ color, moist and fine to coarse-grained. Underlying the surface soil and extending to maximum depths explored, bedrock was encountered (gr). The bedrock appeared yellowish brown to grayish brown in in-situ color and highly weathered. Generally, the underlying earth materials observed within the boreholes appeared to have adequate strength for the anticipated foundation loads at relatively shallow exploration depths.

The final logs represent our interpretation of the contents of the field logs, and the results of the laboratory observations and tests of the field samples. The final logs are included in Appendix A of this report. The stratification lines represent the approximate boundaries between soil types, although the transitions may be gradual and variable across the site.

Groundwater was not encountered to a maximum explored depth of approximately 15 feet bgs during our field investigation. As such, it is our opinion that groundwater should not be a factor during construction of the proposed project.

SEISMICITY AND FAULTING

The southwestern United States is a tectonically active and structurally complex region, dominated by northwest trending dextral faults. The faults of the region are often part of complex fault systems, composed of numerous subparallel faults which splay or step from main fault traces. Strong seismic shaking could be produced by any of these faults during the design life of the proposed project.

We consider the most significant geologic hazard to the project to be the potential for moderate to strong seismic shaking that is likely to occur during the design life of the project. The proposed project is located in the highly seismic Southern California region within the influence of several fault systems that are considered to be active or potentially active. An active fault is defined by the State of California as a "sufficiently active and well defined fault" that has exhibited surface displacement within the Holocene epoch (about the last 11,000 years). A potentially active fault is defined by the State as a fault with a history of movement within Pleistocene time (between 11,000 and 1.6 million years ago).

As previously stated, the site has been subjected to strong seismic shaking related to active faults that traverse through the region. Some of the more significant seismic events near the subject site within recent times include: M6.0 North Palm Springs (1986), M6.1 Joshua Tree (1992), M7.3 Landers (1992), M6.2 Big Bear (1992) and M7.1 Hector Mine (1999).

Table 1 lists the closest known potentially active faults that was generated in part using the EQFAULT computer program (Blake, 2000), as modified using the fault parameters from The Revised 2002 California Probabilistic Seismic Hazard Maps (Cao et al, 2003). This table does not identify the probability of reactivation or the on-site effects from earthquakes occurring on any of the other faults in the region.

TABLE 1
CLOSEST KNOWN ACTIVE FAULTS

Fault Name	Distance (Km)	Maximum Event
San Jacinto - Anza	10.3	7.2
San Jacinto – Coyote Creek	25.9	6.8
Elsinore - Julian	26.2	7.1
Elsinore - Temecula	27.3	6.8
San Jacinto – San Jacinto Valley	27.4	6.9
Earthquake Valley	42.1	**7.0
San Andreas - San Bernardino	49.7	7.5
San Andreas - Southern	49.7	7.2
San Andreas - Coachella	52.6	7.2

^{**}Probable Magnitude based on SCEDC (2018)

2016 CBC SEISMIC DESIGN PARAMETERS

Sladden has reviewed the 2016 California Building Code (CBC) and summarized the current seismic design parameters for the proposed structure. The seismic design category for a structure may be determined in accordance with Section 1613 of the 2016 CBC or ASCE7. According to the 2016 CBC, Site Class C may be used to estimate design seismic loading for the proposed structure. The 2016 CBC Seismic Design Parameters are summarized below (USGS, 2018a). The project Design Map Reports are included within Appendix C.

Risk Category (Table 1.5-1): I/II/III
Site Class (Table 1613.3.2): C
Ss (Figure 1613.3.1): 1.500g
S1 (Figure 1613.3.1): 0.600g
Fa (Table 1613.3.3(1)): 1.0
Fv (Table 1613.5.3(2)): 1.3
Sms (Equation 16-37 {Fa X Ss}): 1.500g
Sm1 (Equation 16-38 {Fv X S1}): 0.780g
SDS (Equation 16-39 {2/3 X Sms}): 1.000g
SD1 (Equation 16-40 {2/3 X Sm1}): 0.520g
Seismic Design Category: D

GEOLOGIC HAZARDS

The subject site is located in an active seismic zone and will likely experience strong seismic shaking during the design life of the proposed project. In general, the intensity of ground shaking will depend on several factors including: the distance to the earthquake focus, the earthquake magnitude, the response characteristics of the underlying materials, and the quality and type of construction. Geologic hazards and their relationship to the site are discussed below.

- I. Surface Rupture. Surface rupture is expected to occur along preexisting, known active fault traces. However, surface rupture could potentially splay or step from known active faults or rupture along unidentified traces. Based on our review of Rogers (1965), Jennings (1994), CDOC (2018) and RCPR (2018), known faults are not mapped on or projecting towards the site. In addition, no signs of active surface faulting were observed during our review of non-stereo digitized photographs of the site and site vicinity (Google, 2018). Finally, no signs of active surface fault rupture or secondary seismic effects (lateral spreading, lurching etc.) were identified on-site during our field investigation. Therefore, it is our opinion that risks associated with primary surface ground rupture should be considered "low".
- II. Ground Shaking. The site has been subjected to past ground shaking by faults that traverse through the region. Strong seismic shaking from nearby active faults is expected to produce strong seismic shaking during the design life of the proposed project. A probabilistic approach was employed to the estimate the peak ground acceleration (amax) that could be experienced at the site. Based on the USGS Unified Hazard Tool (USGS, 2018b) shear wave velocity (Vs30) of 537 m/s, the site could be subjected to ground motions on the order of 0.46+g. The peak ground acceleration at the site is judged to have a 475 year return period and a 10 percent chance of exceedence in 50 years.

- III. <u>Liquefaction</u>. Liquefaction is the process in which loose, saturated granular soil loses strength as a result of cyclic loading. The strength loss is a result of a decrease in granular sand volume and a positive increase in pore pressures. Generally, liquefaction can occur if all of the following conditions apply: liquefaction-susceptible soil, groundwater within a depth of 50 feet or less, and strong seismic shaking.
 - Based on the presence of shallow seated bedrock underlying the site, risks associated with liquefaction and liquefaction related hazards should be considered negligible.
- IV. <u>Tsunamis and Seiches</u>. Because the site is situated at an inland elevated location, and is not immediately adjacent to any impounded bodies of water, risks associated with tsunamis and seiches are considered negligible.
- V. <u>Slope Failure, Landsliding, Rock Falls</u>. No signs of slope instability in the form of landslides, rock falls, earthflows or slumps were observed at or near the subject site. The site is not located immediately adjacent to any slopes or hillsides. As such, risks associated with slope instability should be considered negligible.
- VI. Expansive Soil. Generally, the near surface soil on the site consists of silty sand (SM), and sandy silt (ML). Based on the results of our laboratory testing (EI=10 & EI-45), the materials underlying the site are considered to have a "low" expansion potential.
- VII. <u>Static Settlement</u>. Static settlement resulting from the anticipated foundation loads should be minimal provided that the recommendations included in this report are considered in foundation design and construction. The estimated ultimate static settlement is calculated to be approximately 1 inch when using the recommended bearing pressures. As a practical matter, differential settlement between footings can be assumed as one-half of the total settlement.
- VIII. <u>Subsidence</u>. Land subsidence can occur in valleys where aquifer systems have been subjected to extensive groundwater pumping, such that groundwater pumping exceeds groundwater recharge. Generally, pore water reduction can result in a rearrangement of skeletal grains and could result in elastic (recoverable) or inelastic (unrecoverable) deformation of an aquifer system.
 - Locally, no fissures or other surficial evidence of subsidence were observed at or near the subject site. Because the site is underlain by bedrock, the potential for subsidence is considered "negligible".
- IX. <u>Debris Flows</u>. Debris flows are viscous flows consisting of poorly sorted mixtures of sediment and water and are generally initiated on slopes steeper than approximately six horizontal to one vertical (6H:1V) (Boggs, 2001). Based on the flat nature of the site and the composition of the surface soil, we judge that risks associated with debris flows should be considered remote.

X. <u>Flooding and Erosion.</u> No signs of flooding or erosion were observed during our field investigation. Risks associated with flooding and erosion should be evaluated and mitigated by the project design Civil Engineer.

CONCLUSIONS

Based on the results of our investigation, it is our professional opinion that the project should be feasible from a geotechnical perspective provided that the recommendations of this report are incorporated into design and carried out through construction. The main geotechnical concern in the construction of the proposed project is the presence of loose near surface soil and shallow seated bedrock that will likely be encountered during site grading and foundation construction.

Remedial grading including over-excavation or re-compaction is recommended for the building area. We recommend that remedial grading include over-excavation and recompaction of the weathered surface soil and bedrock in order to mitigate potential cut/fill transition related differential settlement of slab on grade foundation systems. Specific recommendations for site preparation are presented in the Earthwork and Grading section of this report.

Caving did occur to varying degrees within each of our exploratory boreholes and the surface soil may be susceptible to caving within deeper excavations. All excavations should be constructed in accordance with the normal CalOSHA excavation criteria. On the basis of our observations of the materials encountered, we anticipate that the subsoil will conform to that described by CalOSHA as Type B or C dependent upon location and bedrock conditions. Soil conditions should be verified in the field by a "Competent person" employed by the Contractor.

The following recommendations present more detailed design criteria that have been developed on the basis of our field and laboratory investigation.

EARTHWORK AND GRADING

In order to mitigate potential cut/fill transition related differential settlements, over-excavation of the primary foundation bearing soil and bedrock is recommended. All loose surface soil and bedrock should be removed to a minimum depth at least 3 feet below existing grade or 2 feet below the bottom of the footings, whichever is deeper. Specialized grading equipment may be necessary to accomplish bedrock removals in elevated areas. The removal areas should be backfilled with compacted engineered fill soil. The exposed surface should be compacted so that a minimum of 90 percent relative compaction is attained prior to fill placement. Any fill or backfill material should be placed in thin lifts at near optimum moisture content and compacted to at least 90 percent relative compaction.

All earthwork including excavation, backfill and preparation of the subgrade soil, should be performed in accordance with the geotechnical recommendations presented in this report and portions of the local regulatory requirements, as applicable. All earthwork should be performed under the observation and testing of a qualified soil engineer. The following geotechnical engineering recommendations for the proposed project are based on observations from the field investigation program, laboratory testing and geotechnical engineering analysis.

a. <u>Stripping</u>. Areas to be graded should be cleared of any existing vegetation, associated root systems, and debris. All areas scheduled to receive fill should be cleared of old fills and any irreducible matter. The strippings should be removed off site, or stockpiled for later use in landscape areas. Voids left by obstructions should be properly backfilled in accordance with the compaction recommendations of this report.

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- b. Preparation of the Building Areas. In order to achieve firm and uniform foundation bearing conditions, we recommend over-excavation and re-compaction throughout the building areas. All native low density near surface soil should be removed to a depth of at least 3 feet below existing grade or 2 feet below the bottom of the footings, whichever is deeper. Remedial grading should extend laterally, a minimum of five feet beyond the building perimeter. The soil exposed during the over-excavation should then be scarified, moisture conditioned to within two percent of optimum moisture content, and compacted to at least 90 percent relative compaction. Testing of the native soil within the excavation bottoms should be performed during grading to verify adequacy.
- c. <u>Compaction</u>. Soil to be used as engineered fill should be free of organic material, debris, and oversized material, and should not contain rocks or cobbles greater than eight inches in maximum dimension. All fill materials should be placed in thin lifts, not exceeding six inches in a loose condition. If import fill is required, the material should be of a low to non-expansive nature and should meet the following criteria:

Plastic Index Less than 12 Liquid Limit Less than 35

Percent Soil Passing #200 Sieve Between 15% and 35%

Maximum Aggregate Size 3 inches

The subgrade and all fills should be compacted with acceptable compaction equipment, to at least 90 percent relative compaction. The bottom of the exposed subgrade should be observed by a representative of Sladden Engineering prior to fill placement. Compaction testing should be performed on all lifts in order to ensure proper placement of the fill materials. Table 2 provides a summary of the excavation and compaction recommendations.

TABLE 2
SUMMARY OF RECOMMENDATIONS

*Remedial Grading	Excavation and recompaction within the building envelope and			
	extending laterally for 5 feet beyond the building limits and to			
	a minimum of 3 feet below existing grade or 2 feet below the			
	bottom of the footings, whichever is deeper.			
Native / Import Engineered Fill	Place in thin lifts not exceeding 6 inches in a loose condition,			
	compact to a minimum of 90 percent relative compaction			
	within 2 percent of the optimum moisture content.			
Pavement Areas and Concrete	Compact the top 12 inches to at least 95 percent compaction			
Flatwork	within 2 percent of optimum moisture content.			

^{*}Actual depth may vary and should be determined by a representative of Sladden Engineering in the field during construction.

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d. <u>Shrinkage and Subsidence</u>. Volumetric shrinkage of the material that is excavated and replaced as controlled compacted fill should be anticipated. We estimate that this shrinkage should be less than 15 percent. Subsidence of the surfaces that are scarified and compacted should be between 1 and 2 tenths of a foot. This will vary depending upon the type of equipment used, the moisture content of the soil at the time of grading and the actual degree of compaction attained

CONVENTIONAL SHALLOW SPREAD FOOTINGS

Load bearing walls may be supported on continuous spread footings and interior columns may be supported on isolated pad footings. All footings should be founded upon properly engineered fill soil and should have a minimum embedment depth of 12 inches measured from the lowest adjacent finished grade. Continuous and isolated footings should have minimum widths of 12 inches and 24 inches, respectively. Continuous and isolated footings placed on compact engineered fill soil may be designed using allowable bearing pressures of 1800 and 2000 pounds per square foot (psf), respectively. Allowable increases of 250 psf for each additional 1 foot in width and 250 psf for each additional 6 inches in depth may be utilized, if desired. The maximum allowable bearing pressure should be 2,500 psf.

The allowable bearing pressure may be increased by one-third when considering transient live loads, including seismic and wind forces. All footings should be reinforced in accordance with the project structural engineer's recommendations.

Based on the allowable bearing pressures recommended above, total settlement of the shallow footings are anticipated to be less than one-inch provided that foundation preparation conforms to the recommendations described in this report. Differential settlement is anticipated to be approximately half the total settlement for similarly loaded footings spaced up to approximately 40 feet apart.

Lateral load resistance for the spread footings will be developed by passive soil pressure against the sides of the footings below grade and by friction acting at the base of the concrete footings bearing on compacted fill. An allowable passive pressure of 300 psf per foot of depth may be used for design purposes. An allowable coefficient of friction 0.45 may be used for dead and sustained live loads to compute the frictional resistance of the footing placed directly on compacted fill. Under seismic and wind loading conditions, the passive pressure and frictional resistance may be increased by one-third.

All footing excavations should be observed by a representative of the project geotechnical consultant to verify adequate embedment depths prior to placement of forms, steel reinforcement or concrete. The excavations should be trimmed neat, level and square. All loose, disturbed, sloughed or moisture-softened soils and/or any construction debris should be removed prior to concrete placement. Excavated soil generated from footing and/or utility trenches should not be stockpiled within the building envelope or in areas of exterior concrete flatwork.

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SLABS-ON-GRADE

In order to provide uniform and adequate support, concrete slabs-on-grade must be placed on properly compacted engineered fill soil as outlined in the previous sections of this report. The slab subgrade should remain near optimum moisture content and should not be permitted to dry prior to concrete placement. Slab subgrades should be firm and unyielding. Disturbed soil should be removed and replaced with engineered fill soil compacted to a minimum of 90 percent relative compaction.

Slab thickness and reinforcement should be determined by the structural engineer. All slab reinforcement should be supported on concrete chairs to ensure that reinforcement is placed at slab mid-height. Considering the expected uses, we recommend a minimum slab thickness of 6.0 inches within warehouse areas and 5.0 inches within office areas.

Slabs with moisture sensitive surfaces should be underlain with a moisture vapor retarder consisting of a polyvinyl chloride membrane such as 10-mil visqueen, or equivalent. All laps within the membrane should be sealed and at least 2 inches of clean sand should be placed over the membrane to promote uniform curing of the concrete. To reduce the potential for punctures, the membrane should be placed on a pad surface that has been graded smooth without any sharp protrusions. If a smooth surface can not be achieved by grading, consideration should be given to placing a 1-inch thick leveling course of sand across the pad surface prior to placement of the membrane.

PRELIMINARY PAVEMENT DESIGN

Asphalt concrete pavements should be designed in accordance with Topic 608 of the Caltrans Highway Design Manual based on R-Value and Traffic Index. We assumed a preliminary R-Value of 70. On-site and any imported soils should be tested for R-Value after grading. Actual R-Value of subgrade soil should be consistent with the pavement design. For Pavement design, a Traffic Index (TI) of 5.0 was used. We assumed Asphalt Concrete (AC) over Class II Aggregate Base (AB). The preliminary flexible pavement design is as follows:

RECOMMENDED ASPHALT PAVEMENT SECTION LAYER THICKNESS								
Payrament Matarial	Recommended Thickness							
Pavement Material	TI = 5.0							
Asphalt Concrete Surface Course	3.0 inches							
Class II Aggregate Base Course	4.0 inches							
Compacted Subgrade Soil	12.0 inches							

Asphalt concrete should conform to Sections 203 and 302 of the latest edition of the Standard Specifications for Public Works Construction ("Greenbook"). Class II aggregate base should conform to Section 26 of the Caltrans Standard Specifications, latest edition. The aggregate base course should be compacted to at least 95 percent of the maximum dry density as determined by ASTM Test Method D 1557.

CORROSION SERIES

The soluble sulfate concentrations of the surface soil were determined to be 140 and 120 parts per million (ppm). The soil is considered to have a "low" corrosion potential with respect to concrete. The use of Type V cement and special sulfate resistant concrete mixes should not be necessary. Soluble sulfate content of the surface soil should be reevaluated after grading and appropriate concrete mix designs should be established based upon post-grading test results.

The pH levels of the surface soil was determined to be 8.0 and 7.9. Based on soluble chloride concentration testing (50 & 80 ppm) the soil is considered to have a "low" corrosion potential with respect to normal grade steel. The minimum resistivity of the surface soil was found to be 4300 and 1500 ohm-cm, which suggests the site soil is considered to have "moderate" corrosion potential with respect to ferrous metal installations. A corrosion expert should be consulted regarding appropriate corrosion protection measures.

UTILITY TRENCH BACKFILL

All utility trench backfill should be compacted to a minimum relative compaction of 90 percent. Trench backfill materials should be placed in lifts no greater than six inches in a loose condition, moisture conditioned (or air-dried) as necessary to achieve near optimum moisture condition and mechanically compacted in place to a minimum relative compaction of 90 percent. A representative of the project soil engineer should test the backfill to verify adequate compaction.

EXTERIOR CONCRETE FLATWORK

To minimize cracking of concrete flatwork, the subgrade soil below concrete flatwork areas should first be compacted to a minimum relative compaction of 90 percent. A representative of the project geotechnical consultant should observe and verify the density and moisture content of the soil prior to concrete placement.

DRAINAGE

All final grades should be provided with positive gradients away from foundations to provide rapid removal of surface water runoff to an adequate discharge point. No water should be allowed to be pond on or immediately adjacent to foundation elements. In order to reduce water infiltration into the subgrade soil, surface water should be directed away from building foundations to an adequate discharge point. Subgrade drainage should be evaluated upon completion of the precise grading plans and in the field during grading.

LIMITATIONS

The findings and recommendations presented in this report are based upon an interpolation of the soil conditions between the exploratory trench locations and extrapolation of these conditions throughout the proposed building area. Should conditions encountered during grading appear different than those indicated in this report, this office should be notified.

The use of this report by other parties or for other projects is not authorized. The recommendations of this report are contingent upon monitoring of the grading operation by a representative of Sladden Engineering. All recommendations are considered to be tentative pending our review of the grading operation and additional testing, if indicated. If others are employed to perform any soil testing, this office should be notified prior to such testing in order to coordinate any required site visits by our representative and to assure indemnification of Sladden Engineering.

We recommend that a pre-job conference be held on the site prior to the initiation of site grading. The purpose of this meeting will be to assure a complete understanding of the recommendations presented in this report as they apply to the actual grading performed.

ADDITIONAL SERVICES

Once completed, final project plans and specifications should be reviewed by use prior to construction to confirm that the full intent of the recommendations presented herein have been applied to design and construction. Following review of plans and specifications, observation should be performed by the Soil Engineer during construction to document that foundation elements are founded on/or penetrate into the recommended soil, and that suitable backfill soil is placed upon competent materials and properly compacted at the recommended moisture content.

Tests and observations should be performed during grading by the Soil Engineer or his representative in order to verify that the grading is being performed in accordance with the project specifications. Field density testing shall be performed in accordance with acceptable ASTM test methods. The minimum acceptable degree of compaction should be 90 percent for engineered fill soil and 95 percent for Class II aggregate base as obtained by ASTM Test Method D1557. Where testing indicates insufficient density, additional compactive effort shall be applied until retesting indicates satisfactory compaction.

REFERENCES

- Blake, T., 2000, EQFAULT and EQSEARCH, Computer Programs for Deterministic and Probabilistic Prediction of Peak Horizontal Acceleration from Digitized California Faults.
- California Building Code (CBC), 2016, California Building Standards Commission.
- California Department of Conservation (CDOC), 2018, Regulatory Maps available at: http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps
- Cao T., Bryant, W.A., Rowshandel B., Branum D., Wills C.J., 2003, "The Revised 2002 California Probabilistic Seismic Hazard Maps".
- GoogleEarth.com, 2018, Vertical Aerial Photograph for the Anza area, California, Undated, Variable Scale.
- Jennings, Charles W. (Compiler), 1994, Fault Activity Map of California and Adjacent Areas, California Division of Mines and Geology, Geologic Data Map No. 6
- Southern California Earthquake Data Center (SCEDC), 2018, Significant Earthquakes and Faults; available at: http://scedc.caltech.edu/significant/earthquake.html
- Riverside County Parcel Report (RCPR), 2018, available at http://mmc.rivcoit.org/MMC_Public/Custom/disclaimer/Default.htm
- Rogers T.H (compiler), Jenkins, O.P (edition), 1965, Geologic Map of California, Santa Ana Sheet, sixth printing 1992, California Division of Mines and Geology, 1: 250,000.
- United States Geological Survey (USGS), 2015, Cahuilla Mountain 7.5 Minute Quadrangle Map, 1:24000.
- United State Geological Survey (USGS), 2018a, U.S. Seismic Design Maps; available at: http://earthquake.usgs.gov/designmaps/us/application.php
- United States Geological Survey (USGS), 2018b, Unified Hazard Tool; available at: https://geohazards.usgs.gov/hazards/interactive/

FIGURES

SITE LOCATION MAP REGIONAL GEOLOGIC MAP BOREHOLE LOCATION PHOTOGRAPH SITE PLAN





SITE LOCATION MAP

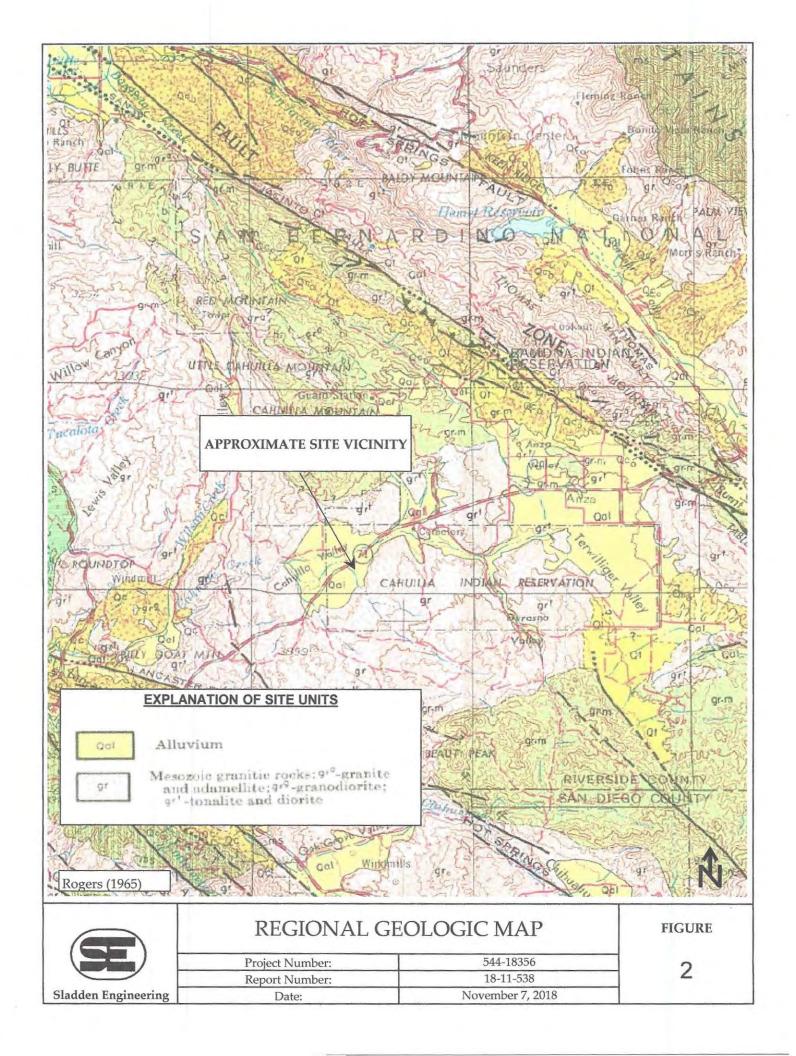
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 544-18356

 Report Number:
 18-11-538

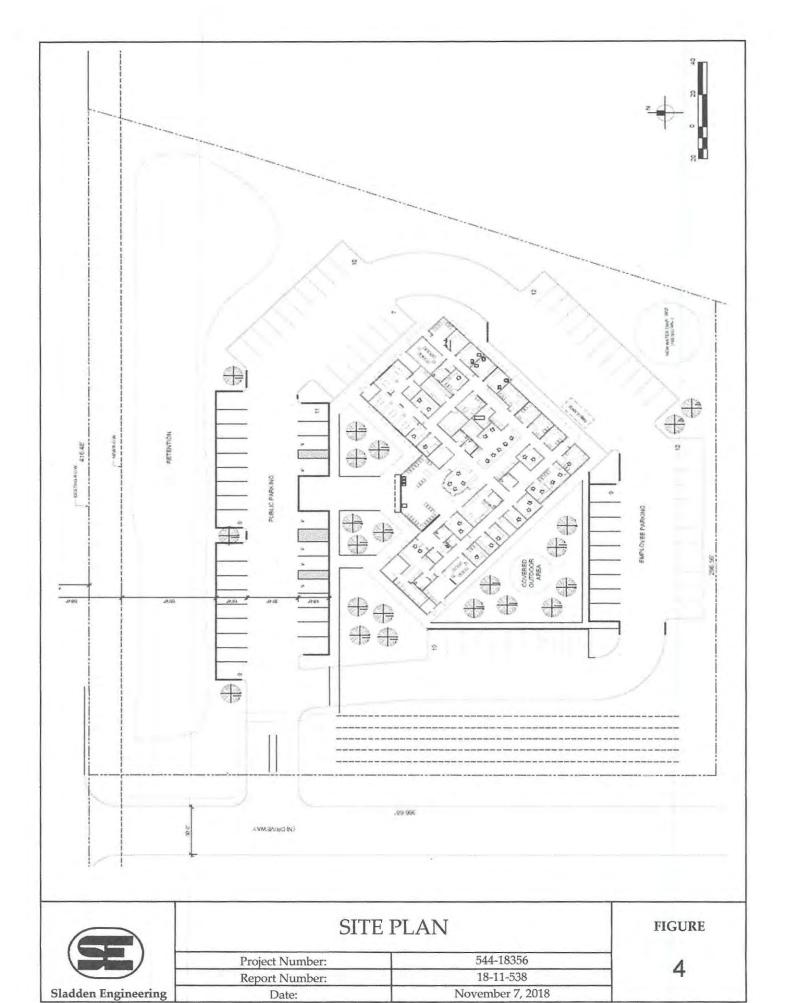
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FIGURE

1







APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

For our field investigation, ten (10) exploratory bores were excavated on October 10, 2018 utilizing a truck mounted drill-rig (Mobile B-61) equipped with 8-inch outside diameter (O.D.) hollow stem augers. Continuous logs of the materials encountered were made by a representative of Sladden Engineering. Materials encountered in the boreholes were classified in accordance with the Unified Soil Classification System that is presented in this appendix.

Representative undisturbed samples were obtained within our bores by driving a thin-walled steel penetration sampler (California split spoon sampler) or a Standard Penetration Test (SPT) sampler with a 140 pound automatic-trip hammer dropping approximately 30 inches (ASTM D1586). The number of blows required to drive the samplers 18 inches was recorded in 6-inch increments and blowcounts are indicated on the boring logs.

The California samplers are 3.0 inches in diameter, carrying brass sample rings having inner diameters of 2.5 inches. The standard penetration samplers are 2.0 inches in diameter with an inner diameter of 1.5 inches. Undisturbed samples were removed from the sampler and placed in moisture sealed containers in order to preserve the natural soil moisture content. Bulk samples were obtained from the excavation spoils and samples were then transported to our laboratory for further observations and testing.

UNIFIED SOIL CLASSIFICATION SYSTEM

		MAJOR DIVISIO	NS	TYPICAL NAMES			
	νE	GRAVELS	CLEAN GRAVELS WITH	GW	WELL GRADED GRAVEL-SAND MIXTURES		
	200 SIE	CILAV DELA	LITTLE OR NO FINES	GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES		
OILS	IAN No.	MORE THAN HALF COARSE FRACTION IS LARGER THAN №.4 SIEVE	GRAVELS WITH OVER	GM	SILTY GRAVELS, POORLY-GRADED GRAVEL- SAND-SILT MIXTURES		
VINED S	RGER TI	SIZE	12% FINES	GC	CLAYEY GRAVELS, POORLY GRADED GRAVELSAND-CLAY MIXTURES		
COARSE GRAINED SOILS	MORE THAN HALF IS LARGER THAN No.200 SIEVE	SANDS	CLEAN SANDS WITH	sw	WELL GRADED SANDS, GRAVELLY SANDS		
COAI	AN HAL	SANUS	LITTLE OR NO FINES	SP	POORLY GRADED SANDS, GRAVELLY SANDS		
	ORE TH	MORE THAN HALF COARSE FRACTION IS SMALLER THAN No.4 SIEVE SIZE	SANDS WITH OVER 12%	SM	SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES		
	M		FINES	sc	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES		
No 900	100.200			ML	INORGANIC SILTS & VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY		
FINE GRAINED SOILS MORE THAN HALP IS SMALLER THAN No 200	en inaiv	SILTS AND LIQUID LIMIT LI		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, CLEAN CLAYS		
INED SC	SIEVE			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY		
FINE GRAINED SOILS				MH	INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS		
E THAN	a lina	SILTS AND CLAYS: LIQUID 50	LIMIT GREATER THAN	СН	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS		
MOR	TO .			ОН	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS		
		HIGHLY ORGANIC SO	OILS	Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS		

EXPLANATION OF BORE LOG SYMBOLS

California Split-spoon Sample
Unrecovered Sample

Standard Penetration Test Sample



Note: The stratification lines on the borelogs represent the approximate boundaries between the soil types; the transitions may be gradual.

_	SLADDEN ENGINEERING							BORE LOG					
	SL/	ADD	EN	EN	GIN	EERIN	IG		Drill Rig:	Mobile B-61	Date Drilled:		0/2018
-		1	ہا		<u> </u>		1		Elevation:	3490 Ft (MSL)	Boring No:	В.	H-1
Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology			scription		
							_ 2 -		Weeds/Gra Silty Sand (n, dry, fine-grained (Qal).	
	23/34/44			11.7	3.2			/#	Bedrock (C	ranitoid): moderatel	y hard, moderately st	rong his	rhly
奏	25/50-6"			17.0	4.9		- 6 -		weathered;	readily breaks down	n to SM soil type (gr).	iong, m	
							- 8 10 14 16		Bedrock En	at ~6.0 Feet bgs. countered at ~2.0 Feet water or Seepage En			
							- 50						
Comp	letion Notes	s:									ANZA CALIFORNI		
								}	Project No:	544-18356	, ANZA, CALIFORNI		
									Report No:	18-11-538		- Page	1

								BORE LOG					
	SLADDEN ENGINEERING						1G		Drill Rig:	Mobile B-61	Date Drilled:		10/2018
		T	T	1	1	<u> </u>	7		Elevation:	3490 Ft (MSL)	Boring No:	E	BH-2
Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology		De	scription		
						, .			Weeds/Gra	ss/Debris			
	7/7/11			52.9	4.4	96.8	- 2 - 4 -		Sandy Silt	(ML); yellowish brow	vn, dry, stiff, low plas	ticity (Ç	⊋al).
	6/8/9			51.8	5.2		- 6 - - 8 -		Sandy Silt disturbed s		vn, dry, stiff, low plas	ticity (C	(al);
	7/7/14			12.2	2.7		- 10 - 10		Silty Sand (Qal).	(SM); yellowish brow	n, dry, medium dens	e, fine-g	rained
	24250 49						- 12 - - 14 -					"	
	34/50-4"						- 16 -		No Recove	ry.			
			į				- 18 -		Bedrock En	l at -16.0 Feet bgs. countered at -12.0 Fe lwater or Seepage En			
							20						
	į						- 22 -						
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								BORE LOG					
	SLADDEN ENGINEERING								Drill Rig: Mobile B-61 Date Drilled: 10/10/2018				
	····	1	1	1	1	1	1	, — —	Elevation: 3490 Ft (MSL) Boring No: BH-3/P-1				
Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology	Description				
									Weeds/Grass/Debris				
	3/5/7			43.0	3.2	89.9	2 -		Silty Sand (SM); yellowish brown to olive brown, dry, loose, fine-grained (Qal).				
	7/9/14			34.7	3.4	108.7	- 6 -		Silty Sand (SM); yellowish brown to olive brown, dry, medium dense, fine-grained (Qal).				
	6/8/11			19.0	5.7		- 10 - - 10 - - 12 -		Silty Sand (SM); olive brown, moist, medium dense, fine-grained (Qal).				
	26/50-5"			16.9	5.3		- 14 - - 16 -		Bedrock (Granitoid); moderately hard, moderately strong, highly weathered; readily breaks down to SM soil type (gr).				
							- 18 - - 20 - - 22 - - 22 - - 24 -		Terminated at ~16.0 Feet bgs. Bedrock Encountered at ~12.0 Feet bgs. No Groundwater or Seepage Encountered. Cased for Percolation Testing				
							- 26 - - 28 - - 30 - - 32 -						
							- 34 - - 36 - 						
							- 38 - 40 - - 42 -						
							- 42 - - 44 - - 46 -						
						-	- 48 - - 50 -						
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								BORE LOG				
SLADDEN ENGINEERING									Drill Rig: Mobile B-61 Date Drilled: 10/10/2018			
									Elevation: 3490 Ft (MSL) Boring No: BH-4			
Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology	Description			
					-				Weeds/Grass/Debris			
	6/7/8			19.9	3.9	115.6	- 2 4		Sandy Silt (ML); yellowish brown, dry, low plasticity (Qal). Silty Sand (SM); yellowish brown, dry, loose, fine-grained (Qal).			
							 - 8 -		H			
	50-6"			5.3	3.2	118.5	- 10 -		Bedrock (Granitoid); moderately hard, moderately strong, highly weathered; readily breaks down to SM soil type (gr).			
	50-6"			5.3		118.5	- 12 14 16 18 20 26 28 30		Terminated at ~10.5 Feet bgs. Bedrock Encountered at ~8.0 Feet bgs. No Groundwater or Seepage Encountered.			
							- 32 - - 34 - - 36 - - 38 - - 40 - - 42 - - 44 - - 44 - - 46 - - 48 - - 48 -					
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	SLADDEN ENGINEERING								BORE LOG					
	SL/	ADD	EN	EN	GIN	EERIN	/G		Drill Rig:	Mobile B-61	Date Drilled		0/2018	
			1			1	Τ		Elevation:	3490 Ft (MSL)	Boring No:	BH	·5/P-2	
Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology		E	escription			
-							 _		Weeds/Gra	ss/Debris				
							- 2 4		Silty Sand (SM); yellowish bro	wn, dry, fine-grain	ed (Qal).		
							- 6 - - 8 - - 10 -		No Bedrock No Ground	at ~5.0 Feet bgs. Encountered. water or Seepage F ercolation Testing	incountered.			
							12 -							
							- 14 - - 16 -							
							- 18 -							
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	SLADDEN ENGINEERING							BORE LOG						
	SL/	ADD	EN	EN	GINI	EERIN	4G		Drill Rig:	Mobile B-61	Date Drilled:		0/2018	
-		T	1		1	1	1		Elevation:	3490 Ft (MSL)	Boring No:	ВН	-6/P-3	
Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology		Des	scription			
									Weeds/Gra	ss/Debris				
							- 2 - 4 - 		Silty Sand (SM); yellowish brow	n, dry, fine-grained (Qal).		
							- 6 - - 8 - - 10 -		No Bedrock No Ground	l at ~5.0 Feet bgs. Encountered. water or Seepage En ercolation Testing	countered.			
							- 12 - - 14 - 							
							- 16 - - 18 - - 20 -							
							- 22 - - 24 -							
							- 26 - - 28 - 							
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/=	SLADDEN ENGINEERING							BORE LOG					
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Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology		De	scription		
									Weeds/Gras	ss/Debris			
							- 2 - - 4 - - 4 -		Silty Sand (SM); yellowish brow	rn, dry, fine-grained (ζ	Qal).	
							- 6 - - 8 -		No Bedrock No Ground	at ~5.0 Feet bgs. Encountered. water or Seepage En ercolation Testing	countered.		
							- 10 - - 12 - - 14 -						
							- 14 - - 16 - - 18 -						
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Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology			cription		
									Weeds/Gra	ss/Debris			
							- 2 - - 4 - - 6 - - 8 -		Silty Sand (SM); yellowish browr	n, dry, fine-grained (Qal).	
							- 10 - 12 - 14 -		No Bedrock No Ground	at ~10.0 Feet bgs. Encountered. water or Seepage Enc ercolation Testing	ountered.		
							- 16 - - 18 - - 20 -			recondition results			
							- 22 - - 24 -						
							- 26 - - 28 - 28 -						
							- 30 - - 32 - 						
							- 34 - - 36 - 						
		***************************************					- 38 - 40 - - 42 -						
							- 44 - - 44 - - 46 -						
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Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology		De	scription		
									Weeds/Gra	ss/Debris			
							- 2 - - 4 - - 6 - - 8 -		Silty Sand (SM); yellowish brow	vn, dry, fine-grained (Qal).	
							- 10 - - 12 - - 14 -		No Bedrock No Ground	at ~10.0 Feet bgs. Encountered. water or Seepage En ercolation Testing	countered.		
							- 16 - - 18 - - 20 -		Cased for P	ercolation Testing			
				:			- 22 - - 24 - - 26 -						
							- 28 - - 30 - - 32 -						·
						777	- 34 - - 36 - - 38 -						
							- 40 - - 42 - 44 -						
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Description									BORE LOG						
Description Description		SL /	\DD	EN	EN	GIN	EERIN	1G							
Weeds/Grass/Debris Silly Sand (SM); yellowish brown, dry, fine-grained (Qal).		<u> </u>		<u>ر</u>						elevation:	3490 Ft (MSL)	Boring No:	BH	-10/P-7	
Silty Sand (SM); yellowish brown, dry, fine-grained (Qal).	Sample	Blow Counts	Bulk Sample	Expansion Inde	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Litholo		Des	cription			
Silly Sand (SM); yellowish brown, dry, fine-grained (Qal). 16										Weeds/Gra	ss/Debris				
Sempletion Notes:										Silty Sand	(SM); yellowish brown	n, dry, fine-grained (Qal).		
- 14								- 8 - - 8 - - 10 -		No Bedrocl No Ground	k Encountered. Iwater or Seepage Enc	ountered.			
- 20							į	- 14 - 							
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APPENDIX B

LABORATORY TESTING

APPENDIX B

LABORATORY TESTING

Representative bulk and relatively undisturbed soil samples were obtained in the field and returned to our laboratory for additional observations and testing. Laboratory testing was generally performed in two phases. The first phase consisted of testing in order to determine the compaction of the existing natural soil and the general engineering classifications of the soils underlying the site. This testing was performed in order to estimate the engineering characteristics of the soil and to serve as a basis for selecting samples for the second phase of testing. The second phase consisted of soil mechanics testing. This testing including consolidation, shear strength and expansion testing was performed in order to provide a means of developing specific design recommendations based on the mechanical properties of the soil.

CLASSIFICATION AND COMPACTION TESTING

Unit Weight and Moisture Content Determinations: Each undisturbed sample was weighed and measured in order to determine its unit weight. A small portion of each sample was then subjected to testing in order to determine its moisture content. This was used in order to determine the dry density of the soil in its natural condition. The results of this testing are shown on the Boring Logs.

Maximum Density-Optimum Moisture Determinations: Representative soil types were selected for maximum density determinations. This testing was performed in accordance with the ASTM Standard D1557-91, Test Method A. Graphic representations of the results of this testing are presented in this appendix. The maximum densities are compared to the field densities of the soil in order to determine the existing relative compaction to the soil.

Classification Testing: Soil samples were selected for classification testing. This testing consists of mechanical grain size analyses. This provides information for developing classifications for the soil in accordance with the Unified Soil Classification System which is presented in the preceding appendix. This classification system categorizes the soil into groups having similar engineering characteristics. The results of this testing is very useful in detecting variations in the soil and in selecting samples for further testing.

SOIL MECHANIC'S TESTING

Expansion Testing: Two (2) bulk samples were selected for Expansion testing. Expansion testing was performed in accordance with the UBC Standard 18-2. This testing consists of remolding 4-inch diameter by 1-inch thick test specimens to a moisture content and dry density corresponding to approximately 50 percent saturation. The samples are subjected to a surcharge of 144 pounds per square foot and allowed to reach equilibrium. At that point the specimens are inundated with distilled water. The linear expansion is then measured until complete.

Direct Shear Testing: Two (2) bulk samples were selected for Direct Shear testing. This test measures the shear strength of the soil under various normal pressures and is used to develop parameters for foundation design and lateral design. Tests were performed using a recompacted test specimen that was saturated prior to tests. Tests were performed using a strain controlled test apparatus with normal pressures ranging from 800 to 2300 pounds per square foot.

Consolidation: Two samples were selected for consolidation testing. For this test, a one-inch thick test specimen was subjected to vertical loads varying from 575 psf to 11520 psf applied progressively. The consolidation at each load increment was recorded prior to placement of each subsequent load.

Corrosion Series Testing: The soluble sulfate concentrations of the surface soil were determined in accordance with California Test Method Number (CA) 417. The pH and Minimum Resistivity were determined in accordance with CA 643. The soluble chloride concentrations were determined in accordance with CA 422.



Maximum Density/Optimum Moisture

ASTM D698/D1557

Project Number:

544-18356

November 6, 2018

Project Name:

Cahuilla Indian Health Center

Lab ID Number:

LN6-18461

ASTM D-1557 A

Sample Location:

BH-1 Bulk 1 @ 0-5'

Rammer Type: Machine

Description:

Brown Silty Sand (SM)

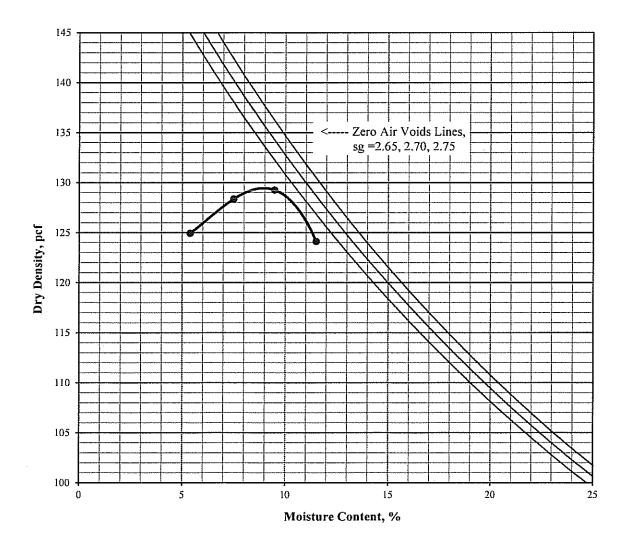
Maximum Density:

129.5 pcf

Optimum Moisture:

9%

Sieve Size	% Retained
 3/4"	
3/8"	
#4	2.4





Maximum Density/Optimum Moisture

ASTM D698/D1557

Project Number:

544-18356

November 6, 2018

Project Name:

Cahuilla Indian Health Center

Lab ID Number:

LN6-18461

ASTM D-1557 A

Sample Location:

BH-2 Bulk 2 @ 0-5'

Rammer Type: Machine

Description:

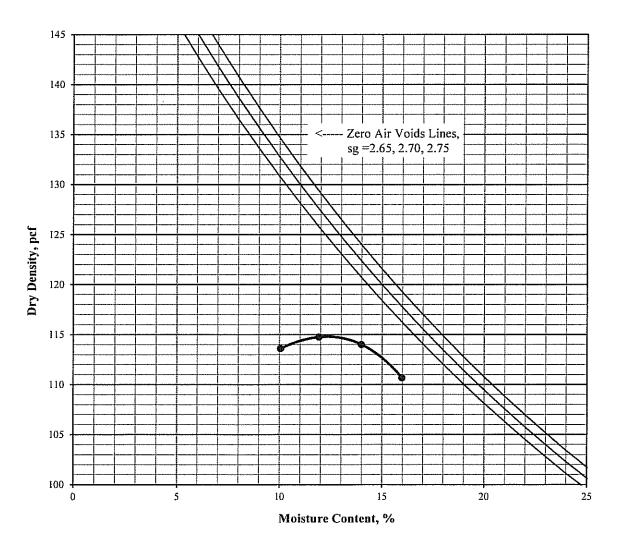
Dark Brown Sandy Silt (ML)

Maximum Density:

115 pcf

13% **Optimum Moisture:**

Sieve Size	% Retained
3/4"	
3/8"	
#4	0.1





Direct Shear ASTM D 3080-04

(modified for unconsolidated condition)

Job Number:

544-18356

November 6, 2018

Job Name

Cahuilla Indian Health Center

Initial Dry Density: 116.8 pcf

Lab ID No.

LN6-18461

Initial Mosture Content: 9.0 %

Sample ID

BH-1 Bulk 1 @ 0-5'

Peak Friction Angle (Ø): 30°

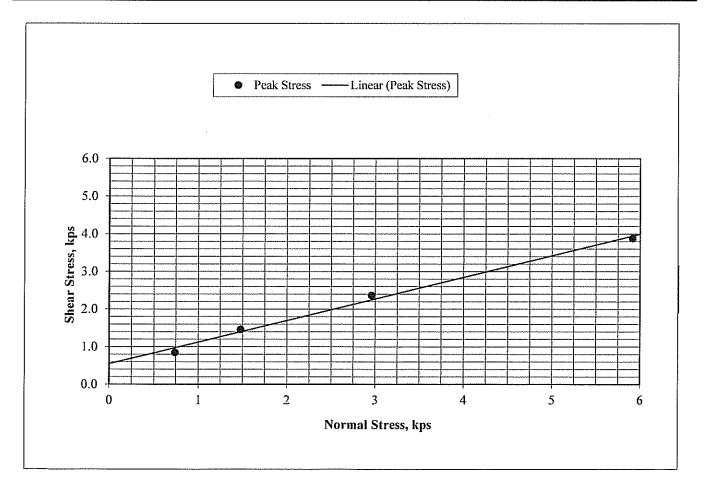
Classification

Brown Silty Sand (SM)

Cohesion (c): 540 psf

Sample Type Remolded @ 90% of Maximum Density

Test Results	1	2	3	4	Average
Moisture Content, %	15.0	15.0	15.0	15.0	15.0
Saturation, %	91.4	91.4	91.4	91.4	91.4
Normal Stress, kps	0.739	1.479	2.958	5.916	
Peak Stress, kps	0.845	1.458	2.366	3.882	





Direct Shear ASTM D 3080-04

(modified for unconsolidated condition)

Job Number:

544-18356

November 6, 2018

Job Name

Cahuilla Indian Health Center

Initial Dry Density: 103.4 pcf

Lab ID No.

LN6-18461

Initial Mosture Content: 12.9 %

Sample ID

BH-2 Bulk 2 @ 0-5'

Peak Friction Angle (Ø): 29°

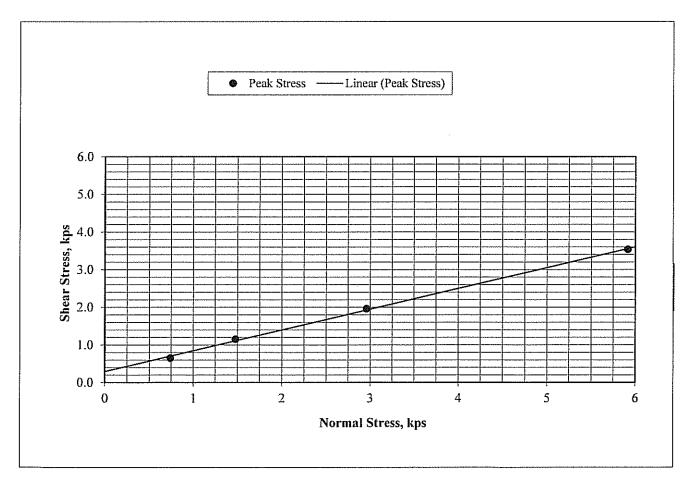
Classification

Dark Brown Sandy Silt (ML)

Cohesion (c): 300 psf

Sample Type Remolded @ 90% of Maximum Density

Test Results	1	2	3	4	Average
Moisture Content, %	22.4	22.4	22.4	22.4	22.4
Saturation, %	96.1	96.1	96.1	96.1	96.1
Normal Stress, kps	0.739	1.479	2.958	5.916	
Peak Stress, kps	0.649	1.150	1.959	3.534	



Expansion Index

ASTM D 4829

T 1	3. T	1
.lot	11 N 1	mber:

544-18356

November 6, 2018

Job Name:

Cahuilla Indian Health Center

Lab ID Number:

LN6-18461

Sample ID:

BH-1 Bulk 1 @ 0-5'

Soil Description:

Brown Silty Sand (SM)

Wt of Soil + Ring:	589.3
Weight of Ring:	192.1
Wt of Wet Soil:	397.2
Percent Moisture:	7.6%
Sample Height, in	0.95
Wet Density, pcf:	127.1
Dry Denstiy, pcf:	118.1

% Saturation:	48.1

Expansion	Rack # 1

Date/Time	11/2/2018	1:05 PM	
Initial Reading	0.0000		
Final Reading	0.0	102	

177	
Expansion Index	10
_	

(Final - Initial) x 1000



Expansion Index

ASTM D 4829

T 1	3.T 1	
Inh	Number	
J V V		

544-18356

November 6, 2018

Job Name:

Cahuilla Indian Health Center

Lab ID Number:

LN6-18461

Sample ID:

BH-2 Bulk 2 @ 0-5'

Soil Description:

Dark Brown Sandy Silt (ML)

Wt of Soil + Ring:	551.8
Weight of Ring:	194.9
Wt of Wet Soil:	356.9
Percent Moisture:	11.6%
Sample Height, in	0.95
Wet Density, pcf:	114.2
Dry Denstiy, pcf:	102.3

% Saturation:	48.4
% Saturation:	48.4

Expansion Rack # 4

Date/Time	11/2/2018	1:35 PM
Initial Reading	0.0000	
Final Reading	0.0	447

(Final - Initial) x 1000

Job Number:

544-18356

Job Name:

Cahuilla Indian Health Center

Date:

11/6/2018

Moisture Adjustment		Remolded Shear Weight	
Wt of Soil:	1,000	Max Dry Density:	129.5
Moist As Is:	3.5	Optimum Moisture:	9.0
Moist Wanted:	9.0		

ml of Water to Add:

53.1

Wt Soil per Ring, g:

152.8

UBC



Gradation

ASTM C117 & C136

Project Number: 544-18356

November 6, 2018

Project Name:

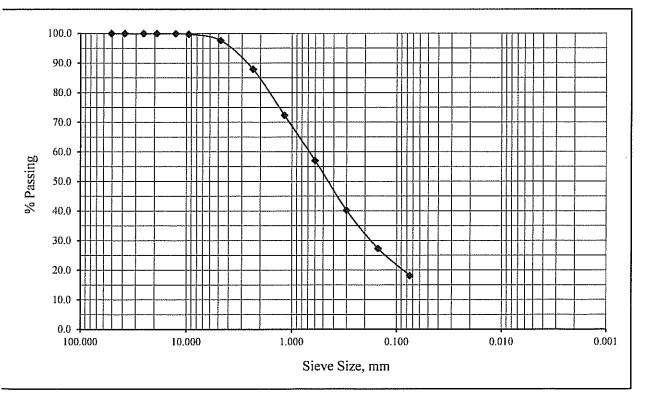
Cahuilla Indian Health Center

Lab ID Number: LN6-18461

Sample ID:

BH-1 Bulk-1 @ 0-5'

Sieve	Sieve	Percent
Size, in	Size, mm	Passing
2"	50.8	100.0
1 1/2"	38.1	100.0
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	99.8
#4	4.75	97.6
#8	2.36	87.9
#16	1.18	72.4
#30	0.60	57.1
#50	0.30	40.3
#100	0.15	27.4
#200	0.075	18.2





Gradation

ASTM C117 & C136

Project Number:

544-18356

November 6, 2018

Project Name:

Cahuilla Indian Health Center

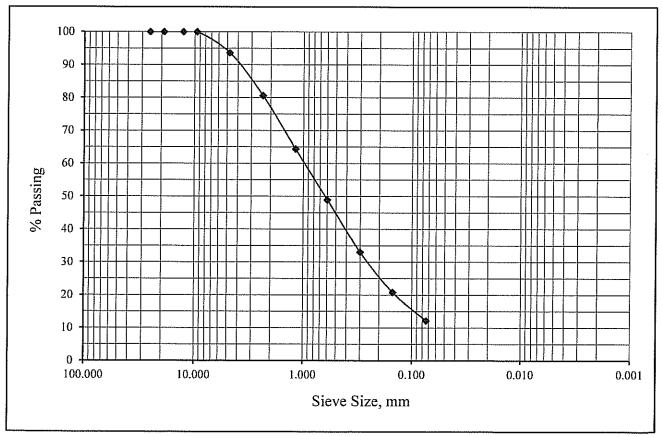
Lab ID Number:

LN6-18461

Sample ID:

BH-2 S-3 @ 10'

-





Gradation

ASTM C117 & C136

Project Number:

544-18356

November 6, 2018

Project Name:

Cahuilla Indian Health Center

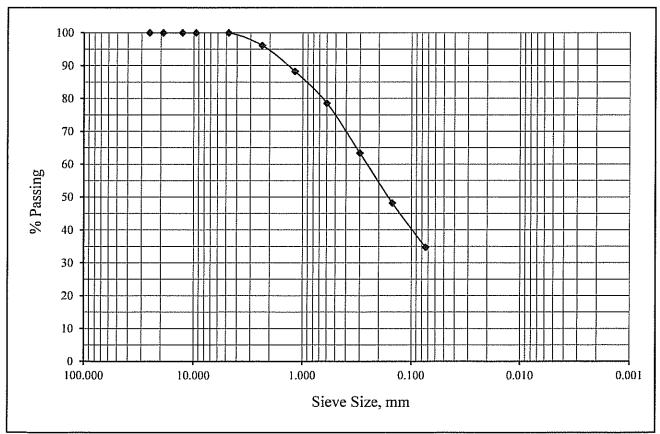
Lab ID Number:

LN6-18461

Sample ID:

BH-3 R-2 @ 5'

Sieve	Sieve	Percent
Size, in	Size, mm	Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	100.0
#8	2.36	96.1
#16	1.18	88.3
#30	0.60	78.5
#50	0.30	63.4
#100	0.15	48.2
#200	0.074	34.7





Gradation

ASTM C117 & C136

Project Number:

544-18356

November 6, 2018

Project Name:

Cahuilla Indian Health Center

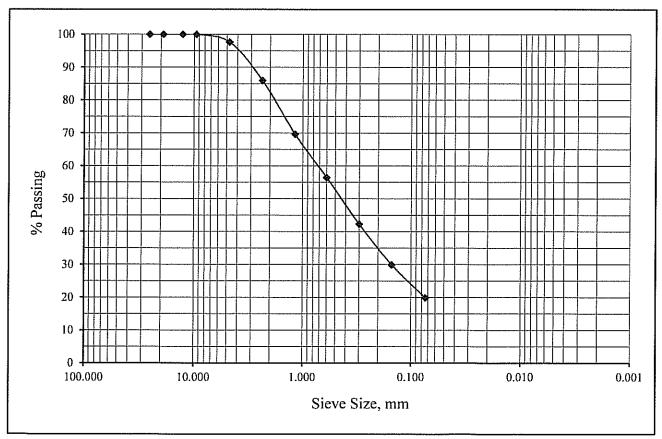
Lab ID Number:

LN6-18461

Sample ID:

BH-4 R-1 @ 5'

Sieve	Sieve	Percent
Size, in	Size, mm	Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	97.6
#8	2.36	86.0
#16	1.18	69.7
#30	0.60	56.4
#50	0.30	42.3
#100	0.15	29.9
#200	0.074	19.9





Gradation

ASTM C117 & C136

Project Number:

544-18356

November 6, 2018

Project Name:

Cahuilla Indian Health Center

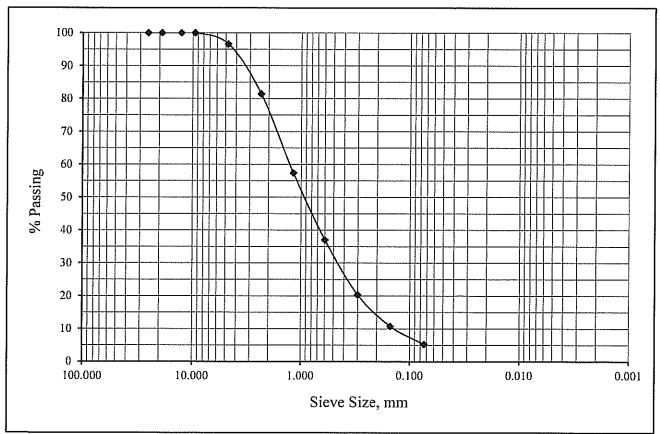
Lab ID Number:

LN6-18461

Sample ID:

BH-4 R-2 @ 10'

Sieve	Sieve	Percent
Size, in	Size, mm	Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	96.6
#8	2.36	81.5
#16	1.18	57.4
#30	0.60	37.0
#50	0.30	20.4
#100	0.15	10.8
#200	0.074	5.3





One Dimensional Consolidation

ASTM D2435 & D5333

Job Number:

544-18356

November 6, 2018

Job Name:

Cahuilla Indian Health Center

Lab ID Number: LN6-18461

Sample ID:

BH-3 R-2 @ 5'

Soil Description: Brown Silty Sand (SM)

Initial Dry Density, pcf:

110.9

Initial Moisture, %:

3.4

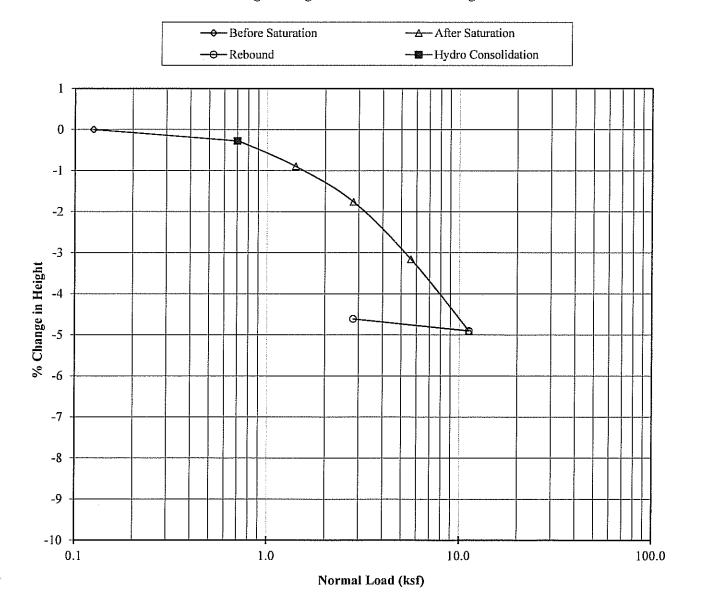
Initial Void Ratio:

0.503

Specific Gravity:

2.67

% Change in Height vs Normal Presssure Diagram





One Dimensional Consolidation

ASTM D2435 & D5333

Job Number:

544-18356

November 6, 2018

Job Name:

Cahuilla Indian Health Center

Lab ID Number: LN6-18461

BH-4 R-1 @ 5'

Sample ID:

Soil Description: Dark Brown Silty Sand (SM)

Initial Dry Density, pcf:

111.4

Initial Moisture, %:

Initial Void Ratio:

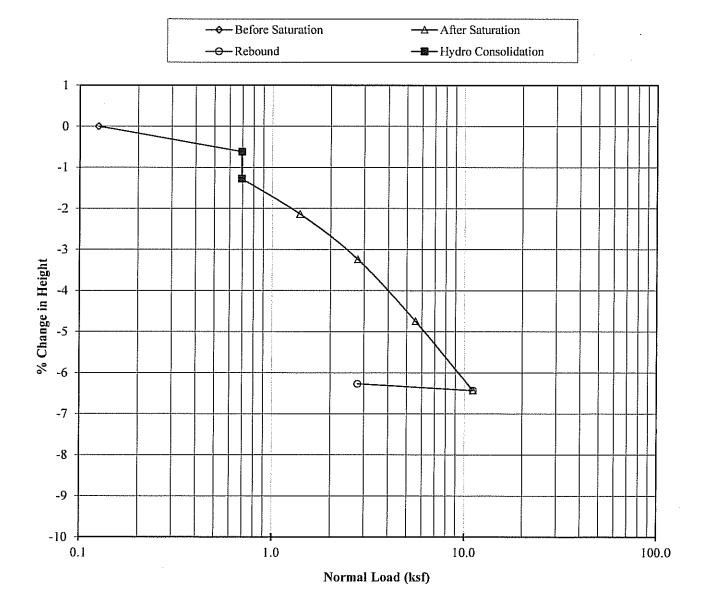
3.9 0.496

Specific Gravity:

2.67

Hydrocollapse: 0.7% @ 0.694 ksf

% Change in Height vs Normal Presssure Diagram



6782 Stanton Ave., Suite C, Buena Park, CA 90621 (714) 523-0952 Fax (714) 523-1369 45090 Golf Center Pkwy, Suite F, Indio, CA 92201 (760) 863-0713 Fax (760) 863-0847 450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Date: November 6, 2018

Account No.: 544-18356

Customer: Herron & Rumansoff Architects, Inc.

Location: Cahuilla Road, Anza Area

Analytical Report

Corrosion Series

	pH per CA 643	Soluble Sulfates per CA 417 ppm	Soluble Chloride per CA 422 ppm	Min. Resistivity per CA 643 ohm-cm
BH-1 @ 0-5'	8.0	140	50	4300
BH-2 @ 0-5'	7.9	120	80	1500

APPENDIX C

SEISMIC DESIGN MAP AND REPORT DEAGGREGATION OUTPUT

USGS Design Maps Summary Report

User-Specified Input

Report Title Cahuilla Road, Anza

Wed November 7, 2018 00:06:02 UTC

Building Code Reference Document ASCE 7-10 Standard

(which utilizes USGS hazard data available in 2008)

Site Coordinates 33.52336°N, 116.77623°W

Site Soil Classification Site Class C - "Very Dense Soil and Soft Rock"

Risk Category I/II/III



USGS-Provided Output

$$S_s = 1.500 g$$

$$S_{MS} = 1.500 g$$

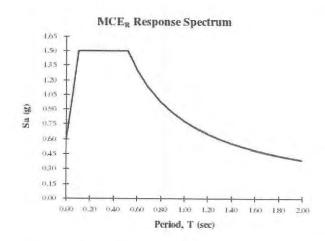
$$S_{DS} = 1.000 g$$

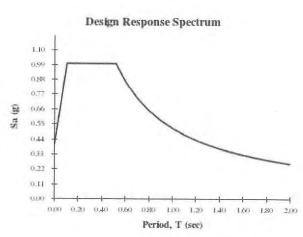
$$S_1 = 0.600 g$$

$$S_{M1} = 0.780 g$$

$$S_{D1} = 0.520 g$$

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





For PGA_M , T_L , C_{RS} , and C_{R1} values, please view the detailed report.

Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.

USGS Design Maps Detailed Report

ASCE 7-10 Standard (33.52336°N, 116.77623°W)

Site Class C - "Very Dense Soil and Soft Rock", Risk Category I/II/III

Section 11.4.1 — Mapped Acceleration Parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S_s) and 1.3 (to obtain S_1). Maps in the 2010 ASCE-7 Standard are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 11.4.3.

From	Figure	22-1	[1]
------	--------	------	-----

 $S_{s} = 1.500 g$

From Figure 22-2 [2]

 $S_1 = 0.600 g$

Section 11.4.2 — Site Class

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class C, based on the site soil properties in accordance with Chapter 20.

Table 20.3-1 Site Classification

Site Class	$ar{m{v}}_{ extsf{s}}$	\overline{N} or \overline{N}_{ch}	_ S u
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf

Any profile with more than 10 ft of soil having the characteristics:

- Plasticity index PI > 20,
- Moisture content $w \ge 40\%$, and
- Undrained shear strength $\overline{s}_{\rm u} < 500~{\rm psf}$

See Section 20.3.1

For SI: $1ft/s = 0.3048 \text{ m/s} 1lb/ft^2 = 0.0479 \text{ kN/m}^2$

F. Soils requiring site response analysis in accordance with Section 21.1

Section 11.4.3 — Site Coefficients and Risk-Targeted Maximum Considered Earthquake ($\underline{MCE_R}$) Spectral Response Acceleration Parameters

Table 11.4-1: Site Coefficient Fa

Site Class	Mapped MCE _R Spectral Response Acceleration Parameter at Short Period				
	S _s ≤ 0.25	S _s = 0.50	S _s = 0.75	S _s = 1.00	S ₅ ≥ 1.25
Α	0.8	0.8	0.8	0.8	0.8
В	1.0	1.0	1.0	1.0	1.0
С	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2,5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of S_s

For Site Class = C and S_s = 1.500 g, F_a = 1.000

Table 11.4-2: Site Coefficient F_v

Site Class	Mapped MCE R Spectral Response Acceleration Parameter at 1-s Period					
	$S_1 \leq 0.10$	$S_1 = 0.20$	$S_i = 0.30$	$S_1 = 0.40$	$S_1 \ge 0.50$	
Α	0.8	0.8	0.8	0.8	0.8	
В	1.0	1.0	1.0	1.0	1.0	
С	1.7	1.6	1.5	1.4	1.3	
D	2.4	2.0	1.8	1.6	1.5	
E	3.5	3.2	2.8	2.4	2.4	
F	See Section 11.4.7 of ASCE 7					

Note: Use straight-line interpolation for intermediate values of S₁

For Site Class = C and $S_{\rm t}$ = 0.600 g, $F_{\rm v}$ = 1.300

Equation (11.4-1):

 $S_{MS} = F_a S_S = 1.000 \times 1.500 = 1.500 g$

Equation (11.4-2):

 $S_{M1} = F_{\nu}S_1 = 1.300 \times 0.600 = 0.780 g$

Section 11.4.4 — Design Spectral Acceleration Parameters

Equation (11.4-3):

 $S_{DS} = \frac{1}{3} S_{MS} = \frac{1}{3} \times 1.500 = 1.000 g$

Equation (11.4-4):

 $S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 0.780 = 0.520 g$

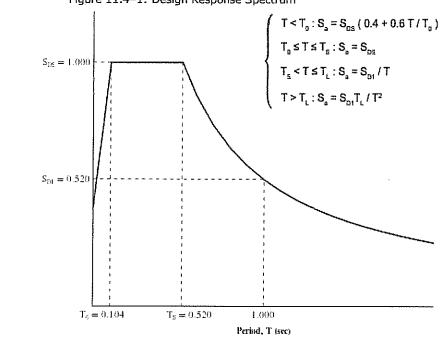
Section 11.4.5 — Design Response Spectrum

From Figure 22-12 [3]

Specifiel Response Acceleration, Sa 13)

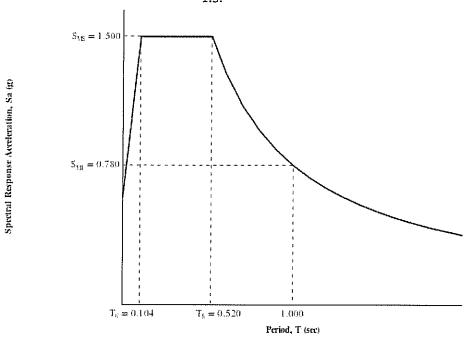
 $T_L = 8$ seconds





Section 11.4.6 — Risk-Targeted Maximum Considered Earthquake (MCE_R) Response Spectrum

The MCE_R Response Spectrum is determined by multiplying the design response spectrum above by 1.5.



Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

From <u>Figure 22-7</u> [4]

PGA = 0.509

Equation (11.8-1):

 $PGA_{M} = F_{PGA}PGA = 1.000 \times 0.509 = 0.509 g$

Table 11.8-1: Site Coefficient FPGA

Site	Mapped	MCE Geometri	c Mean Peak Gr	ound Accelerati	on, PGA
Class	PGA ≤ 0.10	PGA = 0.20	PGA = 0.30	PGA = 0.40	PGA ≥ 0.50
Α	0.8	0.8	0.8	0.8	0.8
В	1.0	1.0	1.0	1.0	1.0
С	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
Е	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of PGA

For Site Class = C and PGA = 0.509 g, F_{PGA} = 1.000

Section 21.2.1.1 — Method 1 (from Chapter 21 – Site-Specific Ground Motion Procedures for Seismic Design)

From	Figure	22-1	7 [5]

 $C_{RS} = 1.016$

From Figure 22-18 [6]

 $C_{R1} = 0.986$

Section 11.6 — Seismic Design Category

Table 11.6-1 Seismic Design Category Based on Short Period Response Acceleration Parameter

VALUE OF C		RISK CATEGORY	
VALUE OF S _{DS}	I or II	III	IV
S _{ps} < 0.167g	Α	Α	Α
$0.167g \le S_{DS} < 0.33g$	В	В	С
0.33g ≤ S _{bs} < 0.50g	С	С	D
0.50g ≤ S _{DS}	D	D	D

For Risk Category = I and S_{DS} = 1.000 g, Seismic Design Category = D

Table 11.6-2 Seismic Design Category Based on 1-S Period Response Acceleration Parameter

VALUE OF C		RISK CATEGORY	* *************************************
VALUE OF S _{D1}	I or II	III	IV
S _{D1} < 0.067g	Α	А	А
$0.067g \le S_{D1} < 0.133g$	В	В	С
$0.133g \le S_{D1} < 0.20g$	С	С	D
0.20g ≤ S _{D1}	D	D	D

For Risk Category = I and S_{D1} = 0.520 g, Seismic Design Category = D

Note: When S_1 is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category \equiv "the more severe design category in accordance with Table 11.6-1 or 11.6-2" = D

Note: See Section 11.6 for alternative approaches to calculating Seismic Design Category.

References

- 1. Figure 22-1: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-1.pdf
- 2. Figure 22-2: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-2.pdf
- 3. Figure 22-12: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-12.pdf
- 4. Figure 22-7: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-7.pdf
- 5. Figure 22-17: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-17.pdf
- 6. Figure 22-18: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-18.pdf

U.S. Geological Survey - Earthquake Hazards Program

Unified Hazard Tool

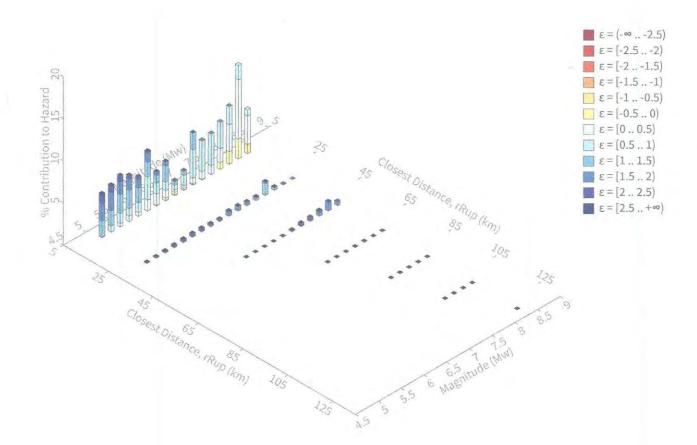
Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the <u>U.S. Seismic Design Maps web tools</u> (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

^ Input	
Edition	Spectral Period
Dynamic: Conterminous U.S. 2014 (Peak ground acceleration
Latitude	Time Horizon
Decimal degrees	Return period in years
33.523361	475
Longitude	
Decimal degrees, negative values for western longitudes	
-116.77623	
Site Class	
537 m/s (Site class C)	

Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 475 yrs

Exceedance rate: 0.0021052632 yr⁻¹ PGA ground motion: 0.4604186 g

Recovered targets

Return period: 507.71729 yrs Exceedance rate: 0.0019696 yr⁻¹

Totals

Binned: 100 % Residual: 0 % Trace: 0.15 %

Mean (for all sources)

r: 12.96 km m: 6.83 ε₀: 0.91 σ

Mode (largest r-m bin)

r: 11.65 km m: 8.1 ε₀: 0.23 σ

Contribution: 11.11%

Mode (largest ϵ_0 bin)

r: 11.62 km m: 8.1 ε₀: 0.33 σ

Contribution: 7.06 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km m: min = 4.4, max = 9.4, Δ = 0.2 ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

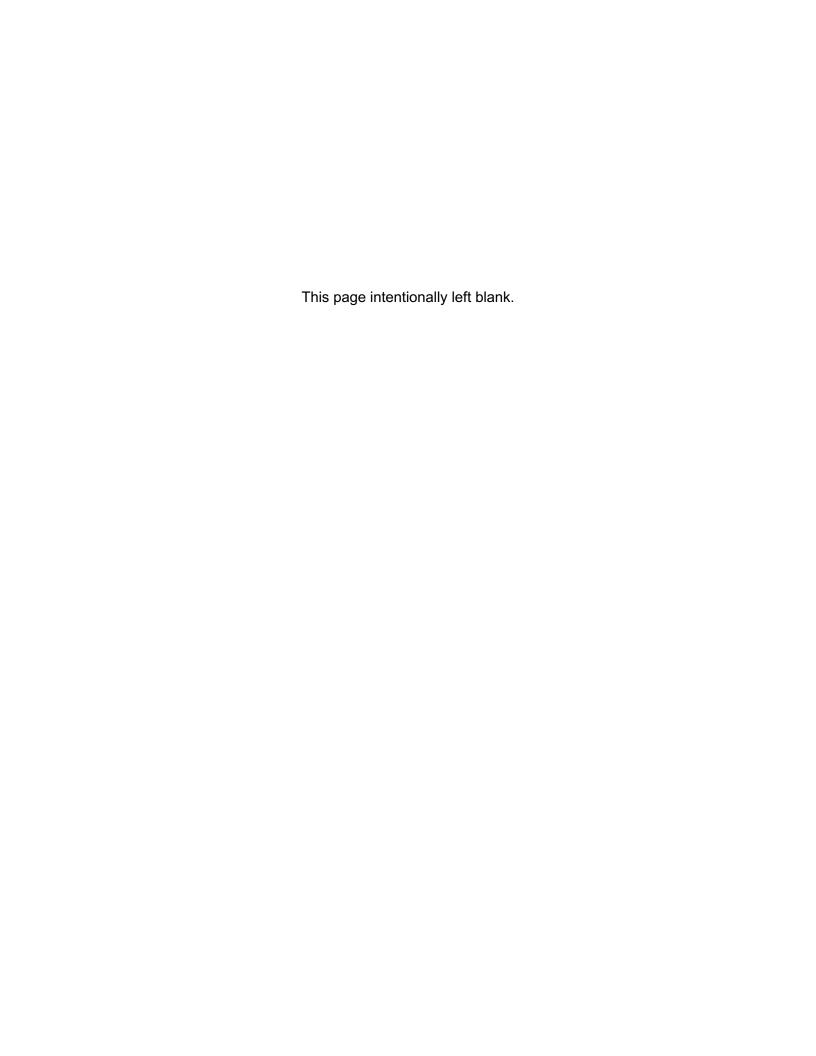
ε0: [-∞ .. -2.5) **ε1:** [-2.5 .. -2.0) **ε2:** [-2.0 .. -1.5) **ε3:** [-1.5 .. -1.0) **ε4:** [-1.0 .. -0.5) **ε5:** [-0.5 .. 0.0) **ε6:** [0.0 .. 0.5) **ε7:** [0.5 .. 1.0) **ε8:** [1.0 .. 1.5) **ε9:** [1.5 .. 2.0) **ε10:** [2.0 .. 2.5)

ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set & Source	Туре	r	m	ε ₀	lon	lat	az	%
UC33brAvg_FM31	System							27.58
San Jacinto (Anza) rev [3]		11.62	7.72	0.43	116.704°W	33.609°N	34.96	21.82
Earthquake Valley (No Extension) [0]		17.97	7.01	1.33	116.852°W	33.376°N	203.18	1.60
San Andreas (San Gorgonio Pass-Garnet Hill) [7]		46.83	7.95	1.88	116.773°W	33.944°N	0.38	1.08
Elsinore (Julian) [7]		26.47	7.66	1.34	116.921°W	33.319°N	210.67	1.03
UC33brAvg_FM32	System							27.11
San Jacinto (Anza) rev [3]		11.62	7.72	0.43	116.704°W	33.609°N	34.96	21.75
Earthquake Valley (No Extension) [0]		17.97	7.03	1.31	116.852°W	33.376°N	203.18	1.24
Elsinore (Julian) [7]		26.47	7.67	1.33	116,921°W	33.319°N	210.67	1.12
San Andreas (San Gorgonio Pass-Garnet HIII) [7]		46.83	7.96	1.87	116.773°W	33.944°N	0.38	1.08
JC33brAvg_FM31 (opt)	Grid							22.66
PointSourceFinite: -116.776, 33.555		6.08	5.71	0.73	116.776°W	33.555°N	0.00	3.35
PointSourceFinite: -116.776, 33.555		6.08	5.71	0.73	116.776°W	33,555°N	0.00	3.35
PointSourceFinite: -116.776, 33.600		9.54	5.70	1.29	116.776°W	33.600°N	0.00	2.15
PointSourceFinite: -116.776, 33.600		9.54	5.70	1.29	116.776°W	33.600°N	0.00	2.14
PointSourceFinite: -116.776, 33.591		8.71	5.73	1.15	116.776°W	33.591°N	0.00	1.80
PointSourceFinite: -116.776, 33.591		8.71	5.73	1.15	116.776°W	33.591°N	0.00	1.79
PointSourceFinite: -116.776, 33.627		11.41	5.90	1.40	116.776°W	33.627°N	0.00	1.50
PointSourceFinite: -116.776, 33.627		11.41	5.90	1.40	116.776°W	33.627°N	0.00	1.50
JC33brAvg_FM32 (opt)	Grid							22.65
PointSourceFinite: -116.776, 33.555		6.08	5.71	0.73	116.776°W	33.555°N	0.00	3.35
PointSourceFinite: -116.776, 33.555		6.08	5.71	0.73	116.776°W	33.555°N	0.00	3.35
PointSourceFinite: -116.776, 33.600		9.54	5.70	1.29	116.776°W	33.600°N	0.00	2.15
PointSourceFinite: -116.776, 33.600		9.54	5.70	1.29	116,776°W	33.600°N	0.00	2.14
PointSourceFinite: -116,776, 33.591		8.71	5.73	1.15	116.776°W	33.591°N	0.00	1.79
PointSourceFinite: -116.776, 33.591		8.71	5.73	1.15	116.776°W	33.591°N	0.00	1.79
PointSourceFinite: -116.776, 33.627		11.41	5.90	1.40	116.776°W	33.627°N	0.00	1.50
PointSourceFinite: -116.776, 33.627		11.41	5. 9 0	1.40	116.776°W	33.627°N	0.00	1.50

B Air Quality Report



Air Quality Technical Report

for the

Cahuilla Indian Health Center Project

Submitted To:

BRG Consulting, Inc. 304 Ivy Street San Diego, CA 92101

And

Cahuilla Band of Mission Indians of the Cahuilla Reservation 52701 CA-371 Anza, CA 92539

Prepared By:



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APPENDIX A - EMISSION CALCULATIONS

1 INTRODUCTION

Bureau of Indian Affairs (BIA) is considering the approval of a lease agreement for the construction and operation of a replacement health care facility on the Cahuilla Reservation in the unincorporated community of Anza, Riverside County, California. The existing Cahuilla Santa Rosa Indian Health Clinic serves AI/AN and is operated pursuant to a health care services contract or compact entered into under the Indian Self-Determination and Education Assistance Act, Public Law 93-638. The facility would be constructed on the south side of Cahuilla Road and northeast of Puckit Drive in the Anza Community of unincorporated Riverside County.

Lease approval for the health care center is a BIA federal action requiring environmental compliance with the National Environmental Policy Act (NEPA).

2 PROPOSED ACTION

The new clinic would consist of a single-story building, approximately 11,600 square feet (SF) in size on a 3-acre portion of Assessor Parcel Number 572-190-004, located immediately south of Cahuilla Road/State Route (SR) 371 and 0.9 miles north east of Puckit Drive in the Anza community of Riverside County. The Project would provide 90 parking spaces, along with landscaping, a covered outdoor area and lighting within the parking area. Vehicle access to the site would be provided by new driveway from SR 371. Non-emergency medical and community services would be provided from 8:00 AM to 5:00 PM, Monday through Thursday; and from 8:00 AM to 2:00 PM on Friday.

Construction would include clearing of existing vegetation, site grading and paving, construction of a 4-lane driveway entrance/exit from SR-371, and installation of landscaping, lighting and a covered outdoor area within the parking area. Construction would also include installation of a new 185,000-gallon underground water storage tank, installation of a retention basin and extension of electrical lines to the site. The site's wastewater would be handled by a new septic tank and 4,000-square-foot leach field system, located to the north of the health clinic and covered outdoor area.

Site preparation would involve minor cuts and fills in order to achieve the desired building pad elevation and provide adequate gradients for site drainage. Construction would comply with Executive Order 13717, Section 3(a), Establishing a Federal Earthquake Risk Management Standard.

The new facilities would take approximately six (6) months to construct. It was assumed for modeling purposes that construction would begin mid-2020. Approximately 40 construction jobs will be provided in the short term. Employment at the replacement health clinic would be offered first to California tribal members and then to local community residents.

The horizontal area of disturbance is a 4-acre portion of Assessor' Parcel Number (APN) 572-190-004 and was determined through reviews of project plans, estimations of maximum potential for ground disturbance, topographic and geographical constraints, etc. The vertical area of disturbance would range between six-inches and 5-feet for construction of the new site access, the building pad, utilities, septic system and retention basin.

The Air Quality Specialist Report will be prepared in accordance with methods dictated by the BIA and South Coast Air Quality Management District for projects proposed on federal lands. The material will support preparation of an amended Environmental Assessment and approval of a Finding of No Significant Impact (FONSI) for the proposed project.

A regional vicinity map is shown in Figure 1. The project site is shown in Figure 2.

3 EXISTING CONDITIONS

As stated in Section 1.0, the project is located within the unincorporated community City of Anza along SR-371 in Riverside County. The project site is located within the South Coast Air Basin which is which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The United States Environmental Protection Agency (EPA) has primary responsibilities for air quality management under the Federal Clean Air Act. However, the EPA has transferred a number of responsibilities to the states and, in most cases, regional air quality management districts. Air quality conditions in the non-desert portion of Riverside County are under the jurisdiction of the SCAQMD. The SCAQMD is required to monitor air pollutant levels to ensure that air quality standards are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the local air basin is classified as being in "attainment" or "non-attainment." The South Coast Air Basin (SCAB) is currently designated as a nonattainment area with respect to the State and Federal ozone and PM10 standards. The SCAB is designated attainment or unclassified for the remaining State and Federal standards.

The following discussion provides information on meteorological conditions, background air quality data, the regulatory framework, and locations of sensitive receptors in the vicinity of the project site.

3.1 Meteorological Conditions

The climate of southern California is characterized by hot, dry summers and mild to cold winters with seasonally heavy precipitation that occurs primarily during the winter months. The meteorological conditions in the region are influenced by the Eastern Pacific High, a strong, persistent high-pressure system that blocks migrating storm systems over the eastern Pacific Ocean. The area is also influenced by the moderating effects of the Pacific Ocean and mountain ranges that block air flow. Seasonal variations in the position and strength of the Eastern Pacific High are key factors in the weather changes in the area. The Eastern Pacific High attains its greatest

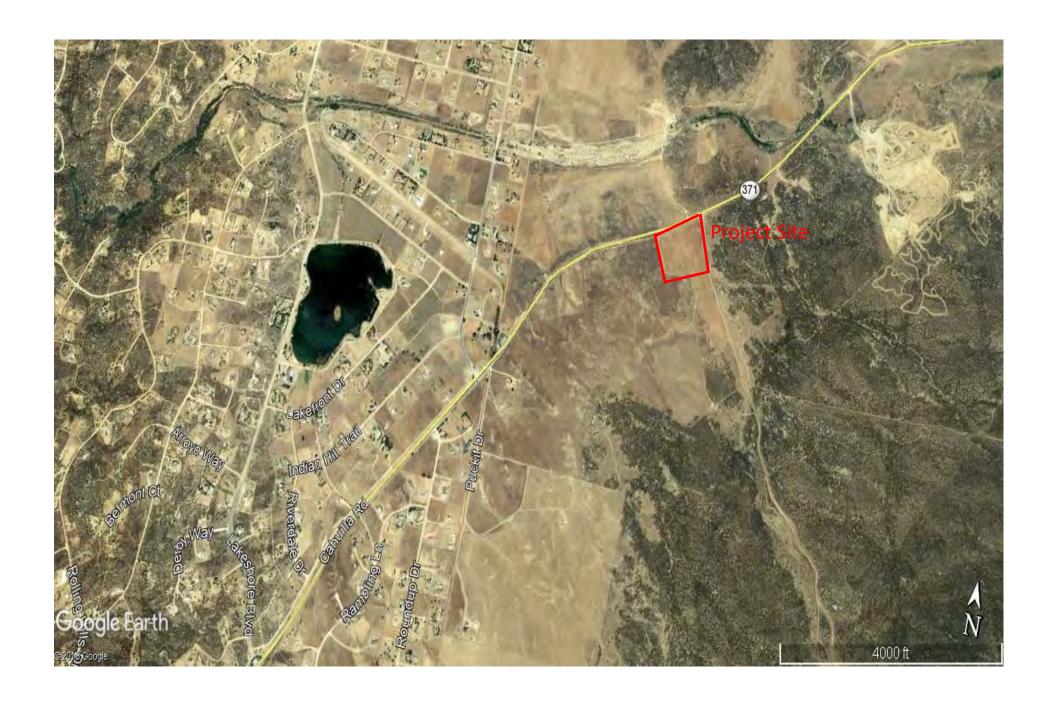
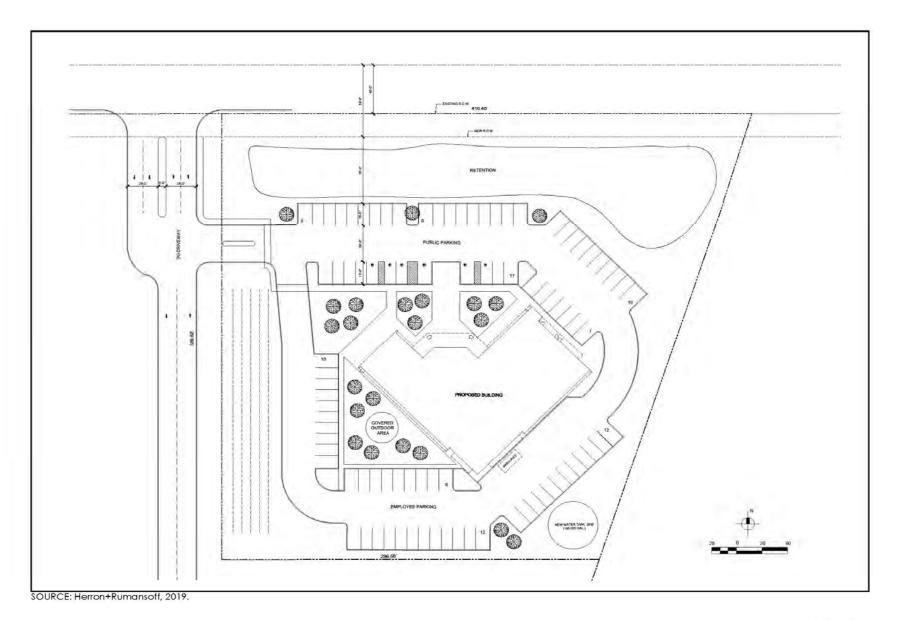


Figure 1— Vicinity Map



Proposed Site Plan Cahuilla Indian Health Clinic strength and most northerly position during the summer, when it is centered west of northern California. In this location, this high effectively shelters southern California from the effects of polar storm systems. Large-scale atmospheric subsidence associated with the high produces an elevated temperature inversion along the West Coast. The base of this subsidence inversion is generally 1,000 to 2,500 feet above mean sea level during the summer. Vertical mixing is often limited to the base of the inversion, and air pollutants are trapped in the lower atmosphere. The mountain ranges that surround the greater SCAB constrain the horizontal movement of air and also inhibit the dispersion of air pollutants out of the region.

The unincorporated community of Anza is located in Riverside County and within the SCAB as referenced. The climate in the project area is similar to the southern California region and characterized by hot, dry summers and mild to cold winters with seasonally heavy precipitation that occurs principally during the winter months. Like the region, the climate of the SCAB is influenced by the moderating effects of the Pacific Ocean. The mountain ranges that surround the SCAB constrain the horizontal movement of air and also inhibit the dispersion of air pollutants out of the region. These two factors, combined with the air pollution sources from the Los Angeles metropolitan area, are responsible for the high pollutant concentrations that can occur in the SCAB. In addition, high solar radiation during the warmer months promotes the formation of ozone, which has its highest concentration levels during the summer season.

Meteorological data from the Hemet monitoring station (Western Regional Climatic Center 2018) is representative of the project area and the closest reliable temperature and precipitation data available to the site. Monthly average temperatures and precipitation for the Hemet meteorological station are summarized in Table 3-1.

Table 3-1 Monthly Average Temperatures and Precipitation – Hemet Meteorological Station

Month		Precipitation, Inches		
WIOIILII	Maximum	Minimum	Mean	Precipitation, inches
January	69.1	38.3	53.7	2.31
February	67.7	39.3	53.5	2.20
March	72.8	41.9	57.3	1.78
April	76.3	45.0	60.7	0.90
May	84.6	50.5	67.6	0.31
June	91.8	54.4	73.1	0.05
July	98.4	60.9	79.7	0.16
August	98.9	61.2	80.5	0.24
September	94.6	58.1	76.4	0.40
October	84.3	50.2	67.3	0.50
November	74.1	42.2	58.2	1.02

December	67.7	37.3	52.5	1.45
Annual	81.7	48.4	65.1	11.32

Source: www.wrcc.dri.edu

3.2 Background Ambient Air Quality

Air pollution generally refers to additional chemical compounds, gases and particulates that may have been added to the air. The source of these pollutants can be from vegetation sources (biogenic), geological (geogenic) sources, or sources generated from human activity (anthropogenic). Pollution can also be classified as to the category of the source of the emissions. The two major categories of emissions are mobile sources and stationary sources. Mobile sources include on-road automobiles and trucks, off-highway vehicles (OHV), aircraft, trains, construction equipment, and recreational vehicles. Stationary sources include point sources such as large stack emissions from industrial sources and power generation, and area sources which represent an accumulation of many small point sources spread over a larger area.

Air quality is defined by ambient air concentrations of specific pollutants identified by the EPA to be of concern with respect to health and welfare of the general public. The EPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the EPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the EPA established both primary and secondary standards for several pollutants (called "criteria" pollutants). Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. The criteria pollutants that were originally identified in the CAA include ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter with an aerodynamic diameter of 10 microns or less, which is considered to be respirable (PM₁₀), and lead (Pb). In 1997, the EPA added particulate matter with an aerodynamic diameter of 2.5 microns or less (PM_{2.5}) to its list of criteria pollutants for which it has established NAAQS.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. The California Air Resources Board (CARB) has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six original criteria pollutants through the California Clean Air Act of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles.

The following discussion provides information on each of the criteria pollutants and their potential health effects.

Ozone. O₃ is considered a photochemical oxidant, which is a chemical that is formed when reactive organic gases (ROG) and oxides of nitrogen (NOx), both by-products of combustion, react in the presence of ultraviolet light. O₃ is considered a respiratory irritant, and prolonged exposure can reduce lung function, aggravate asthma and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to O₃.

Carbon Monoxide. CO is a product of combustion, and the main source of CO in the SCAB is from motor vehicle exhaust. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease, and it can also affect mental alertness and vision. Elevated CO concentrations are generally found only near a significant source of emissions such as a freeway or busy intersection. The highest concentrations of CO occur when low wind speeds and a stable atmosphere trap the pollution emitted at or near ground level in what is known as a stable boundary layer. These conditions occur more frequently in wintertime than in summer. Since mobile sources (motor vehicles) are the main source of CO, ambient concentrations of CO are dependent on motor vehicle activity. CO concentrations in California have declined substantially due to the 1992 wintertime oxygenated gasoline program and Phases I and II of the reformulated fuel program. Increasingly stringent motor vehicle emission standards and phase-out of older vehicles has also reduced CO emissions statewide.

Nitrogen Dioxide. NO₂ is also a by-product of fuel combustion, and it is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. Both NO₂ and NO are oxides of nitrogen (NO_x). NO₂ is a respiratory irritant that may affect those with existing respiratory illness, including asthma. NO₂ can also increase the risk of respiratory illness.

The majority of the NO_X that is emitted from combustion sources is emitted as NO, with the balance emitted as NO₂. NO₂ is formed in the atmosphere by a reaction of NO with O₂ and O₃. Some level of photochemical activity is required for the conversion of NO to NO₂. Highest concentrations of NO₂ generally occur during the fall months when inversion can occur to trap pollutants near the ground but there is adequate ultraviolet radiation to oxidize NO to NO₂.

Respirable Particulate Matter and Fine Particulate Matter. Respirable particulate matter, or PM₁₀, refers to particulate matter with an aerodynamic diameter of ten microns or less. Fine particulate matter, or PM_{2.5}, refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in this size range has been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM₁₀ and PM_{2.5} arise from a variety of sources, including road dust, diesel exhaust, combustion, tire and brake wear, construction operations, and windblown dust. Human activities that contribute to PM₁₀ emissions include combustion sources such as stack emissions, diesel exhaust, and smoke from prescribed fire and wildfire, fugitive dust sources such as construction and demolition activities, OHV travel, unpaved

public roads and parking lots, industrial activities, OHV open areas, and military activities. Both PM₁₀ and PM_{2.5} can either be emitted directly or formed from the interaction of precursor pollutants such as NOx, oxides of sulfur (SOx), ROG, and ammonia in the atmosphere.

One of the reasons for concern with PM₁₀ and PM_{2.5} emissions is their adverse effect on human health. PM₁₀ and PM_{2.5} can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. PM_{2.5} is considered to have the potential to lodge deeper in the lungs. All of the PM₁₀ particles are considered respirable particulates because they can be inhaled into the nose, throat and/or lungs. The fine PM₁₀ particles are the largest threat to health because they tend to deposit in air sacks located in the lungs. In addition, many of the fine particles are from precursor emissions, many of which are toxic or carcinogenic. Fugitive dust is primarily coarse particulate matter that is not as likely to contain toxic materials. The most recent study reported that a 100 µg/m³ increase in daily PM₁₀ concentrations would increase mortality by 10 percent (CARB 2009).

The remaining pollutants for which EPA and/or CARB have established ambient air quality standards are not measured in the Project Area and are not considered to be pollutants of concern for the Project. A summary of pollutant sources and effects is provided below.

Sulfur dioxide. SO₂ is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest concentrations of SO₂ are found near large industrial sources. SO₂ is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO₂ can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Pb in the atmosphere occurs as particulate matter. Pb has historically been emitted from vehicles combusting leaded gasoline as well as from industrial sources. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Pb has the potential to cause gastrointestinal, central nervous system, kidney, and blood diseases upon prolonged exposure. Pb is also classified as a probable human carcinogen.

Sulfates. Sulfates are the fully oxidized ionic form of sulfur. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO₂) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO₂ to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The CARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardiopulmonary disease. Sulfates are particularly effective in degrading visibility, and due to the fact that they are usually acidic they can harm ecosystems and damage materials and property.

Hydrogen Sulfide. H₂S is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. It can also be present in sewer gas and some natural gas, and it can be emitted as the result of geothermal energy exploitation. Breathing H₂S at levels above the standard would result in exposure to a very disagreeable odor. In 1984, an CARB committee concluded that the ambient standard for H₂S is adequate to protect public health and significantly reduce odor annoyance.

Vinyl Chloride. Vinyl chloride, a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites due to microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects such as dizziness, drowsiness, and headaches. Long-term exposure to vinyl chloride through inhalation and oral exposure causes liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation. Vinyl chloride exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer, in humans.

The EPA and CARB classify areas as "attainment," "nonattainment," or "unclassified" depending on whether ambient air quality data collected in the area indicate that the area shows compliance with the NAAQS and CAAQS, shows noncompliance with the NAAQS and CAAQS, or whether there are insufficient data to make a determination of the area's classification relative to the NAAQS and CAAQS. The NAAQS and CAAQS are presented in Table 3-2.

Table 3-2 Ambient Air Quality Standards

POLLUTANT	AVERAGE	CALIFORNIA STANDARDS ¹		NATIONAL STANDARDS ²		
PULLUTANT	TIME	Concentration ³	Method ⁴	Primary ^{3, 5}	Secondary ^{3, 6}	Method ⁷
Ozone ⁸	1 hour	0.09 ppm (180 μg/m³)	Ultraviolet	_	Same as	Ultraviolet
(O ₃)	8 hours	0.070 ppm (137μg/m ³)	Photometry	$0.070 \text{ ppm} $ (137 µg/m^3)	Primary Standard	Photometry
Carbon Monoxide	8 hours	9.0 ppm (10 mg/m ³)	Non-Dispersive Infrared	$9 \text{ ppm} $ (10 mg/m^3)		Non-Dispersive Infrared
(CO)	1 hour	20 ppm (23 mg/m ³)	Spectroscopy (NDIR)	35 ppm (40 mg/m ³)		Spectroscopy (NDIR)
Nitrogen Dioxide	Annual Average	0.030 ppm (57 μg/m³)	Gas Phase	$0.053 \text{ ppm} $ (100 µg/m^3)	Same as Primary Standard	Gas Phase
$(NO_2)^{10}$	1 hour	0.18 ppm (339 μg/m³)	Chemiluminescence	100 ppb (188 μg/m³)	1	Chemiluminescence
	1 24 hours 1 1 1 1		$0.03 \text{ ppm} \ (80 \text{ µg/m}^3)$			
Sulfur Dioxide (SO ₂) ¹¹		Ultraviolet Fluorescence	0.14 ppm (365 µg/m ³)		Pararosaniline	
	3 hours				0.5 ppm (1300 μg/m ³)	

POLLUTANT	AVERAGE	CALIFORNI	A STANDARDS ¹	NATIONAL STANDARDS ²		
POLLUTANT	TIME	Concentration ³	Method ⁴	Primary ^{3, 5}	Secondary ^{3, 6}	Method ⁷
	1 hour	0.25 ppm (655 μg/m³)		75 ppb (196 μg/m³)		
Respirable	24 hours	50 μg/m ³		$150 \ \mu g/m^3$	150 μg/m ³	In adial Communication and
Particulate Matter (PM ₁₀) ⁹	Annual Arithmetic Mean	20 μg/m ³	Gravimetric or Beta Attenuation			Inertial Separation and Gravimetric Analysis
Fine Particulate	Annual Arithmetic Mean	12 μg/m³	Gravimetric or Beta	12 μg/m ³	15 μg/m ³	Inertial Separation and
Matter (PM _{2.5}) ⁹	24 hours	24 hours Attenuation	$35 \mu g/m^3$	Same as Primary Standard	Gravimetric Analysis	
Sulfates	24 hours	25 μg/m ³	Ion Chromatography			
	30-day Average	1.5 μg/m ³	Atomic Absorption			
Lead ^{12, 13} (Pb)	Calendar Quarter			$1.5~\mu g/m^3$	Same as	High Volume Sampler and Atomic
	3-month Rolling Average			$0.15~\mu g/m^3$	Primary Standard	Absorption
Hydrogen Sulfide (H ₂ S)	1 hour	0.03 ppm (42 μg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹²	24 hours	0.010 ppm (26 μg/m³)	Gas Chromatography			

Notes:

ppm = parts per million

 $\mu g/m^3 = micrograms per cubic meter$

mg/m³ = milligrams per cubic meter

Source: California Air Resources Board 2017

- 1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing 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.
- 2. National standards (other than ozone, particulate matter, and those based on 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 measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
- 3. 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.

- 4. Any equivalent measurement method 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.
- 5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- 6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- 7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
- 8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
- 9. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 μ g/ m³ to 12.0 μ g/ m³. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 μ g/ m³, as was the annual secondary standard of 15 μ g/ m³. The existing 24-hour PM_{10} standards (primary and secondary) of 150 μ g/ m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
- 10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
- 11. On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
 - Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
- 12. 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.
- 13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 μg/ m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
- 14. In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Table 3-3 presents a summary of the federal and State attainment classification for the Project Area.

Table 3-3 Attainment Status – South Coast Air Basin

Pollutant	Attainment Status South Coast Air Basin		
	Federal	State	
Ozone – 1 hour	N/A	Extreme Nonattainment	

Ozone – 8 hour (2015 Standard)	Designation Pending	Nonattainment
CO	Attainment (Maintenance)	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
PM_{10}	Attainment (Maintenance)	Nonattainment
PM _{2.5}	Nonattainment	Nonattainment

Source: South Coast Air Quality Management District (2017)

The nearest ambient air monitoring station to the proposed Project site is the Winchester monitoring station located at 33700 Borel Road. The station measures O₃ and PM_{2.5}. PM₁₀ and NO₂ data were obtained from the Palm Springs Fire Station monitoring station located at 590 Racquet Club Avenue. SO₂ and CO have not been monitored in the immediate area and are not considered to be an air quality issue in the Project Area. Table 3-4 provides a summary of background air quality representative of the area.

Table 3-4 Representative Air Quality Data for the Cahuilla Band of Mission Indians Project

Air Quality Indicator	2015	2016	2017			
Ozone (O ₃)						
Peak 8-hour value (ppm)	0.087	0.081	0.088			
Days above state standard (0.070 ppm)	6	6	26			
Days above federal standard (0.070 ppm) ⁽³⁾	20	19	47			
Particulate matter less than or equal to 10	microns in dian	neter $(PM_{10})^{(1)}$				
Peak 24-hour value (μg/m³)	199	447.2	105.6			
Days above state standard (50 μg/m³)	2	3	1			
Days above federal standard (150 µg/m ³)	1	1	0			
Annual Average value (μg/m³) (federal)	20.9	23.1	22.1			
Particulate matter less than or equal to 2.5	microns in dia	meter (PM _{2.5})				
Peak 24-hour value (μg/m³)	24.5	26.9	21.6			
Days above federal standard (35 μg/m³)	*	*	*			
Annual Average value (μg/m³)	*	*	10			
Carbon Monoxide (CO)						
Peak 8-hour value (ppm)	ND	ND	ND			
Days above state/federal standard (9.0 ppm)	ND	ND	ND			
Nitrogen Dioxide (NO ₂) ⁽¹⁾						
Peak 1-hour value (μg/m³)	41.5	42.6	42.5			

Days above state standard (0.18 ppm)	0	0	0
Annual Average (μg/m³)	6	6	6

¹-Data obtained from the Palm Springs Fire Station Monitoring Station.

In addition to criteria pollutants, the EPA and CARB regulate both toxic air contaminants and greenhouse gases.

Toxic Air Contaminants. Toxic air contaminants (TACs) are air pollutants that have been determined to present some level of acute or chronic health risk (cancer or non-cancer) to the general public. These pollutants may be emitted in trace amounts from various types of sources, including combustion sources.

Greenhouse Gas Emissions. Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions occur from natural processes as well as human activities. The accumulation of GHGs in the atmosphere regulates the earth's temperature. Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences worldwide.

Recent observed changes resulting from global warming include shrinking glaciers, thawing permafrost, a lengthened growing season, and shifts in plant and animal ranges (Intergovernmental Panel on Climate Change 2007). Predictions of long-term environmental impacts due to global warming include sea level rise, changing weather patterns with increases in the severity of storms and droughts, changes to local and regional ecosystems including the potential loss of species, and a significant reduction in winter snow pack.

The most common GHGs emitted from natural processes and human activities include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydrofluorocarbons and perfluorocarbons) and sulfur hexafluoride. Each GHG is assigned a global warming potential (GWP). The GWP is the ability of a gas or aerosol to trap heat in the atmosphere. The GWP rating system is standardized to CO₂, which has a value of one. For example, CH₄ has a GWP of 21, which means that it has a global warming effect 21 times greater than CO₂ on an equal-mass basis. Total GHG emissions from a source are often reported as a CO₂ equivalent (CO₂e). The CO₂e is calculated by multiplying the emission of each GHG by its GWP and adding the results together to produce a single, combined emission rate representing all GHGs. On a national scale, federal agencies are addressing emissions of GHGs by reductions mandated in federal laws and Executive Orders. Most recently, Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management,* was enacted. Several states have promulgated laws as a method to reduce GHG emissions statewide. In particular, the California Global Warming Solutions Act

of 2006 directs the State of California to reduce statewide GHG emissions to 1990 levels by the year 2020.

The potential effects of proposed GHG emissions are by nature global and cumulative impacts, as individual sources of GHG emissions are not large enough to have an appreciable effect on climate change. Therefore, the impact of proposed GHG emissions to climate change is discussed in the context of cumulative impacts.

3.3 Applicable Regulations and Standards

The following summarizes the air quality rules and regulations that apply to the Proposed Action.

3.3.1 Federal Requirements

Federal Clean Air Act. The EPA is responsible for enforcing the CAA of 1970 and its 1977 and 1990 Amendments. As discussed above in Section 3.2, the EPA established the NAAQS to protect human health and welfare. The EPA classifies areas as "attainment," "nonattainment," or "unclassified" depending on whether ambient air quality data collected in the area indicate that the area shows compliance with the NAAQS (attainment), shows noncompliance with the NAAQS (nonattainment), or whether there are insufficient data to make a determination of the area's classification relative to the NAAQS (unclassified). Areas which the EPA has classified as nonattainment areas for criteria pollutants, which include O₃, NO₂, CO, PM₁₀, PM_{2.5}, and SO₂, are required to prepare and implement a State Implementation Plan (SIP).

The CARB is the agency responsible for compiling and adopting the California SIPs. SIPs are not single documents. They are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. Many of California's SIPs rely on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. The individual SIP sections are prepared by local air districts. State law designates CARB the lead agency for all purposes related to the SIP. 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 EPA for approval and publication in the Federal Register. The Code of Federal Regulations Title 40, Chapter I, Part 52, Subpart F, Section 52.220 lists all of the items which are included in the California SIP. At any one time, several California submittals are pending EPA approval.

The SIP identifies and quantifies sources of emissions and presents a comprehensive strategy to control and reduce locally generated emissions. The SIP also includes an attainment demonstration which shows (generally through modeling) that the proposed combination of existing sources and the proposed actions will result in meeting attainment by the prescribed deadline. SIPs for areas that have been designated as "moderate" must contain "reasonably available control measures" (RACM) or "reasonably available control technology" (RACT) to be implemented, unless their

effect on a source is insignificant. In addition, the EPA mandates the application of RACMs to existing sources. The SIP must justify the non-inclusion of RACMs not selected. Serious nonattainment areas are required to apply best available control measures (BACM) or best available control technology (BACT).

Federal Emission Standards. The EPA has also adopted on-road and off-road engine emission reduction requirements, including Federal Exhaust and Evaporative Emission Standards for Light-Duty Vehicles and Light-Duty Trucks, Federal Emission Standards for Heavy-Duty and Non-Road Engines, and other emission control programs that affect a Project's potential impacts to air quality through the phase-in of clean fuel and engine requirements.

General Conformity Rule. To further assure compliance with the NAAQS, the EPA General Conformity Rule requires that federal agencies demonstrate that federal actions conform with the applicable SIP to ensure that federal activities do not hamper local efforts to control air pollution (EPA 2017). In addition, the General Conformity Rule prohibits federal agencies, departments, or instrumentalities from engaging in, supporting, providing financial assistance for, licensing, permitting, or approving any action which does not conform to an approved SIP or federal implementation plan.

According to 40 CFR Part 93, Section 153(c)(4), a conformity determination is not required for actions which implement a decision to conduct or carry out a conforming program which is consistent with a conforming land management plan. The proposed project is consistent with the land use defined for the project site. Accordingly, emissions associated with the Proposed Action are not subject to a conformity determination. Related activities, such as equipment and vehicle use required to implement the Proposed Action, is subject to a conformity analysis.

Global Climate Change Regulations. International and federal legislation have been enacted to address global climate change issues. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis for human-induced climate change, its potential impacts, and options for adaptation and mitigation. The most recent reports of the IPCC have emphasized the scientific consensus that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable.

In October 1993, President William Clinton announced his Climate Change Action Plan (CCAP), which had a goal of returning GHG emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives that relied on innovative voluntary partnerships between the private sector and government aimed at producing cost-effective reductions in GHG emissions. On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the

Convention, governments agreed to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas (GHG) emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of global climate change.

In 2007, the United States Supreme Court declared in the court case of *Massachusetts et al. vs. the Environmental Protection Agency et al.*, 549 C.S. 497 (2007), that the EPA does have the authority to regulate GHG emissions. In addition to the national and international efforts described above, many local jurisdictions have adopted climate change policies and programs.

In December 2009, the United Nations Climate Change Conference was held in Copenhagen, Denmark. The Copenhagen Accord was drafted at the conference by the United States, China, Brazil, India and South Africa, but no binding resolution was adopted at the conference.

Endangerment Finding. On April 17, 2009, EPA issued its proposed endangerment finding for GHG emissions. On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)—in the atmosphere threaten the public health and welfare of current and future generations.

Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

The endangerment findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009.

Mandatory GHG Reporting Rule. On March 10, 2009, in response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), EPA proposed a rule that requires mandatory reporting of greenhouse gas (GHG) emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of Greenhouse Gases Rule was signed and was published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. The rule will collect accurate and comprehensive emissions data to inform future policy decisions.

EPA is requiring suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to

submit annual reports to EPA. The gases covered by the proposed rule are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulfur hexafluoride (SF₆), and other fluorinated gases including nitrogen trifluoride (NF₃) and hydrofluorinated ethers (HFE).

Corporate Average Fuel Economy Standards. The Federal Corporate Average Fuel Economy (CAFE) standard determines the fuel efficiency of certain vehicle classes in the United States. In 2007, as part of the Energy and Security Act of 2007, CAFE standards were increased for new light-duty vehicles to 35 miles per gallon by 2020. In May 2009, President Barack Obama announced plans to increase CAFE standards requiring light-duty vehicles to meet an average fuel economy of 35.5 miles per gallon by 2016. At the end of 2016, the Obama administration EPA, as well as the National Highway Traffic Safety Administration, revised the fuel-economy and GHG emission targets for the automakers requiring them to achieve an average of 54.5 mpg by 2025. In April 2017, the Trump administration announced the current CAFE standards would be evaluated for potential revision. No decisions have yet been made on revising the 2016 CAFE standards.

3.3.2 State Regulations

The California Ambient Air Quality Standards (CAAQS), which are the State equivalent of the NAAQS, identify the State emission thresholds for criteria pollutants. As with the NAAQS, the CARB is the State regulatory agency with authority to enforce regulations to both achieve and maintain the CAAQS. The CAAQS for criteria pollutants are more stringent than the NAAQS. Additionally, as part of the CAAQS, CARB has established standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride.

CARB is also responsible for regulating mobile source emissions within California and has adopted on-road and off-road emission reduction programs that indirectly affect the Project's emissions through the phase-in of increasingly stringent engine emission standards and clean fuels requirements. CARB has also adopted a Portable Equipment Registration Program that allows owners or operators of portable engines to register their units under a statewide portable registration program, provided the engines meet specific emission requirements. Generally, portable engines with a brake horsepower rating of 50 horsepower or more can be operated within the jurisdiction of the SCAQMD provided they obtain either a permit to operate or are registered under the Portable Equipment Registration Program (PERP). Portable equipment registered under the PERP program must meet the current USEPA emission standards (Tier standards) for NO_x, hydrocarbons, and particulate matter. They must arrange for an inspection with the SCAQMD on a three-year schedule, and equipment registered under the PERP program is not required to obtain individual permits. On July 26, 2007, CARB approved a regulation to reduce emissions from existing off-road diesel vehicles used in California in construction. This regulation affects operators of fleets of construction equipment, and requires fleets of equipment to meet emission rate targets for PM and NO_X.

The following subsections describe regulations and standards that have been adopted by the State of California to address air quality and global climate change issues.

In 2005, former Governor Schwarzenegger issued Executive Order (EO) S-3-05, establishing statewide GHG emissions reduction targets. EO S-3-05 states that by 2020, emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80 percent of 1990 levels (CalEPA, 2006). In response to EO S-3-05, CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the "2006 CAT Report") (CalEPA, 2006). The 2006 CAT Report recommended various strategies that the state could pursue to reduce GHG emissions. These strategies could be implemented by various state agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the state agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture.

California's major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the "California Global Warming Solutions Act of 2006," signed into law in 2006. AB 32 codifies the Statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15% reduction below 2005 emission levels; the same requirement as under S-3-05), and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, the CARB approved a 1990 statewide GHG level and 2020 limit of 427 MMT CO₂E. The Scoping Plan was approved by CARB on December 11, 2008, and includes measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms. CARB approved the 2017 California Climate Change Scoping Plan in December 2017. The purpose of the 2017 scoping plan is to provide guidance focused on reducing existing GHG emissions by an additional 40% by 2035.

Executive Order S-01-07 was enacted on January 18, 2007. The order mandates that a Low Carbon Fuel Standard ("LCFS") for transportation fuels be established for California to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020.

Other regulations affecting state and local GHG planning and policy development are summarized as follows:

Assembly Bill 939 and Senate Bill 1374. Assembly Bill 939 (AB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether

through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004 suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills.

Assembly Bill 341. AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that no less than 75% of solid waste be generated be source-reduced, recycled, or composted by the year 2020 and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery to develop strategies to achieve the state's policy goal. The California Department of Resources Recycling and Recovery has conducted multiple workshops and published documents that identify priority strategies that they would assist the state in reaching the 75% goal by 2020.

Senate Bill 1368. Senate Bill 1368 (SB 1368) is the companion Bill of AB 32 and was adopted September 2006. SB 1368 required the California Public Utilities Commission (CPUC) to establish a performance standard for baseload generation of GHG emissions by investor-owned utilities by February 1, 2007 and for local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas-fired plant. Furthermore, the legislation states that all electricity provided to the State, including imported electricity, must be generated by plants that meet the standards set by California Public Utilities Commission (CPUC) and California Energy Commission (CEC). Senate Bill 97. Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is an environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010. Pursuant to the requirements of SB 97 as stated above, on December 30, 2009 the Natural Resources Agency adopted amendments to the state CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed sections of the CEQA Guidelines and incorporated GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010 and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of

several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.

- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in *Appendix F* of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."
- OPRs emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

Senate Bills 1078, 107, and X1-2 and Executive Orders S-14-08 and S-21-09. Senate Bill 1078 (SB 1078) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) changed the target date to 2010. Executive Order S-14-08 was signed on November 2008 and expands the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

California Code of Regulations (CCR) Title 24, Part 6. CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008 and Building Standards Commission approved them for publication on September 11, 2008. These updates became

effective on August 1, 2009. All buildings for which an application for a building permit is submitted on or after July 1, 2014 must follow the 2013 standards. The 2013 commercial standards are estimated to be 30 percent more efficient than the 2008 standards; 2013 residential standards are at least 25 percent more efficient. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

Senate Bill 375. Senate Bill 375 (SB 375) was adopted in September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities' strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable community's strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG) jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 13 percent below 2005 per capita GHG emissions levels by 2035. In April 2016, SCAG adopted the 2016-2040 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS), which meets the CARB emission reduction requirements. The Housing Element Update is required by the State to be completed within 18 months after RTP/SCS adoption. The current Riverside County Housing Element 2013-2021 was adopted October 2015.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS or APS. However, CEQA incentivizes, through streamlining and other provisions, qualified projects that are consistent with an approved SCS or APS and categorized as "transit priority projects."

Senate Bill X7-7. Senate Bill X7-7 (SB X7-7), enacted on November 9, 2009, mandates water conservation targets and efficiency improvements for urban and agricultural water suppliers. SB X7-7 requires the Department of Water Resources (DWR) to develop a task force and technical panel to develop alternative best management practices for the water sector. Additionally, SB X7-7 required the DWR to develop criteria for baseline uses for residential, commercial, and industrial uses for both indoor and landscaped area uses. The DWR was also required to develop targets and regulations that achieve a statewide 20 percent reduction in water usage.

California Green Building Standards. On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. The Code is a comprehensive and uniform regulatory code for all residential, commercial and school buildings. The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings must meet for occupancy certification. Enforcement is generally through the local building official.

27 CCR Title 24, Part 11: California Green Building Standards (Title 24) became effective in 2001 in response to continued efforts to reduce GHG emissions associated with energy consumption. CCR Title 24, Part 11 now require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory measures and an additional 130 provisions for optional use. Some key mandatory measures for commercial occupancies include specified parking for clean air vehicles, a 20 percent reduction of potable water use within buildings, a 50 percent construction waste diversion from landfills (AB 341 approved in 2015 increased the goal to 75% diversion by 2020), use of building finish materials that emit low levels of volatile organic compounds, and commissioning for new, nonresidential buildings over 10,000 square feet.

Executive Order B-30-15. On April 29, 2015, Governor Brown issued an executive order to establish a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 - the most aggressive benchmark enacted by any government in North America to reduce dangerous carbon emissions over the next decade and a half. This executive action set the stage for the important work being done on climate change by the Legislature. The Governor's executive order aligns California's greenhouse gas reduction targets with those of leading international governments.

California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent from 1990 levels by 2050.

3.3.3 <u>Local Regulations</u>

It is the responsibility of the local air districts to ensure that State and federal ambient air quality standards are achieved and maintained in the area under their jurisdiction. The Proposed Action is

under the jurisdiction of the SCAQMD and is therefore subject to its rules and regulations. The local air districts are responsible for planning, implementing, and enforcing federal and State ambient air quality standards, and developing plans and programs to attain and maintain the air quality standards for their jurisdiction.

Each of the local air districts has adopted rules and regulations that regulate visible emissions, nuisance emissions, and fugitive dust emissions. These rules will apply to the Project during construction. As the Project does not involve installation of any stationary sources, stationary source rules and regulations do not apply. Specific regulations that apply to the Project are as follows:

SCAQMD Rule 401 – Visible Emissions. SCAQMD Rule 401 restricts emissions from any single source, over a period or periods aggregating more than three minutes in any one hour, emissions which are: (A) As dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or (B) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in (A). Notwithstanding the provisions above, Rule 401 states that a person shall not discharge into the atmosphere from any diesel pile-driving hammer, operating exclusively using kerosene fuel, containing approved smoke-reducing fuel additives, as the sole fuel, and using only synthetic engine lubrication oil, or other method deemed technologically and economically feasible by the Executive Officer, any air contaminant for a period or periods aggregating more than four minutes during the driving of a single pile which is: (A) As dark or darker in shade as that designated No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines; or (B) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in (A).

SCAQMD Rule 402 – Nuisance. SCAQMD Rule 402 requires that a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

SCAQMD Rule 403 – Fugitive Dust. The purpose of SCAQMD Rule 403 is to reduce the amount of particulate matter entrained in ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 includes Best Available Control Measures and control measures for large operations to control fugitive dust emissions.

SCAQMD Rule 1186 – PM₁₀ Emissions from Paved and Unpaved Roads, and Livestock Operations. The purpose of this rule is to reduce the amount of particulate matter entrained in the ambient air as a result of vehicular travel on paved and unpaved public roads, and at livestock operations. The rule requires removal of visible material on paved roads and dust control measures

to be implemented on unpaved roads. Only paved roads would be used to access the proposed health care clinic.

Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology. The SCAQMD has developed methodologies to calculate PM_{2.5} emissions and has established localized significance thresholds (LSTs) that are applicable under the California Environmental Quality Act. The LSTs are based on area-specific air dispersion modeling, and apply to sources from 1 to 5 acres in size.

The proposed project would occur on Native American reservation land within an area designated for public services. Implementation of SCAQMD Rule 403 would reduce fugitive dust during construction and paving existing undeveloped areas and would reduce fugitive dust emissions post-construction. An evaluation of project consistency with LST for NOx, CO, PM₁₀ and PM_{2.5} is provided herein.

This analysis provides an estimate of the emissions for implementation of the Cahuilla Band of Mission Indians Health Center Project and an evaluation of project consistency with emission estimates contained in the AQMP.

4 THRESHOLDS OF SIGNIFICANCE

For the Proposed Action, the Project may result in significant air quality impacts if:

- Criterion AIR-1: The Project would conflict with the current approved Air Quality Management Plan and SIP.
- Criterion AIR-2: The Project would generate emissions of air pollutants that would exceed any regional thresholds.
- Criterion AIR-3: The Project would generate emissions of air pollutants that would exceed the Federal General Conformity Applicability Thresholds and would not be in conformity with the applicable State Implementation Plan.
- Criterion AIR-4: The Project would result in a significant impact to global climate change based on the Tier 3 threshold of 3,000 metric tons of CO₂E per year proposed by the SCAQMD (September 2010 Stakeholder Working Group Meeting).

A discussion of each significance criterion is provided in the following sections:

4.1 Criterion AIR-1: Conformance with Applicable Air Quality Management Plan

The most recent air quality management plan adopted by the SCAQMD for the SCAB is the 2016 Air Quality Management Plan (AQMP) (SCAQMD 2017), which was adopted by the SCAQMD Governing Board on March 3, 2017. The 2016 AQMP focuses on strategies for attainment and maintenance of ozone and PM_{2.5} standards. To meet ozone standards, both NO_x and volatile

organic compounds (VOC) emissions are addressed in the AQMP. However, air quality modeling demonstrates that NO_x reductions prove to be much more effective in reducing ozone levels and will also lead to significant improvement in PM_{2.5} concentrations. NO_x -emitting stationary sources regulated by the SCAQMD include refineries, power plants, natural gas combustion equipment (e.g., boilers, heaters, engines, burners, flares) and other combustion sources that burn wood or propane. The 2016 AQMP proposes significant NO_x reductions from new regulations on refineries, power plants, non-refinery flares, commercial cooking, and residential and commercial appliances.

The AQMP states that based on projections from 2012, continued implementation of previously adopted regulations will lead to NO_x emission reductions of 68 percent by 2023 and 80 percent by 2031. With the addition of 2016 AQMP proposed regulatory measures, a 30 percent reduction of NO_x from stationary sources is expected in the 15-year period between 2008 and 2023. This is in addition to significant NO_x reductions from stationary sources achieved prior to 2008.

The AQMP contains estimates of emissions for off-road equipment and on-road vehicles. Post-construction, the primary emission source associated with the project will be on-road vehicles. Emissions for these source categories for the year 2019 are shown in Table 4-1.

Table 4-1 Air Quality Management Plan Emissions estimate - 2022 Baseline (tons per day)

Source Category	VOC	NOx	СО	SOx	PM _{2.5}
Off-road Equipment	74	113	715	5	6
On-Road Vehicles	68	125	498	2	10

Source: SCAQMD 2016 Air Quality Management Plan.

The Proposed Action does not exceed these emissions budgets as shown below; thus, it would conform to the AQMP.

4.2 Criterion AIR-2: Regional Air Quality Significance Thresholds

Local air quality regulatory agencies have established significance thresholds under CEQA that can be used to assess whether a proposed project could have a significant impact on regional air quality. The SCAQMD has established thresholds based on lbs/day and/or tons/year of emissions for construction activities and project operations. Regional significance thresholds are summarized in Table 4-2.

Table 4-2 Regional Air Quality Significance Thresholds

	South Coast AQMD		
Criteria Pollutant	Construction	Operation	
	lbs/day	lbs/day	
Carbon Monoxide (CO)	550	550	
Oxides of Nitrogen (NO _X)	100	55	

Reactive Organic Compounds (ROG)	75	55
Particulate Matter (PM ₁₀)	150	150
Particulate Matter (PM _{2.5})	55	55
Oxides of Sulfur (SO _X)	150	150

Source: SCAQMD, 2015

4.3 Criterion AIR-3: Federal General Conformity Significance Criteria

As discussed in section 3.3, the General Conformity Rule is applicable to the Proposed Action because the related emissions are associated with the use of vehicles to transport staff, vendors, patients and employees to/from the health center. Mobile source emissions are evaluated based on the General Conformity Rule *de minimis* thresholds for the SCAB.

The General Conformity Rule applies to Federal actions. The applicability emission thresholds (also referred to as *de minimis* thresholds) are shown in Table 4-3 and would apply to projects that require Federal approval and are located in Federal nonattainment areas.

Table 4-3 Federal General Conformity Applicability Thresholds

Air Basin	NO _x and ROG	PM ₁₀	CO and PM _{2.5}
South Coast	10 tons/year	70 tons/year	100 tons/year

Source: US EPA De minimis tables, https://www.epa.gov/general-conformity/de-minimis-tables

4.4 Criterion AIR-4: Global Climate Change

Currently, there are no formally adopted or published National Environmental Policy Act (NEPA) thresholds for GHG emissions. On March 28, 2017, President Trump signed Executive Order 13783, *Promoting Energy Independence and Economic Growth*, which suspended regulations interpreted to be contrary to this objective. On April 5, 2017, the Council on Environmental Quality (CEQ) withdrew the "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews." The guidance that was implemented August 5, 2016, indicated that use of 25,000 metric tons of CO₂e emissions as a reference point would provide federal agencies with a useful indicator, rather than an absolute standard of significance, for agencies to provide action-specific evaluation of GHG emissions and disclosure of potential impacts.

The SCAQMD has developed interim guidelines for the evaluation of global climate impacts for projects under its jurisdiction. SCAQMD staffs recommended an interim GHG significance threshold proposal using a tiered approach for determining significance. Tier 3, which is expected to be the primary tier by which the SCAQMD will determine significance for projects where it is the lead agency, uses the Governor of California's Executive Order S-3-05 goal (as described under Regulatory Framework, Section 3, above) as the basis for deriving the screening level.

Tier 3 has been used to evaluate whether the Project would have a significant impact on global climate. The quantitative threshold under Tier 3 would be 3,000 metric tons of CO₂ equivalent emissions. Project air quality impacts were evaluated on the basis of these significance criteria.

5 AIR QUALITY IMPACTS

This section presents an evaluation of impacts associated with the Proposed Action and with the No Action Alternative.

5.1 Proposed Action

Potential air quality impacts associated with the Proposed Action would arise due to emissions from activities associated with the Project. Emission sources would consist of construction equipment and vehicles required to transport work crews, equipment and materials to/from the site. Operation emissions would be comprised primarily of mobile sources emissions associated with transporting patients, vendors and employees to/from the clinic as well as operation of the clinic (energy, water and solid waste). All emissions were calculated using the California Emission Estimator Model (CalEEMod 2016.3.2) (CARB 2017). Table 5-1 presents a summary of the emissions associated with the Proposed Action.

Table 5-1 Proposed Action Emissions

Emission Source	ROG	NOx	СО	SOx	PM ₁₀	PM _{2.5}
Total Construction Emissions, lbs/day	7.9	20.9	15.1	0.02	3.7	2.1
SCAQMD Significance Thresholds	75	100	550	150	150	55
Above Significance Thresholds?	No	No	No	No	No	No
Operational Emissions	1.05	5.4	8.1	0.03	2.3	0.6
Above Significance Thresholds?	No	No	No	No	No	No
Federal De Minimis Thresholds	10	10	100	N/A	70	100
Above <i>De Minimis</i> Thresholds?	No	No	No	No	No	No

LSTs have been developed by SCAQMD for emissions within areas up to five acres in size, with air pollutant modeling recommended for activity within larger areas. The SCAQMD provides lookup tables for project sites that measure one, two, or five acres. As referenced, the site is approximately three acres in size; however, it was assumed that two acres would be disturbed daily during construction. Thus, the associated look up table values for two acres were used to provide a conservative evaluation of potential impacts. The project site is located in Source Receptor Area 27 (SRA-27, Anza Area). LSTs for construction related emissions in the SRA 27 at varying distances between the source and receiving property are shown in Table 5-2.

Table 5-2 SCAQMD LSTs for Construction

	Allowable emissions as a function of receptor distance in meters from a two-acre site (lbs/day)				
Pollutant	25	50	100	200	500
Gradual conversion of NO _x to NO ₂	234	275	363	521	941
СО	1,100	1,572	2,781	6,399	25,412
PM ₁₀	7	20	38	75	186
PM _{2.5}	4	6	10	23	91

Source: http://www.aqmd.gov/CEQA/handbook/LST/appC.pdf, October 2009.

The nearest sensitive receptors are residential uses located approximately 3,000 feet (900 meters) west of the site. Consistent with SCAQMD recommendations, the 500-meter LSTs are used. As discussed, LSTs apply to on-site uses only and do not include off-site vehicle trips and emissions. LSTs are compared to estimated project emissions in Table 5-3.

Table 5-3 Estimated Maximum Daily On-Site Construction Emissions and LSTs

On-Site Construction Emissions	NOx	CO	PM ₁₀	PM _{2.5}
-Demolition	20.9	14.6	1.1	1.0
-Site Preparation	18.3	7.7	3.6	2.1
-Grading	15.0	6.4	2.9	1.7
-Building Construction	14.7	13.1	0.7	0.7
-Paving	8.4	8.8	0.4	0.4
- Architectural Coating	1.6	1.8	0.1	0.1
Local Significance Threshold – 25 meters (on-site only) ³	941	25,412	186	91
Threshold Exceeded	No	No	No	No

Notes: All calculations were made using CalEEMod. See the Appendix A. Grading, Paving, Building Construction, and Architectural Coating totals include worker trips, construction vehicle emissions and fugitive dust.

LSTs are for a 2-acre disturbance area in SRA-27 within 500 meters of sensitive properties boundary.

An evaluation of potential impacts based on significance criteria AIR-1 through AIR-4 is presented in the following sections.

5.1.1 <u>Criterion AIR-1: Conformance with Applicable Air Quality Management Plan</u>

The proposed project conforms with the SCAQMD's 2016 AQMP because air emissions would not exceed the CEQA thresholds presented in Tables 4-2 and 5-1. A less than significant impact would occur under this criterion.

5.1.2 Criterion AIR-2: Regional Air Quality Significance Thresholds

As shown in Table 5-1, emissions are below the CEQA and Federal De Minimis thresholds for ROG, NO_x, CO, SO_x, PM₁₀ and PM_{2.5}. As shown in Table 5-3, emissions would be below the LST limits. A less than significant impact would occur under this criterion.

5.1.3 <u>Criterion AIR-3: Federal General Conformity</u>

Emissions associated with the project are presumed to conform with the SIP because they are generated by use of a project site consistent with the approved land use plan. Further, emissions are below the SCAQMD thresholds shown in Tables 4-2, 5-1 and 5-3. The project would therefore conform to the applicable AQMP and SIP. Accordingly, a conformity determination is not required under 40 CFR Part 51.

5.1.4 Criterion AIR-4: Global Climate Change

Greenhouse gas emissions are addressed under cumulative impacts.

5.2 No Action Alternative

Under the No Action Alternative, the replacement clinic would not be constructed. Emissions associated with travel to/from existing medical facilities in the area would continue. The proposed project would be located in proximity to residents that would use the facility which would which would avoid the need to transport people out of the area for medical care. Impacts from dust, vehicle emissions associated with travel to other medical facilities in the area, and other sources would be unchanged from existing conditions under the No Action Alternative.

6 CUMULATIVE IMPACTS

There are no known past, present, and foreseeable future activities within the Project Area that could have the potential to result in cumulative air quality impacts. The project would provide necessary medical care for Tribal members and reduce the need to travel off the reservation for routine health care services. Because overall travel associated with obtaining medical care would be reduced from existing conditions, it is not anticipated that the project would result in long-term cumulatively considerable impacts.

Greenhouse gas emissions do not result in direct impacts (CNRA 2009). They are addressed only on a cumulative basis. Table 6-1 presents a summary of the estimated greenhouse gas emissions.

Table 6-1 Proposed Action Greenhouse Gas Emissions

Emission Source	CO ₂	CH ₄	N ₂ O		
Emissions, metric tons/year					
Construction Emissions	155.8 (5.19)	0.02	0.0		
Operating Emissions	463.08	0.4	0.01		
TOTAL	468.27	0.42	0.01		
CO ₂ Equivalent Total	468.7				

Total construction emissions are estimated to be 155.8 metric tons of CO2E. Amortized over the 30-year life of the project, a total of 5.19 metric tons was added to the operational emissions. Total CO2e emissions would be 396.3 metric tons. The estimated total is below the SCAQMD's proposed threshold of 3,000 metric tons of CO2e. The level is also below the 900-metric ton CO2E threshold proposed by the California Air Pollution Control Officers Association (CAPCOA) as a threshold below which further analysis is not required. This level of GHG emissions would not result in a cumulatively considerable impact on global climate.

7 RECOMMENDED MITIGATION MEASURES

The Cahuilla Band of Mission Indians of the Cahuilla Reservation Health Center Project would result in emissions related to both construction and operation of the proposed facility. Estimated emissions would not exceed SCAQMD or Federal *de minimis* thresholds; thus, no air quality mitigation is required.

REFERENCES

[CalEPA] California Environmental Protection Agency. 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. California Environmental Protection Agency, March. 2006. http://www.climatechange.ca.gov/climate action team/reports/2006report/2006-04-03 FINAL CAT REPORT.PDF. Accessed January 2018.

[CARB] California Air Resources Board. 2015, 2016, & 2017 Annual Air Quality Data Summaries, http://www.arb.ca.gov/adam/topfour/topfour1.php. Accessed November 2018.

[CARB] California Air Resources Board. Ambient Air Quality Standards. Updated February 2016. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-managementplans/naags-caags-feb2016.pdf Accessed December 2017.

[CEC] California Energy Commission. 2006. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF. Accessed January 2018.

[CNRA] California Natural Resources Agency. 2009. 2009 California Climate Adaptation Strategy. A Report to the Governor of the State of California in Response to Executive Order S-13-2008. http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF. Accessed January 2018.

[IPCC] Intergovernmental Panel on Climate Change. 2007. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change; Core Writing Team, Pachauri, R.K. and Reisinger, A. (Eds.) IPCC, Geneva, Switzerland.

[SCAQMD] South Coast Air Quality Management District. 1993. CEQA Air Quality Handbook

[SCAQMD] South Coast Air Quality Management District. 2015. Air Quality Significance Thresholds. March 2015. http://www.aqmd.gov/docs/default-source/cega/handbook/scaqmd-airquality-significance-thresholds.pdf

[SCAQMD] South Coast Air Quality Management District. 2016. Final 2016 Air Quality Management Plan. http://www.agmd.gov/docs/default-source/clean-air-plans/air-qualitymanagement-plans/2016-air-quality-management-plan/final-2016-agmp/final2016agmp.pdf. Accessed January 2018.

[SCAQMD] South Coast Air Quality Management District. 2017 California Emissions Estimator Model User Guide Version 2016.3.2. Prepared by BREEZE Software, A Division of Trinity Consultants. September 2017.

[SCAQMD] South Coast Air Quality Management District. 2011. Fact Sheet for Applying CalEEMod to Localized Significance Thresholds

[SCAQMD] South Coast Air Quality Management District. 2008. Final Localized Significant (LST) Thresholds Methodology. Revised July 2008.

[EPA] United States Environmental Protection Agency. 2017. De minimis tables. https://www.epa.gov/general-conformity/de-minimis-tables. Accessed January 2018.

Western Regional Climatic Center. 2018. Climate Summary for Hemet Station. www.wrcc.dri.edu.

Appendix A - Emission Calculations

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Cahuilla Health Center

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	11.60	1000sqft	0.27	11,600.00	0
Parking Lot	90.00	Space	0.81	36,000.00	0

1.2 Other Project Characteristics

UrbanizationUrbanWind Speed (m/s)2.4Precipitation Freq (Days)28

Climate Zone 10 Operational Year 2021

Utility Company Southern California Edison

 CO2 Intensity
 702.44
 CH4 Intensity
 0.029
 N20 Intensity
 0.006

 (lb/MWhr)
 (lb/MWhr)
 (lb/MWhr)
 (lb/MWhr)

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction schedule modified to match applicant's estimated timeline.

Grading - Two acre portion of site assumed to be graded daily for LST calculations

Construction Off-road Equipment Mitigation -

Area Mitigation -

Water Mitigation -

Waste Mitigation -

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Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	10.00	18.00
tblConstructionPhase	NumDays	200.00	110.00
tblConstructionPhase	PhaseEndDate	5/10/2021	12/31/2020
tblConstructionPhase	PhaseEndDate	4/12/2021	12/7/2020
tblConstructionPhase	PhaseEndDate	4/26/2021	12/21/2020
tblConstructionPhase	PhaseStartDate	4/27/2021	12/8/2020
tblConstructionPhase	PhaseStartDate	4/13/2021	12/8/2020
tblGrading	AcresOfGrading	1.50	2.00
tblGrading	AcresOfGrading	1.00	2.00

2.0 Emissions Summary

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2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					lb/d	day							lb/d	lay		
2020	7.9113	20.9854	15.1814	0.0262	6.4193	1.1534	7.2407	3.0347	1.0770	3.7904	0.0000	2,465.520 0	2,465.520 0	0.6006	0.0000	2,480.535 4
Maximum	7.9113	20.9854	15.1814	0.0262	6.4193	1.1534	7.2407	3.0347	1.0770	3.7904	0.0000	2,465.520 0	2,465.520 0	0.6006	0.0000	2,480.535 4

Mitigated Construction

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day												lb/d	lay		
2020	7.9113	20.9854	15.1814	0.0262	2.9378	1.1534	3.7593	1.3786	1.0770	2.1344	0.0000	2,465.520 0	2,465.520 0	0.6006	0.0000	2,480.535 4
Maximum	7.9113	20.9854	15.1814	0.0262	2.9378	1.1534	3.7593	1.3786	1.0770	2.1344	0.0000	2,465.520 0	2,465.520 0	0.6006	0.0000	2,480.535 4

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	54.23	0.00	48.08	54.57	0.00	43.69	0.00	0.00	0.00	0.00	0.00	0.00

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2.2 Overall Operational Unmitigated Operational

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/d	day		
Area	0.2756	1.0000e- 004	0.0104	0.0000		4.0000e- 005	4.0000e- 005		4.0000e- 005	4.0000e- 005		0.0222	0.0222	6.0000e- 005		0.0237
Energy	1.1900e- 003	0.0108	9.0800e- 003	6.0000e- 005		8.2000e- 004	8.2000e- 004		8.2000e- 004	8.2000e- 004		12.9741	12.9741	2.5000e- 004	2.4000e- 004	13.0512
Mobile	0.7792	5.4228	8.1125	0.0331	2.3185	0.0227	2.3412	0.6204	0.0213	0.6417		3,376.854 0	3,376.854 0	0.1802		3,381.359 6
Total	1.0560	5.4337	8.1320	0.0332	2.3185	0.0236	2.3421	0.6204	0.0222	0.6425		3,389.850 3	3,389.850 3	0.1805	2.4000e- 004	3,394.434 5

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Area	0.2756	1.0000e- 004	0.0104	0.0000		4.0000e- 005	4.0000e- 005		4.0000e- 005	4.0000e- 005		0.0222	0.0222	6.0000e- 005		0.0237
Energy	1.1900e- 003	0.0108	9.0800e- 003	6.0000e- 005		8.2000e- 004	8.2000e- 004		8.2000e- 004	8.2000e- 004		12.9741	12.9741	2.5000e- 004	2.4000e- 004	13.0512
Mobile	0.7792	5.4228	8.1125	0.0331	2.3185	0.0227	2.3412	0.6204	0.0213	0.6417		3,376.854 0	3,376.854 0	0.1802		3,381.359 6
Total	1.0560	5.4337	8.1320	0.0332	2.3185	0.0236	2.3421	0.6204	0.0222	0.6425		3,389.850 3	3,389.850 3	0.1805	2.4000e- 004	3,394.434 5

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	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2020	6/26/2020	5	20	
2	Site Preparation	Site Preparation	6/27/2020	6/30/2020	5	2	
3	Grading	Grading	7/1/2020	7/6/2020	5	4	
4	Building Construction	Building Construction	7/7/2020	12/7/2020	5	110	
5	Paving	Paving	12/8/2020	12/21/2020	5	10	
6	Architectural Coating	Architectural Coating	12/8/2020	12/31/2020	5	18	

Acres of Grading (Site Preparation Phase): 2

Acres of Grading (Grading Phase): 2

Acres of Paving: 0.81

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 17,400; Non-Residential Outdoor: 5,800; Striped Parking Area: 2,160 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

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Cahuilla Health Center - Riverside-South Coast County, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	19.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 **Demolition - 2020**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761		2,322.312 7	2,322.312 7	0.5970		2,337.236 3
Total	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761		2,322.312 7	2,322.312 7	0.5970		2,337.236 3

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3.2 Demolition - 2020

<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	 	0.0000
Worker	0.0662	0.0391	0.5242	1.4400e- 003	0.1453	8.8000e- 004	0.1462	0.0385	8.1000e- 004	0.0394		143.2073	143.2073	3.6700e- 003	 	143.2991
Total	0.0662	0.0391	0.5242	1.4400e- 003	0.1453	8.8000e- 004	0.1462	0.0385	8.1000e- 004	0.0394		143.2073	143.2073	3.6700e- 003		143.2991

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761	0.0000	2,322.312 7	2,322.312 7	0.5970		2,337.236 3
Total	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761	0.0000	2,322.312 7	2,322.312 7	0.5970		2,337.236 3

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3.2 Demolition - 2020 Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0391	0.5242	1.4400e- 003	0.1453	8.8000e- 004	0.1462	0.0385	8.1000e- 004	0.0394		143.2073	143.2073	3.6700e- 003		143.2991
Total	0.0662	0.0391	0.5242	1.4400e- 003	0.1453	8.8000e- 004	0.1462	0.0385	8.1000e- 004	0.0394		143.2073	143.2073	3.6700e- 003		143.2991

3.3 Site Preparation - 2020

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Fugitive Dust	 				6.3298	0.0000	6.3298	3.0110	0.0000	3.0110			0.0000			0.0000
Off-Road	1.6299	18.3464	7.7093	0.0172		0.8210	0.8210		0.7553	0.7553		1,667.4119	1,667.4119	0.5393	 	1,680.893 7
Total	1.6299	18.3464	7.7093	0.0172	6.3298	0.8210	7.1508	3.0110	0.7553	3.7662		1,667.411 9	1,667.411 9	0.5393		1,680.893 7

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3.3 Site Preparation - 2020

<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0407	0.0241	0.3226	8.8000e- 004	0.0894	5.4000e- 004	0.0900	0.0237	5.0000e- 004	0.0242		88.1276	88.1276	2.2600e- 003		88.1840
Total	0.0407	0.0241	0.3226	8.8000e- 004	0.0894	5.4000e- 004	0.0900	0.0237	5.0000e- 004	0.0242		88.1276	88.1276	2.2600e- 003		88.1840

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	day							lb/c	lay		
Fugitive Dust					2.8484	0.0000	2.8484	1.3549	0.0000	1.3549			0.0000			0.0000
Off-Road	1.6299	18.3464	7.7093	0.0172	 	0.8210	0.8210		0.7553	0.7553	0.0000	1,667.4119	1,667.4119	0.5393		1,680.893 7
Total	1.6299	18.3464	7.7093	0.0172	2.8484	0.8210	3.6694	1.3549	0.7553	2.1102	0.0000	1,667.411 9	1,667.411 9	0.5393		1,680.893 7

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3.3 Site Preparation - 2020 Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0407	0.0241	0.3226	8.8000e- 004	0.0894	5.4000e- 004	0.0900	0.0237	5.0000e- 004	0.0242		88.1276	88.1276	2.2600e- 003		88.1840
Total	0.0407	0.0241	0.3226	8.8000e- 004	0.0894	5.4000e- 004	0.0900	0.0237	5.0000e- 004	0.0242		88.1276	88.1276	2.2600e- 003		88.1840

3.4 Grading - 2020

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Fugitive Dust					5.0468	0.0000	5.0468	2.5399	0.0000	2.5399			0.0000			0.0000
Off-Road	1.3498	15.0854	6.4543	0.0141	 	0.6844	0.6844		0.6296	0.6296		1,365.718 3	1,365.718 3	0.4417	 	1,376.760 9
Total	1.3498	15.0854	6.4543	0.0141	5.0468	0.6844	5.7312	2.5399	0.6296	3.1696		1,365.718 3	1,365.718 3	0.4417		1,376.760 9

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3.4 Grading - 2020
Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0407	0.0241	0.3226	8.8000e- 004	0.0894	5.4000e- 004	0.0900	0.0237	5.0000e- 004	0.0242		88.1276	88.1276	2.2600e- 003		88.1840
Total	0.0407	0.0241	0.3226	8.8000e- 004	0.0894	5.4000e- 004	0.0900	0.0237	5.0000e- 004	0.0242		88.1276	88.1276	2.2600e- 003		88.1840

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Fugitive Dust	ii ii				2.2711	0.0000	2.2711	1.1430	0.0000	1.1430			0.0000		: :	0.0000
Off-Road	1.3498	15.0854	6.4543	0.0141		0.6844	0.6844	 	0.6296	0.6296	0.0000	1,365.718 3	1,365.718 3	0.4417	i ! !	1,376.760 9
Total	1.3498	15.0854	6.4543	0.0141	2.2711	0.6844	2.9555	1.1430	0.6296	1.7726	0.0000	1,365.718 3	1,365.718 3	0.4417		1,376.760 9

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3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0407	0.0241	0.3226	8.8000e- 004	0.0894	5.4000e- 004	0.0900	0.0237	5.0000e- 004	0.0242		88.1276	88.1276	2.2600e- 003		88.1840
Total	0.0407	0.0241	0.3226	8.8000e- 004	0.0894	5.4000e- 004	0.0900	0.0237	5.0000e- 004	0.0242		88.1276	88.1276	2.2600e- 003		88.1840

3.5 Building Construction - 2020

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.159 5	2,001.159 5	0.3715		2,010.446 7
Total	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.159 5	2,001.159 5	0.3715		2,010.446 7

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3.5 Building Construction - 2020 Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0223	0.8231	0.1506	2.0900e- 003	0.0512	4.6800e- 003	0.0559	0.0148	4.4800e- 003	0.0192		220.3127	220.3127	0.0165	 	220.7259
Worker	0.0967	0.0572	0.7661	2.1000e- 003	0.2124	1.2900e- 003	0.2137	0.0563	1.1800e- 003	0.0575		209.3030	209.3030	5.3600e- 003	 	209.4371
Total	0.1190	0.8803	0.9167	4.1900e- 003	0.2636	5.9700e- 003	0.2696	0.0711	5.6600e- 003	0.0767		429.6157	429.6157	0.0219		430.1629

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.159 5	2,001.159 5	0.3715		2,010.446 7
Total	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.159 5	2,001.159 5	0.3715		2,010.446 7

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3.5 Building Construction - 2020 Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0223	0.8231	0.1506	2.0900e- 003	0.0512	4.6800e- 003	0.0559	0.0148	4.4800e- 003	0.0192		220.3127	220.3127	0.0165	 	220.7259
Worker	0.0967	0.0572	0.7661	2.1000e- 003	0.2124	1.2900e- 003	0.2137	0.0563	1.1800e- 003	0.0575		209.3030	209.3030	5.3600e- 003	 	209.4371
Total	0.1190	0.8803	0.9167	4.1900e- 003	0.2636	5.9700e- 003	0.2696	0.0711	5.6600e- 003	0.0767		429.6157	429.6157	0.0219		430.1629

3.6 Paving - 2020

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	day							lb/d	day		
Off-Road	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.946 1	1,296.946 1	0.4111		1,307.224 6
	0.2122		1 1 1	i i	 	0.0000	0.0000	1 1 1	0.0000	0.0000		 	0.0000		 	0.0000
Total	1.0524	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.946 1	1,296.946 1	0.4111		1,307.224 6

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3.6 Paving - 2020
Unmitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0391	0.5242	1.4400e- 003	0.1453	8.8000e- 004	0.1462	0.0385	8.1000e- 004	0.0394		143.2073	143.2073	3.6700e- 003		143.2991
Total	0.0662	0.0391	0.5242	1.4400e- 003	0.1453	8.8000e- 004	0.1462	0.0385	8.1000e- 004	0.0394		143.2073	143.2073	3.6700e- 003		143.2991

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	day							lb/c	day		
Off-Road	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.946 1	1,296.946 1	0.4111		1,307.224 6
Paving	0.2122		 	 	 	0.0000	0.0000	 	0.0000	0.0000			0.0000		 	0.0000
Total	1.0524	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.946 1	1,296.946 1	0.4111		1,307.224 6

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3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0391	0.5242	1.4400e- 003	0.1453	8.8000e- 004	0.1462	0.0385	8.1000e- 004	0.0394		143.2073	143.2073	3.6700e- 003		143.2991
Total	0.0662	0.0391	0.5242	1.4400e- 003	0.1453	8.8000e- 004	0.1462	0.0385	8.1000e- 004	0.0394		143.2073	143.2073	3.6700e- 003		143.2991

3.7 Architectural Coating - 2020

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Archit. Coating	6.5302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
	0.2422	1.6838	1.8314	2.9700e- 003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218	 	281.9928
Total	6.7724	1.6838	1.8314	2.9700e- 003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928

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3.7 Architectural Coating - 2020 Unmitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0204	0.0120	0.1613	4.4000e- 004	0.0447	2.7000e- 004	0.0450	0.0119	2.5000e- 004	0.0121		44.0638	44.0638	1.1300e- 003		44.0920
Total	0.0204	0.0120	0.1613	4.4000e- 004	0.0447	2.7000e- 004	0.0450	0.0119	2.5000e- 004	0.0121		44.0638	44.0638	1.1300e- 003		44.0920

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Archit. Coating	6.5302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e- 003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218	 	281.9928
Total	6.7724	1.6838	1.8314	2.9700e- 003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928

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3.7 Architectural Coating - 2020 Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0204	0.0120	0.1613	4.4000e- 004	0.0447	2.7000e- 004	0.0450	0.0119	2.5000e- 004	0.0121		44.0638	44.0638	1.1300e- 003		44.0920
Total	0.0204	0.0120	0.1613	4.4000e- 004	0.0447	2.7000e- 004	0.0450	0.0119	2.5000e- 004	0.0121		44.0638	44.0638	1.1300e- 003		44.0920

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Cahuilla Health Center - Riverside-South Coast County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Mitigated	0.7792	5.4228	8.1125	0.0331	2.3185	0.0227	2.3412	0.6204	0.0213	0.6417		3,376.854 0	3,376.854 0	0.1802		3,381.359 6
Unmitigated	0.7792	5.4228	8.1125	0.0331	2.3185	0.0227	2.3412	0.6204	0.0213	0.6417		3,376.854 0	3,376.854 0	0.1802		3,381.359 6

4.2 Trip Summary Information

	Ave	rage Daily Trip Ra	ate	Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	419.11	103.94	17.98	821,681	821,681
Parking Lot	0.00	0.00	0.00		
Total	419.11	103.94	17.98	821,681	821,681

4.3 Trip Type Information

		Miles			Trip %			Trip Purpos	e %
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Medical Office Building	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038
Parking Lot	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	day		
NaturalGas Mitigated	1.1900e- 003	0.0108	9.0800e- 003	6.0000e- 005		8.2000e- 004	8.2000e- 004		8.2000e- 004	8.2000e- 004		12.9741	12.9741	2.5000e- 004	2.4000e- 004	13.0512
NaturalGas Unmitigated	1.1900e- 003	0.0108	9.0800e- 003	6.0000e- 005		8.2000e- 004	8.2000e- 004		8.2000e- 004	8.2000e- 004		12.9741	12.9741	2.5000e- 004	2.4000e- 004	13.0512

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5.2 Energy by Land Use - NaturalGas <u>Unmitigated</u>

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/d	day							lb/c	lay		
Medical Office Building	110.279	1.1900e- 003	0.0108	9.0800e- 003	6.0000e- 005		8.2000e- 004	8.2000e- 004		8.2000e- 004	8.2000e- 004	1	12.9741	12.9741	2.5000e- 004	2.4000e- 004	13.0512
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.1900e- 003	0.0108	9.0800e- 003	6.0000e- 005		8.2000e- 004	8.2000e- 004		8.2000e- 004	8.2000e- 004		12.9741	12.9741	2.5000e- 004	2.4000e- 004	13.0512

Mitigated

	NaturalGa s Use	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/d	day							lb/c	lay		
Medical Office Building	0.110279	1.1900e- 003	0.0108	9.0800e- 003	6.0000e- 005		8.2000e- 004	8.2000e- 004		8.2000e- 004	8.2000e- 004		12.9741	12.9741	2.5000e- 004	2.4000e- 004	13.0512
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.1900e- 003	0.0108	9.0800e- 003	6.0000e- 005		8.2000e- 004	8.2000e- 004		8.2000e- 004	8.2000e- 004		12.9741	12.9741	2.5000e- 004	2.4000e- 004	13.0512

6.0 Area Detail

6.1 Mitigation Measures Area

Cahuilla Health Center - Riverside-South Coast County, Summer

Use Low VOC Paint - Non-Residential Interior
Use Low VOC Paint - Non-Residential Exterior
No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/d	lay		
Mitigated	0.2756	1.0000e- 004	0.0104	0.0000		4.0000e- 005	4.0000e- 005		4.0000e- 005	4.0000e- 005		0.0222	0.0222	6.0000e- 005		0.0237
Ommigatou	0.2756	1.0000e- 004	0.0104	0.0000		4.0000e- 005	4.0000e- 005		4.0000e- 005	4.0000e- 005		0.0222	0.0222	6.0000e- 005		0.0237

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6.2 Area by SubCategory <u>Unmitigated</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory		lb/day											lb/d	day		
Architectural Coating	0.0322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2424		 			0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.7000e- 004	1.0000e- 004	0.0104	0.0000		4.0000e- 005	4.0000e- 005		4.0000e- 005	4.0000e- 005		0.0222	0.0222	6.0000e- 005		0.0237
Total	0.2756	1.0000e- 004	0.0104	0.0000		4.0000e- 005	4.0000e- 005		4.0000e- 005	4.0000e- 005		0.0222	0.0222	6.0000e- 005		0.0237

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					lb/d	day							lb/d	day		
Architectural Coating	0.0322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2424		1 			0.0000	0.0000	1 	0.0000	0.0000		;	0.0000			0.0000
Landscaping	9.7000e- 004	1.0000e- 004	0.0104	0.0000		4.0000e- 005	4.0000e- 005	1 1 1 1	4.0000e- 005	4.0000e- 005		0.0222	0.0222	6.0000e- 005		0.0237
Total	0.2756	1.0000e- 004	0.0104	0.0000		4.0000e- 005	4.0000e- 005		4.0000e- 005	4.0000e- 005		0.0222	0.0222	6.0000e- 005		0.0237

7.0 Water Detail

Cahuilla Health Center - Riverside-South Coast County, Summer

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
, , , , , ,		•	•			7.

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	11.60	1000sqft	0.27	11,600.00	0
Parking Lot	90.00	Space	0.81	36,000.00	0

1.2 Other Project Characteristics

UrbanizationUrbanWind Speed (m/s)2.4Precipitation Freq (Days)28Climate Zone10Operational Year2021

Utility Company Southern California Edison

 CO2 Intensity
 702.44
 CH4 Intensity
 0.029
 N20 Intensity
 0.006

 (lb/MWhr)
 (lb/MWhr)
 (lb/MWhr)
 (lb/MWhr)

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction schedule modified to match applicant's estimated timeline.

Grading - Two acre portion of site assumed to be graded daily for LST calculations

Construction Off-road Equipment Mitigation -

Area Mitigation -

Water Mitigation -

Waste Mitigation -

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Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	10.00	18.00
tblConstructionPhase	NumDays	200.00	110.00
tblConstructionPhase	PhaseEndDate	5/10/2021	12/31/2020
tblConstructionPhase	PhaseEndDate	4/12/2021	12/7/2020
tblConstructionPhase	PhaseEndDate	4/26/2021	12/21/2020
tblConstructionPhase	PhaseStartDate	4/27/2021	12/8/2020
tblConstructionPhase	PhaseStartDate	4/13/2021	12/8/2020
tblGrading	AcresOfGrading	1.50	2.00
tblGrading	AcresOfGrading	1.00	2.00

2.0 Emissions Summary

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2.1 Overall Construction <u>Unmitigated Construction</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					ton	s/yr							MT	/yr		
2020	0.2107	1.1787	1.0071	1.8400e- 003	0.0335	0.0612	0.0947	0.0127	0.0586	0.0712	0.0000	155.8609	155.8609	0.0285	0.0000	156.5722
Maximum	0.2107	1.1787	1.0071	1.8400e- 003	0.0335	0.0612	0.0947	0.0127	0.0586	0.0712	0.0000	155.8609	155.8609	0.0285	0.0000	156.5722

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					ton	s/yr							MT	-/yr		
2020	0.2107	1.1787	1.0071	1.8400e- 003	0.0245	0.0612	0.0856	8.2400e- 003	0.0586	0.0668	0.0000	155.8608	155.8608	0.0285	0.0000	156.5720
Maximum	0.2107	1.1787	1.0071	1.8400e- 003	0.0245	0.0612	0.0856	8.2400e- 003	0.0586	0.0668	0.0000	155.8608	155.8608	0.0285	0.0000	156.5720

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	26.96	0.00	9.55	35.07	0.00	6.25	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2020	8-31-2020	0.6356	0.6356
2	9-1-2020	9-30-2020	0.1909	0.1909
		Highest	0.6356	0.6356

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	⁻ /yr		
Area	0.0502	1.0000e- 005	1.3000e- 003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5200e- 003	2.5200e- 003	1.0000e- 005	0.0000	2.6900e- 003
Energy	2.2000e- 004	1.9700e- 003	1.6600e- 003	1.0000e- 005		1.5000e- 004	1.5000e- 004	1 1 1	1.5000e- 004	1.5000e- 004	0.0000	41.3486	41.3486	1.6600e- 003	3.7000e- 004	41.5016
Mobile	0.0903	0.7564	1.0077	4.2900e- 003	0.3137	3.1300e- 003	0.3169	0.0841	2.9400e- 003	0.0870	0.0000	398.0455	398.0455	0.0227	0.0000	398.6129
Waste	r,					0.0000	0.0000	1 	0.0000	0.0000	25.4307	0.0000	25.4307	1.5029	0.0000	63.0035
Water	r, 					0.0000	0.0000	1 1 1 1	0.0000	0.0000	0.4618	7.0203	7.4821	0.0477	1.1800e- 003	9.0267
Total	0.1407	0.7584	1.0107	4.3000e- 003	0.3137	3.2800e- 003	0.3170	0.0841	3.0900e- 003	0.0872	25.8925	446.4169	472.3094	1.5750	1.5500e- 003	512.1474

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Area	0.0502	1.0000e- 005	1.3000e- 003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5200e- 003	2.5200e- 003	1.0000e- 005	0.0000	2.6900e- 003
Energy	2.2000e- 004	1.9700e- 003	1.6600e- 003	1.0000e- 005		1.5000e- 004	1.5000e- 004		1.5000e- 004	1.5000e- 004	0.0000	41.3486	41.3486	1.6600e- 003	3.7000e- 004	41.5016
Mobile	0.0903	0.7564	1.0077	4.2900e- 003	0.3137	3.1300e- 003	0.3169	0.0841	2.9400e- 003	0.0870	0.0000	398.0455	398.0455	0.0227	0.0000	398.6129
Waste	F;	 				0.0000	0.0000		0.0000	0.0000	6.3577	0.0000	6.3577	0.3757	0.0000	15.7509
Water	F;	 				0.0000	0.0000		0.0000	0.0000	0.3694	5.6162	5.9857	0.0382	9.4000e- 004	7.2213
Total	0.1407	0.7584	1.0107	4.3000e- 003	0.3137	3.2800e- 003	0.3170	0.0841	3.0900e- 003	0.0872	6.7271	445.0128	451.7399	0.4383	1.3100e- 003	463.0895

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.02	0.31	4.36	72.17	15.48	9.58

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2020	6/26/2020	5	20	
2	Site Preparation	Site Preparation	6/27/2020	6/30/2020	5	2	
3	Grading	Grading	7/1/2020	7/6/2020	5	4	
4	Building Construction	Building Construction	7/7/2020	12/7/2020	5	110	
5	Paving	Paving	12/8/2020	12/21/2020	5	10	
6	Architectural Coating	Architectural Coating	12/8/2020	12/31/2020	5	18	

Acres of Grading (Site Preparation Phase): 2

Acres of Grading (Grading Phase): 2

Acres of Paving: 0.81

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 17,400; Non-Residential Outdoor: 5,800; Striped Parking Area: 2,160 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	19.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 **Demolition - 2020**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
	0.0213	0.2095	0.1466	2.4000e- 004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0677	21.0677	5.4200e- 003	0.0000	21.2031	
Total	0.0213	0.2095	0.1466	2.4000e- 004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0677	21.0677	5.4200e- 003	0.0000	21.2031	

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3.2 Demolition - 2020

<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e			
Category	tons/yr											MT/yr							
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			
Worker	6.0000e- 004	4.2000e- 004	4.4700e- 003	1.0000e- 005	1.4300e- 003	1.0000e- 005	1.4400e- 003	3.8000e- 004	1.0000e- 005	3.9000e- 004	0.0000	1.1955	1.1955	3.0000e- 005	0.0000	1.1962			
Total	6.0000e- 004	4.2000e- 004	4.4700e- 003	1.0000e- 005	1.4300e- 003	1.0000e- 005	1.4400e- 003	3.8000e- 004	1.0000e- 005	3.9000e- 004	0.0000	1.1955	1.1955	3.0000e- 005	0.0000	1.1962			

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Category	tons/yr											MT/yr						
Off-Road	0.0213	0.2095	0.1466	2.4000e- 004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0676	21.0676	5.4200e- 003	0.0000	21.2030		
Total	0.0213	0.2095	0.1466	2.4000e- 004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0676	21.0676	5.4200e- 003	0.0000	21.2030		

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3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e		
Category	tons/yr										MT/yr							
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Worker	6.0000e- 004	4.2000e- 004	4.4700e- 003	1.0000e- 005	1.4300e- 003	1.0000e- 005	1.4400e- 003	3.8000e- 004	1.0000e- 005	3.9000e- 004	0.0000	1.1955	1.1955	3.0000e- 005	0.0000	1.1962		
Total	6.0000e- 004	4.2000e- 004	4.4700e- 003	1.0000e- 005	1.4300e- 003	1.0000e- 005	1.4400e- 003	3.8000e- 004	1.0000e- 005	3.9000e- 004	0.0000	1.1955	1.1955	3.0000e- 005	0.0000	1.1962		

3.3 Site Preparation - 2020

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e				
Category	tons/yr											MT/yr								
Fugitive Dust					6.3300e- 003	0.0000	6.3300e- 003	3.0100e- 003	0.0000	3.0100e- 003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
Off-Road	1.6300e- 003	0.0184	7.7100e- 003	2.0000e- 005		8.2000e- 004	8.2000e- 004		7.6000e- 004	7.6000e- 004	0.0000	1.5127	1.5127	4.9000e- 004	0.0000	1.5249				
Total	1.6300e- 003	0.0184	7.7100e- 003	2.0000e- 005	6.3300e- 003	8.2000e- 004	7.1500e- 003	3.0100e- 003	7.6000e- 004	3.7700e- 003	0.0000	1.5127	1.5127	4.9000e- 004	0.0000	1.5249				

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3.3 Site Preparation - 2020

<u>Unmitigated Construction Off-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e- 005	3.0000e- 005	2.8000e- 004	0.0000	9.0000e- 005	0.0000	9.0000e- 005	2.0000e- 005	0.0000	2.0000e- 005	0.0000	0.0736	0.0736	0.0000	0.0000	0.0736
Total	4.0000e- 005	3.0000e- 005	2.8000e- 004	0.0000	9.0000e- 005	0.0000	9.0000e- 005	2.0000e- 005	0.0000	2.0000e- 005	0.0000	0.0736	0.0736	0.0000	0.0000	0.0736

Mitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Fugitive Dust					2.8500e- 003	0.0000	2.8500e- 003	1.3500e- 003	0.0000	1.3500e- 003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e- 003	0.0184	7.7100e- 003	2.0000e- 005		8.2000e- 004	8.2000e- 004	 	7.6000e- 004	7.6000e- 004	0.0000	1.5127	1.5127	4.9000e- 004	0.0000	1.5249
Total	1.6300e- 003	0.0184	7.7100e- 003	2.0000e- 005	2.8500e- 003	8.2000e- 004	3.6700e- 003	1.3500e- 003	7.6000e- 004	2.1100e- 003	0.0000	1.5127	1.5127	4.9000e- 004	0.0000	1.5249

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3.3 Site Preparation - 2020 Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e- 005	3.0000e- 005	2.8000e- 004	0.0000	9.0000e- 005	0.0000	9.0000e- 005	2.0000e- 005	0.0000	2.0000e- 005	0.0000	0.0736	0.0736	0.0000	0.0000	0.0736
Total	4.0000e- 005	3.0000e- 005	2.8000e- 004	0.0000	9.0000e- 005	0.0000	9.0000e- 005	2.0000e- 005	0.0000	2.0000e- 005	0.0000	0.0736	0.0736	0.0000	0.0000	0.0736

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	⁻/yr		
Fugitive Dust					0.0101	0.0000	0.0101	5.0800e- 003	0.0000	5.0800e- 003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	2.7000e- 003	0.0302	0.0129	3.0000e- 005		1.3700e- 003	1.3700e- 003		1.2600e- 003	1.2600e- 003	0.0000	2.4779	2.4779	8.0000e- 004	0.0000	2.4980
Total	2.7000e- 003	0.0302	0.0129	3.0000e- 005	0.0101	1.3700e- 003	0.0115	5.0800e- 003	1.2600e- 003	6.3400e- 003	0.0000	2.4779	2.4779	8.0000e- 004	0.0000	2.4980

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3.4 Grading - 2020
Unmitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
I Worker	7.0000e- 005	5.0000e- 005	5.5000e- 004	0.0000	1.8000e- 004	0.0000	1.8000e- 004	5.0000e- 005	0.0000	5.0000e- 005	0.0000	0.1471	0.1471	0.0000	0.0000	0.1472
Total	7.0000e- 005	5.0000e- 005	5.5000e- 004	0.0000	1.8000e- 004	0.0000	1.8000e- 004	5.0000e- 005	0.0000	5.0000e- 005	0.0000	0.1471	0.1471	0.0000	0.0000	0.1472

Mitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Fugitive Dust					4.5400e- 003	0.0000	4.5400e- 003	2.2900e- 003	0.0000	2.2900e- 003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e- 003	0.0302	0.0129	3.0000e- 005		1.3700e- 003	1.3700e- 003	 	1.2600e- 003	1.2600e- 003	0.0000	2.4779	2.4779	8.0000e- 004	0.0000	2.4980
Total	2.7000e- 003	0.0302	0.0129	3.0000e- 005	4.5400e- 003	1.3700e- 003	5.9100e- 003	2.2900e- 003	1.2600e- 003	3.5500e- 003	0.0000	2.4779	2.4779	8.0000e- 004	0.0000	2.4980

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3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							МТ	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	7.0000e- 005	5.0000e- 005	5.5000e- 004	0.0000	1.8000e- 004	0.0000	1.8000e- 004	5.0000e- 005	0.0000	5.0000e- 005	0.0000	0.1471	0.1471	0.0000	0.0000	0.1472
Total	7.0000e- 005	5.0000e- 005	5.5000e- 004	0.0000	1.8000e- 004	0.0000	1.8000e- 004	5.0000e- 005	0.0000	5.0000e- 005	0.0000	0.1471	0.1471	0.0000	0.0000	0.1472

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
	0.1117	0.8134	0.7253	1.2100e- 003		0.0438	0.0438	 	0.0423	0.0423	0.0000	99.8482	99.8482	0.0185	0.0000	100.3116
Total	0.1117	0.8134	0.7253	1.2100e- 003		0.0438	0.0438		0.0423	0.0423	0.0000	99.8482	99.8482	0.0185	0.0000	100.3116

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3.5 Building Construction - 2020 Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2500e- 003	0.0458	8.9500e- 003	1.1000e- 004	2.7800e- 003	2.6000e- 004	3.0400e- 003	8.0000e- 004	2.5000e- 004	1.0500e- 003	0.0000	10.8191	10.8191	8.6000e- 004	0.0000	10.8407
Worker	4.8000e- 003	3.3700e- 003	0.0359	1.1000e- 004	0.0115	7.0000e- 005	0.0116	3.0500e- 003	7.0000e- 005	3.1200e- 003	0.0000	9.6097	9.6097	2.4000e- 004	0.0000	9.6158
Total	6.0500e- 003	0.0491	0.0449	2.2000e- 004	0.0143	3.3000e- 004	0.0146	3.8500e- 003	3.2000e- 004	4.1700e- 003	0.0000	20.4288	20.4288	1.1000e- 003	0.0000	20.4564

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
	0.1117	0.8134	0.7253	1.2100e- 003		0.0438	0.0438		0.0423	0.0423	0.0000	99.8481	99.8481	0.0185	0.0000	100.3114
Total	0.1117	0.8134	0.7253	1.2100e- 003		0.0438	0.0438		0.0423	0.0423	0.0000	99.8481	99.8481	0.0185	0.0000	100.3114

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3.5 Building Construction - 2020 Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2500e- 003	0.0458	8.9500e- 003	1.1000e- 004	2.7800e- 003	2.6000e- 004	3.0400e- 003	8.0000e- 004	2.5000e- 004	1.0500e- 003	0.0000	10.8191	10.8191	8.6000e- 004	0.0000	10.8407
Worker	4.8000e- 003	3.3700e- 003	0.0359	1.1000e- 004	0.0115	7.0000e- 005	0.0116	3.0500e- 003	7.0000e- 005	3.1200e- 003	0.0000	9.6097	9.6097	2.4000e- 004	0.0000	9.6158
Total	6.0500e- 003	0.0491	0.0449	2.2000e- 004	0.0143	3.3000e- 004	0.0146	3.8500e- 003	3.2000e- 004	4.1700e- 003	0.0000	20.4288	20.4288	1.1000e- 003	0.0000	20.4564

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
	4.2000e- 003	0.0423	0.0444	7.0000e- 005	_	2.3500e- 003	2.3500e- 003		2.1600e- 003	2.1600e- 003	0.0000	5.8829	5.8829	1.8600e- 003	0.0000	5.9295
Paving	1.0600e- 003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.2600e- 003	0.0423	0.0444	7.0000e- 005		2.3500e- 003	2.3500e- 003		2.1600e- 003	2.1600e- 003	0.0000	5.8829	5.8829	1.8600e- 003	0.0000	5.9295

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3.6 Paving - 2020
Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e- 004	2.1000e- 004	2.2400e- 003	1.0000e- 005	7.1000e- 004	0.0000	7.2000e- 004	1.9000e- 004	0.0000	1.9000e- 004	0.0000	0.5977	0.5977	1.0000e- 005	0.0000	0.5981
Total	3.0000e- 004	2.1000e- 004	2.2400e- 003	1.0000e- 005	7.1000e- 004	0.0000	7.2000e- 004	1.9000e- 004	0.0000	1.9000e- 004	0.0000	0.5977	0.5977	1.0000e- 005	0.0000	0.5981

Mitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Off-Road	4.2000e- 003	0.0423	0.0444	7.0000e- 005		2.3500e- 003	2.3500e- 003		2.1600e- 003	2.1600e- 003	0.0000	5.8828	5.8828	1.8600e- 003	0.0000	5.9295
Paving	1.0600e- 003			i		0.0000	0.0000	1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.2600e- 003	0.0423	0.0444	7.0000e- 005		2.3500e- 003	2.3500e- 003		2.1600e- 003	2.1600e- 003	0.0000	5.8828	5.8828	1.8600e- 003	0.0000	5.9295

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3.6 Paving - 2020 Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							МТ	/уг		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e- 004	2.1000e- 004	2.2400e- 003	1.0000e- 005	7.1000e- 004	0.0000	7.2000e- 004	1.9000e- 004	0.0000	1.9000e- 004	0.0000	0.5977	0.5977	1.0000e- 005	0.0000	0.5981
Total	3.0000e- 004	2.1000e- 004	2.2400e- 003	1.0000e- 005	7.1000e- 004	0.0000	7.2000e- 004	1.9000e- 004	0.0000	1.9000e- 004	0.0000	0.5977	0.5977	1.0000e- 005	0.0000	0.5981

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Archit. Coating	0.0588					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1800e- 003	0.0152	0.0165	3.0000e- 005		1.0000e- 003	1.0000e- 003	1 1 1	1.0000e- 003	1.0000e- 003	0.0000	2.2979	2.2979	1.8000e- 004	0.0000	2.3024
Total	0.0610	0.0152	0.0165	3.0000e- 005		1.0000e- 003	1.0000e- 003		1.0000e- 003	1.0000e- 003	0.0000	2.2979	2.2979	1.8000e- 004	0.0000	2.3024

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3.7 Architectural Coating - 2020 Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e- 004	1.2000e- 004	1.2400e- 003	0.0000	4.0000e- 004	0.0000	4.0000e- 004	1.1000e- 004	0.0000	1.1000e- 004	0.0000	0.3311	0.3311	1.0000e- 005	0.0000	0.3313
Total	1.7000e- 004	1.2000e- 004	1.2400e- 003	0.0000	4.0000e- 004	0.0000	4.0000e- 004	1.1000e- 004	0.0000	1.1000e- 004	0.0000	0.3311	0.3311	1.0000e- 005	0.0000	0.3313

Mitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Archit. Coating	0.0588					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1800e- 003	0.0152	0.0165	3.0000e- 005		1.0000e- 003	1.0000e- 003	 	1.0000e- 003	1.0000e- 003	0.0000	2.2979	2.2979	1.8000e- 004	0.0000	2.3024
Total	0.0610	0.0152	0.0165	3.0000e- 005		1.0000e- 003	1.0000e- 003		1.0000e- 003	1.0000e- 003	0.0000	2.2979	2.2979	1.8000e- 004	0.0000	2.3024

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3.7 Architectural Coating - 2020 Mitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e- 004	1.2000e- 004	1.2400e- 003	0.0000	4.0000e- 004	0.0000	4.0000e- 004	1.1000e- 004	0.0000	1.1000e- 004	0.0000	0.3311	0.3311	1.0000e- 005	0.0000	0.3313
Total	1.7000e- 004	1.2000e- 004	1.2400e- 003	0.0000	4.0000e- 004	0.0000	4.0000e- 004	1.1000e- 004	0.0000	1.1000e- 004	0.0000	0.3311	0.3311	1.0000e- 005	0.0000	0.3313

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Mitigated	0.0903	0.7564	1.0077	4.2900e- 003	0.3137	3.1300e- 003	0.3169	0.0841	2.9400e- 003	0.0870	0.0000	398.0455	398.0455	0.0227	0.0000	398.6129
Unmitigated	0.0903	0.7564	1.0077	4.2900e- 003	0.3137	3.1300e- 003	0.3169	0.0841	2.9400e- 003	0.0870	0.0000	398.0455	398.0455	0.0227	0.0000	398.6129

4.2 Trip Summary Information

	Avei	rage Daily Trip Ra	ate	Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	419.11	103.94	17.98	821,681	821,681
Parking Lot	0.00	0.00	0.00		
Total	419.11	103.94	17.98	821,681	821,681

4.3 Trip Type Information

		Miles			Trip %			Trip Purpos	se %
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Medical Office Building	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038
Parking Lot	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	39.2006	39.2006	1.6200e- 003	3.3000e- 004	39.3409
Electricity Unmitigated	ii ii ii					0.0000	0.0000		0.0000	0.0000	0.0000	39.2006	39.2006	1.6200e- 003	3.3000e- 004	39.3409
Mitigated	2.2000e- 004	1.9700e- 003	1.6600e- 003	1.0000e- 005		1.5000e- 004	1.5000e- 004		1.5000e- 004	1.5000e- 004	0.0000	2.1480	2.1480	4.0000e- 005	4.0000e- 005	2.1608
NaturalGas Unmitigated	2.2000e- 004	1.9700e- 003	1.6600e- 003	1.0000e- 005		1.5000e- 004	1.5000e- 004		1.5000e- 004	1.5000e- 004	0.0000	2.1480	2.1480	4.0000e- 005	4.0000e- 005	2.1608

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5.2 Energy by Land Use - NaturalGas <u>Unmitigated</u>

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					ton	s/yr							МТ	/yr		
Medical Office Building	40252	2.2000e- 004	1.9700e- 003	1.6600e- 003	1.0000e- 005		1.5000e- 004	1.5000e- 004		1.5000e- 004	1.5000e- 004	0.0000	2.1480	2.1480	4.0000e- 005	4.0000e- 005	2.1608
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		2.2000e- 004	1.9700e- 003	1.6600e- 003	1.0000e- 005		1.5000e- 004	1.5000e- 004		1.5000e- 004	1.5000e- 004	0.0000	2.1480	2.1480	4.0000e- 005	4.0000e- 005	2.1608

Mitigated

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					ton	s/yr							MT	/yr		
Medical Office Building	40252	2.2000e- 004	1.9700e- 003	1.6600e- 003	1.0000e- 005		1.5000e- 004	1.5000e- 004		1.5000e- 004	1.5000e- 004	0.0000	2.1480	2.1480	4.0000e- 005	4.0000e- 005	2.1608
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		2.2000e- 004	1.9700e- 003	1.6600e- 003	1.0000e- 005		1.5000e- 004	1.5000e- 004		1.5000e- 004	1.5000e- 004	0.0000	2.1480	2.1480	4.0000e- 005	4.0000e- 005	2.1608

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5.3 Energy by Land Use - Electricity Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr		МТ	/yr	
Medical Office Building	110432	35.1860	1.4500e- 003	3.0000e- 004	35.3119
Parking Lot	12600	4.0146	1.7000e- 004	3.0000e- 005	4.0290
Total		39.2006	1.6200e- 003	3.3000e- 004	39.3409

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr		МТ	-/yr	
Medical Office Building	110432	35.1860	1.4500e- 003	3.0000e- 004	35.3119
Parking Lot	12600	4.0146	1.7000e- 004	3.0000e- 005	4.0290
Total		39.2006	1.6200e- 003	3.3000e- 004	39.3409

6.0 Area Detail

6.1 Mitigation Measures Area

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Use Low VOC Paint - Non-Residential Interior
Use Low VOC Paint - Non-Residential Exterior
No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Mitigated	0.0502	1.0000e- 005	1.3000e- 003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5200e- 003	2.5200e- 003	1.0000e- 005	0.0000	2.6900e- 003
Unmitigated	0.0502	1.0000e- 005	1.3000e- 003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5200e- 003	2.5200e- 003	1.0000e- 005	0.0000	2.6900e- 003

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6.2 Area by SubCategory Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory		tons/yr MT/yr														
04:	5.8800e- 003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0442		i			0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2000e- 004	1.0000e- 005	1.3000e- 003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5200e- 003	2.5200e- 003	1.0000e- 005	0.0000	2.6900e- 003
Total	0.0502	1.0000e- 005	1.3000e- 003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5200e- 003	2.5200e- 003	1.0000e- 005	0.0000	2.6900e- 003

Mitigated

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					ton	s/yr							МТ	/yr		
Architectural Coating	5.8800e- 003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0442					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2000e- 004	1.0000e- 005	1.3000e- 003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5200e- 003	2.5200e- 003	1.0000e- 005	0.0000	2.6900e- 003
Total	0.0502	1.0000e- 005	1.3000e- 003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5200e- 003	2.5200e- 003	1.0000e- 005	0.0000	2.6900e- 003

7.0 Water Detail

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7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category		МТ	-/yr	
Miligatou	5.9857	0.0382	9.4000e- 004	7.2213
Unmitigated	7.4821	0.0477	1.1800e- 003	9.0267

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7.2 Water by Land Use <u>Unmitigated</u>

	Indoor/Out door Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal		МТ	√yr	
Medical Office Building	1.45557 / 0.277252		0.0477	1.1800e- 003	9.0267
Parking Lot	0/0	0.0000	0.0000	0.0000	0.0000
Total		7.4821	0.0477	1.1800e- 003	9.0267

Mitigated

	Indoor/Out door Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal		МТ	√yr	
Medical Office Building	1.16446 / 0.221802	5.9857	0.0382	9.4000e- 004	7.2213
Parking Lot	0/0	0.0000	0.0000	0.0000	0.0000
Total		5.9857	0.0382	9.4000e- 004	7.2213

8.0 Waste Detail

8.1 Mitigation Measures Waste

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Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
		МТ	-/yr	
Willingutou	6.3577	0.3757	0.0000	15.7509
Unmitigated	25.4307	1.5029	0.0000	63.0035

8.2 Waste by Land Use <u>Unmitigated</u>

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons		МТ	-/yr	
Medical Office Building	125.28	25.4307	1.5029	0.0000	63.0035
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		25.4307	1.5029	0.0000	63.0035

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8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons		МТ	-/yr	
Medical Office Building	31.32	6.3577	0.3757	0.0000	15.7509
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		6.3577	0.3757	0.0000	15.7509

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
				4	

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

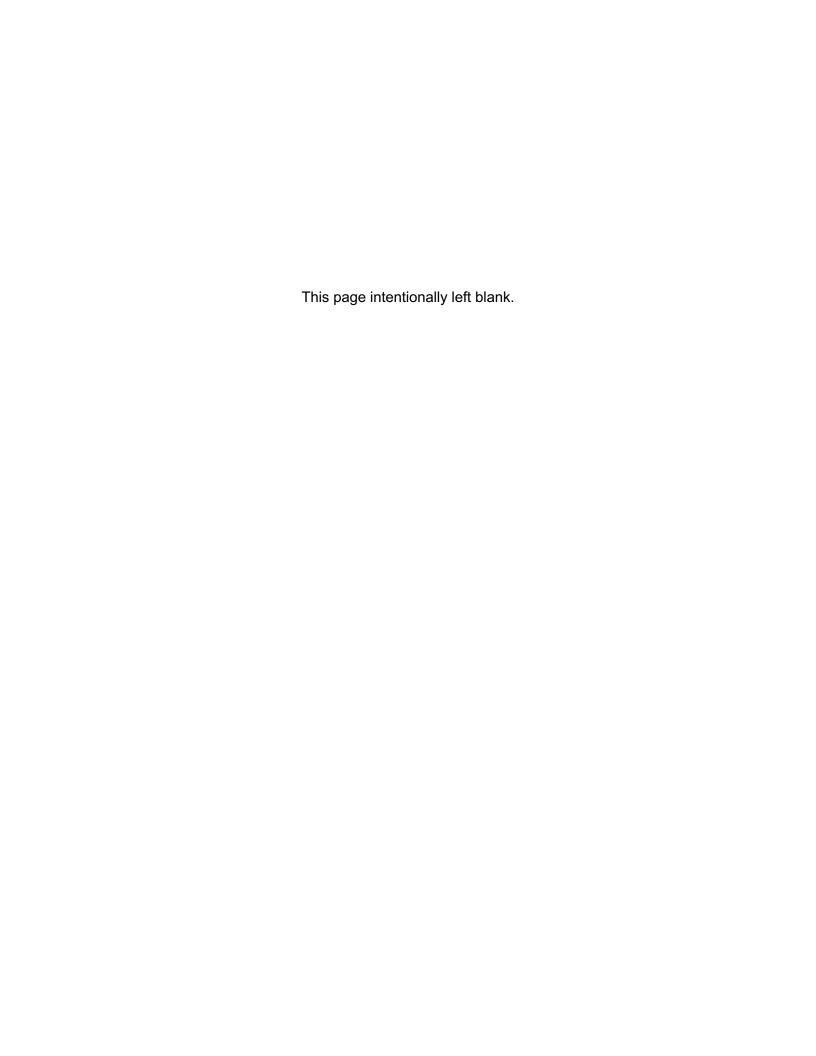
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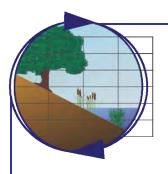
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Biological Resources Letter Report





Merkel & Associates, Inc.

5434 Ruffin Road, San Diego, CA 92123 Tel: 858/560-5465 Fax: 858/560-7779 e-mail: associates@merkelinc.com

> October 7, 2019 M&A #18-091-01

Ms. Christina Willis BRG Consulting, Inc. 304 Ivy Street San Diego, CA 92101

Re: Biological Resources Letter Report for the Cahuilla Indian Health Clinic Replacement Project, Located on Tribal Lands in Riverside County, California

Dear Ms. Willis:

As requested, Merkel & Associates, Inc. (M&A) has prepared this biological resource letter report for the Cahuilla Indian Health Clinic Replacement Project, as proposed by the Riverside-San Bernardino Indian Health Clinics, Inc. (RSBIHCI), in conformance with the National Environmental Policy Act (NEPA).

The Bureau of Indian Affairs (BIA) is considering the approval of the lease agreement for the construction and operation of the proposed Cahuilla Indian Health Clinic Replacement, a replacement health care facility, on the Cahuilla Reservation in the unincorporated community of Anza, Riverside County, California. The existing Cahuilla Santa Rosa Indian Health Clinic serves American Indian and Alaska Natives (AI/AN) and is operated pursuant to a health care services contract or compact entered into under the Indian Self-Determination and Education Assistance Act, Public Law 93-638. The new Cahuilla Indian Health Clinic would provide space to support a modern and adequately staffed health care delivery program. The new clinic would ensure availability of the medical services needed to maintain and promote the health status and overall quality of life for the residents of the service area.

The BIA is the federal agency that is charged with reviewing and approving business leases. The proposed federal action requires the preparation of an Environmental Assessment (EA) completed in accordance with the requirements set forth in NEPA, the Council on Environmental Quality Regulations for Implementing NEPA (40 Code of Federal Regulations [CFR] 1500–1508), and the BIA NEPA Guidebook (59 Indian Affairs Manual [IAM] 3-H; BIA 2012). The BIA will use the EA to determine if the proposed action would result in significant impacts to the environment. This Biological Resources Technical Letter Report is prepared in support of the project EA.

If you have any questions regarding this letter, please do not hesitate to contact me or Gina Krantz (Project Manager) at gkrantz@merkelinc.com or (858) 560-5465.

Sincerely,

Keith W. Merkel Principal Consultant Gina Krantz

Project Manager/Senior Biologist

M. Krante

Purpose of Report

Merkel & Associates, Inc. (M&A) has prepared this biological resource technical letter report for the proposed Cahuilla Indian Health Clinic Replacement Project. The purpose of this report is to document the existing biological conditions within the project study area; identify potential impacts to biological resources that could result from implementation of the proposed project, and recommend measures to avoid, minimize, and/or mitigate significant impacts in conformance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality Regulations for Implementing NEPA (40 Code of Federal Regulations [CFR] 1500–1508), and the BIA NEPA Guidebook (59 Indian Affairs Manual [IAM] 3-H; BIA 2012).

Project Site Location

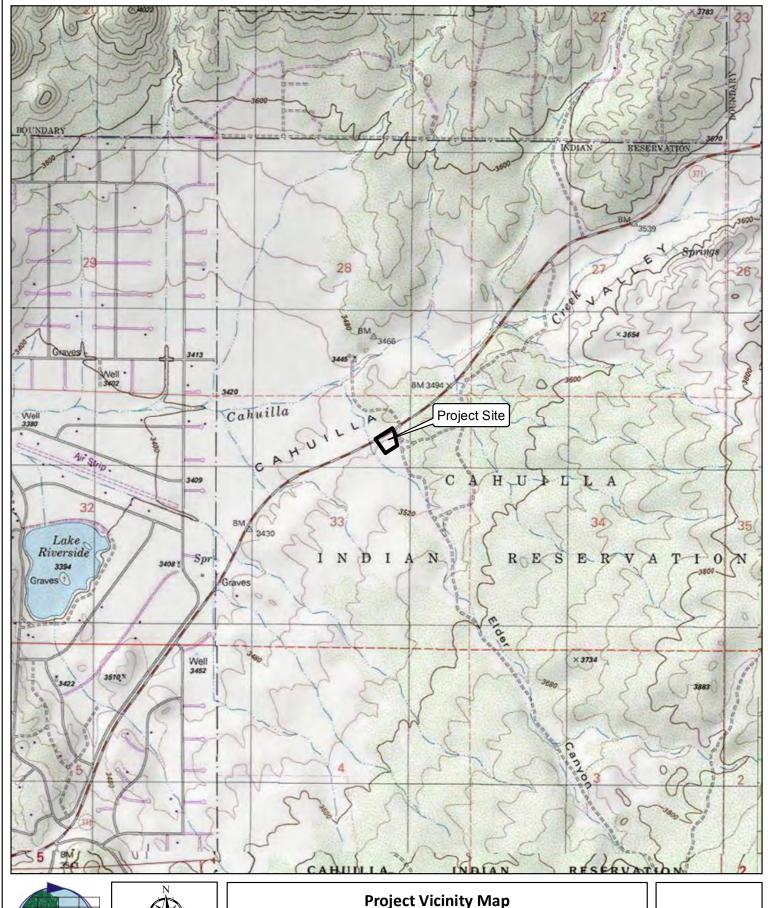
The project site consists of approximately three acres within the larger APN 572-190-004 on Cahuilla Indian Reservation land in southern Riverside County, California. The project site is located at approximately 35°31'23.88" North Latitude and -116°46'34.32" West Longitude and in the northeast quarter of Section 33, Township 7 South, and Range 2 East on the United States Geological Survey (USGS) 7.5-minute topographic quadrangle of Cahuilla Mountain (Figure 1).

The site is bordered on the north by State Route 371 (SR 371)/Cahuilla Road, and by vacant land to the south, east, west, and north of SR 371. The nearest metropolitan areas are the City of Hemet, approximately 19 miles (30.6 km) to the north, and the City of La Quinta, 27.7 miles (47.7 km) north east.

Proposed Project Description

The new clinic would consist of a single-story building, approximately 11,600 square feet (SF) in size. Non-emergency medical and community services would be provided from 8:00 AM to 5:00 PM, Monday through Thursday and from 8:00 AM to 2:00 PM on Friday. The proposed project would provide a vehicle access by a new 4-lane driveway entrance/exit from SR-371, as well as 90 parking spaces and the installation of landscaping, lighting and a covered outdoor area within the parking area. Construction would also include installation of a new 185,000-gallon underground water storage tank, installation of a retention basin and extension of electrical lines to the site. The site's wastewater would be handled by a new septic tank and 4,000-square-foot leach field system, located to the north of the health clinic and covered outdoor area.

Site preparation would involve minor cuts and fills in order to achieve the desired building pad elevation and provide adequate gradients for site drainage. Construction would comply with Executive Order 13717, Section 3(a), Establishing a Federal Earthquake Risk Management Standard. The construction for the new proposed facilities is estimated to take approximately six (6) months.







Project Vicinity Map

Cahuilla Indian Health Clinic Replacement Project Source: USGS 7.5' Cahuilla Mountain, CA Quadrangle Figure 1

METHODS AND SURVEY LIMITATIONS

Literature and Data Review

Historical and currently available biological literature and data pertaining to the project area were reviewed prior to initiation of the field investigation. This review included examination of: 1) aerial photography for the project site (Digital Globe, 2018; Google Earth, 2018; Google Earth-Street View 2018); 2) soil types mapped on the project site (USDA NRCS 2018); and 3) U.S. Fish and Wildlife Service (USFWS) special status species records and critical habitat designations for the project vicinity (USFWS CFWO 2019 and 2018, respectively). In addition, applicable sections of the administrative draft EA for the proposed project prepared by BRG Consulting, Inc (2019) were also reviewed. All applicable information was used to assess the presence or potential for presence of sensitive habitats and species within the study area.

Field Survey Conducted

M&A biologist conducted a general biological survey within the project biological study area (BSA) as summarized in Table 1. The BSA consisted of the approximate three acre project site as well as a habitat mapping buffer of 50 feet beyond the project site to provide context regarding any directly adjacent biological resources.

Table 1. Summary of Survey Dates, Times, Conditions, and Staff

Survey	Date	Time	Weather Conditions ¹	Biologist ²
General Biological Survey	July 24, 2019	1035-1200	Weather: 15%–40%cc Wind: BS 1 Temp.: 90°F	KLI

cc = cloud cover; BS= Beaufort Scale; F = Fahrenheit

General Biological Survey

A general biological survey of the BSA was conducted on-foot and visually and/or audibly surveyed. Existing vegetation types were delineated onto a 1" = 100' scale, color aerial photograph (Digital Globe, 2018) with topographical overlay of the project site. The vegetation types were classified according to the Holland (1986) code classification system as modified by Oberbauer (2008). A list of detectable flora and fauna species was recorded in a field notebook. Plant identifications were either resolved in the field or later determined through verification of voucher specimens, and wildlife species were determined through direct observation (aided by binoculars), identification of songs, call notes and alarm calls, or by detection of sign (e.g., burrows, tracks, scat, etc.). A nest survey was also conducted during the general biological survey to determine the presence and location of any active nests (or previously active nests) of avian and/or raptor species.

The scientific and common names utilized for the floral and faunal resources were noted according to the following nomenclature: flora, Rebman and Simpson (2014); Klein/San Diego Natural History Museum (2002); amphibians and reptiles, Crother et al. (2001 and 2012); birds, American

² KLI= Kyle L. Ince

Ornithologists' Union (1998 and 2018); and mammals, (species level) Wilson and Reeder (2005) and (sub-species level) Hall (1981). Photographs of the project BSA were taken to record the biological resources present as shown in Figure 2 and Appendix 1. Data collected from the survey were digitized into current Geographical Information System (GIS) Environmental Systems Research Institute (ESRI) software platforms.

Federally Listed Species Assessment

Concurrent with the general biological survey (i.e., vegetation mapping and general botanical/wildlife survey), a directed assessment for federally listed animal and/or plant species protected under the federal Endangered Species Act was conducted within the BSA. The potential for federally listed species to occur on the project site was assessed based on the presence of potentially suitable habitat, site conditions, soil types, and/or historical and currently available known listed species record data (i.e., USFWS GIS database).

SURVEY RESULTS

Physical and Environmental Setting

The project site is bordered on the north by State Route 371 (SR 371)/Cahuilla Road, and by vacant land on the south, east and west, as well as a dirt access road along the eastern boundary. The project BSA consists of a historically disturbed grassy field as evident by a substantial amount of vehicle track marks in the field as well as in aerial imagery, that is contiguous with additional grassy fields to the west and south that had been historically disked and/or mowed, as evident by aerial imagery. The project site is directly surrounded by similar disturbance associated vegetation, as well as a limited amount of native habitats (i.e., red shank chaparral, riparian) found further to the north and east of the property. Further, no park lands, prime farmlands, wild and scenic rivers, or ecologically critical areas are located within or immediately adjacent to the proposed project BSA.

The BSA is relatively flat at approximately 3,480 feet above sea level. The soil type mapped for the project area is Mottsville sandy loam, 2-8% slopes and Bull Trail sandy loam, 8-15% slopes eroded (USDA-NRCS 2018). A USGS blue line for Elder Creek is mapped approximately 200 feet west of the project site and runs north south and presumably drains into Cahuilla Creek north of SR 371 approximately 1,500 feet north of the project site (Figure 1). Elder Creek is presumably a small ephemeral drainage and is located entirely offsite; further, there was no evidence of hydrology observed within the project BSA during the biological field survey.

Biological Resources

Botanical Resources-Flora

Four vegetation/habitat types were identified within the BSA: non-native grassland, disturbed habitat, urban/developed land, and one patch of red shank chaparral (Figure 2). The project site itself only supports disturbed habitat and non-native grassland, while the 50-foot BSA habitat mapping buffer includes urban/developed associated with Cahuilla Road north of the project site, additional disturbed habitat within the dirt access road along the eastern boundary, and one patch of red shank chaparral that occurs across the dirt road to the east of the project site. A summary of project site vegetation communities acreages are provided below in Table 1. Vegetation community types outside of the project site but within the BSA habitat mapping buffer are not quantified in Table 1, but rather the habitat mapping within this buffer is provided only for context.

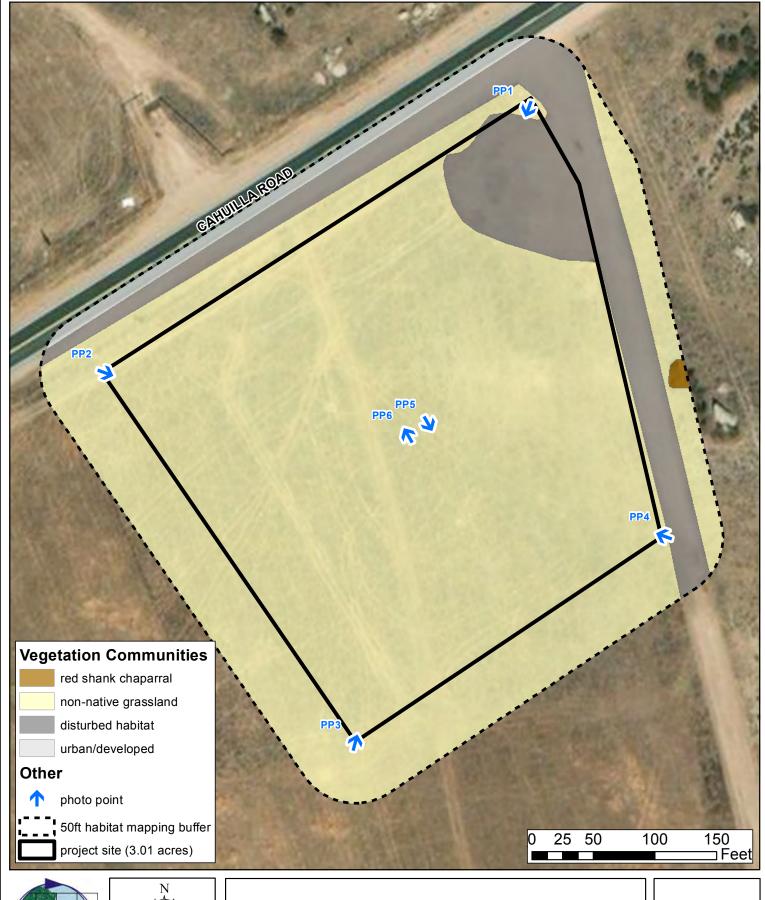
Table 1. Summary of Vegetation Communities within Project Site

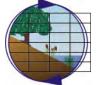
Vegetation Community	Holland Code	Acreage (acres)
Non-native grassland	42200	2.79
Disturbed Habitat	11300	0.22
Total:		3.01

The project site is dominated by non-native grassland comprised of annual grasses including hare barley (Hordeum murinum), ripgut grass (Bromus diandrus), red brome (Bromus. madritensis ssp. rubens), and cheat grass (Bromus tectorum). Broadleaf, non-native weeds including London rocket (Sisymbrium irio), short-pod mustard (Hirschfeldia incana), cheeseweed (Malva parviflora), and greenstem filaree (Erodium moschatum) are patchily distributed throughout the grassland. Some opportunistic native forbs including common fiddleneck (Amsinckia intermedia), rattlesnake sandmat (Euphorbia albomarginata), and pit-seed goosefoot (Chenopodium berlandieri var. sinuatum) were also observed and noted. This low quality non-native grassland is very dense and thatched and does not provide open areas typically necessary for ground nesting avian species, burrowing wildlife species, or foraging raptors. The northeastern corner of the project site is mapped as disturbed habitat since it is devoid of vegetation and consists entirely of bare ground (Figure 2).

The 50-foot BSA habitat mapping buffer includes additional disturbed habitat and non-native grassland, as well as one small patch of red shank chaparral, a native habitat dominated by red shank (*Adenostoma sparsifolia*), east of the project site with the larger extent of native habitat that appears to be red shank chaparral further to the east and to a lesser extent to the south.

No federal wetlands occur within the project BSA since the site did not meet all three wetland indicators (i.e., wetland hydrophytic vegetation, hydric soils, and wetland hydrology) based on the general biological survey.







Biological Resources Map

Cahuilla Indian Health Clinic Replacement Project

Aerial Source: Digital Globe 2018

Figure 2

Zoological Resources-Fauna

Due to the disturbed nature of the area, few faunal species were observed or are expected to occur within the BSA. The only invertebrate observed on the site was one butterfly species, checkered white (*Pontia protodice*). No amphibians were observed and are not expected to utilize the site given the lack of habitat and any nearby water source. No reptiles were observed but potentially expected species include common species such as western fence lizard (*Sceloporus occidentalis*) and gophersnake (*Pituophis catenifer*). Although no avian species were detected during the site visit, common and ubiquitous species as northern mockingbird (*Mimus polyglottos*), house finch (*Haemorhous mexicanus*), western meadowlark (*Sturnella neglecta*), western kingbird (*Tyrannus verticalis*), and mourning dove (*Zenaida macroura*) are potentially expected to utilize the site. Common raptors that may forage over the BSA include red-tailed hawk (*Buteo jamaicensis*) and red-shouldered hawk (*Buteo lineatus*). Only one mammal species, San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) was detected (i.e., scat) but other common species found throughout the area and potentially expected to utilize the site include deer mouse (*Peromyscus maniculatus*) and coyote (*Canis latrans clepticus*).

Federally Threatened and Endangered Listed Species

No federally threatened and/or endangered listed species and/or potentially suitable habitat for federally listed species were identified within the project BSA during the biological survey. Further, no federally listed animal and/or plant species are expected to occur within the project BSA primarily due to the lack of suitable habitat. Two federally listed species, quino checkerspot butterfly (*Euphydryas editha quino*) and Stephens' kangaroo rat (*Dipodomys stephansi*) have been reported from the project region. Quino checkerspot butterfly records are documented 1.8 miles and 2.4 miles to the south and 2.41 miles to the northeast of the site (USFWS GIS database). Stephen's kangaroo rat records are reported approximately one mile north of the project site. The density and thatched condition of the onsite non-native grasses would preclude the presence of both of these listed species from the areas mapped as non-native grassland onsite. Compacted soils and lack of vegetation would also preclude both listed species from occurring within the area mapped as disturbed habitat.

In addition, no federally designated or proposed critical habitat for any federally listed species occurs onsite or within two miles of the project BSA.

Wildlife Corridors

Wildlife corridors are important in preserving species diversity. Connections between areas of open space are integral to maintaining biological diversity and population viability. For the purposes of this report, we have defined wildlife corridor as follows: a linear landscape feature utilized by resident or transient wildlife for movement between two blocks of habitat.

The project site does not feature landscape/topography that typically facilitates wildlife movement such as a canyon, ridgeline, or riparian corridor. The project site is surrounded by undeveloped land including relatively flat terrain to the west and south that supports non-native grassland, SR 371 to the north, as well as Cahuilla Creek further north, and chaparral habitat to the east. Low density

residential occurs approximately 0.75 miles to the west and 3.0 miles to the east of the site. The project BSA is not a part of a regional or local wildlife corridor.

Federal Migratory Bird Treaty Act

Due to the limited amount of potentially suitable nesting habitat within the project BSA, the proposed project site has the potential to be utilized by a limited amount of ground nesting regionally common migratory birds that are protected under the federal Migratory Bird Treaty Act (MBTA). In addition, due to the lack of trees, the project site does not support potentially suitable nesting raptor habitat.

PROJECT IMPACT ANALYSIS

NEPA Thresholds of Significance

The Indian Affairs National Environmental Policy Act (NEPA) Guidebook and the Council of Environmental Quality (CEQ) regulations for implementing NEPA, §1508.27 (Part 1508) states: ""Significantly" as used in NEPA requires considerations of both context and intensity:

- (a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action...Both short- and long-term effects are relevant.
- (b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity: (1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. (2) The degree to which the proposed action affects public health or safety. (3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. (4) The degree to which the effects on the quality of the human environment are likely to be highly controversial. (5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks. (6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. (7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts. (8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources. (9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973. (10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

NEPA Impact and Mitigation Definitions

Project impacts are categorized as direct, indirect, or cumulative impacts. CEQ regulations for implementing NEPA, §1508.8 (a) (Part 1508) define direct and indirect "effects" as:

- (a) "Direct effects, which are caused by the action and occur at the same time and place."
- (b) "Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."

Effects and impacts as used in CEQ regulations are synonymous. CEQ regulations for implementing NEPA, §1508.7 (Part 1508) also defined "cumulative impacts" as:

(c) "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."

CEQ regulations for implementing NEPA, §1508.20 (Part 1508) define "Mitigation" as:

- (a) "Avoiding the impact altogether by not taking a certain action or parts of an action."
- (b) "Minimizing impacts by limiting the degree or magnitude of the action and its implementation."
- (c) "Rectifying the impact by repairing, rehabilitating, or restoring the affected environment."
- (d) "Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action."
- (e) "Compensating for the impact by replacing or providing substitute resources or environments."

Proposed Direct and Indirect Impacts

Direct impacts were determined by overlaying the project site boundary on the mapped vegetation communities/habitats in GIS ESRI software platforms. Indirect impacts were determined based on the design, intended use, and location of the proposed project elements relative to biological resources within the BSA and surroundings.

Habitats/Vegetation Communities

The proposed project action would result in direct impacts to 2.79 acres of low quality non-native grassland and 0.22 acre of disturbed habitat. The loss of these onsite low quality habitats that are not federal wetlands and do not support federally listed species would not be considered significant under NEPA. Similarly, the project construction activities may temporarily elevate noise levels, increase dust, and increase human disturbance into the immediately adjacent habitats; however,

the surrounding habitats also do not support federal wetlands or federally listed species and thus the potential direct impacts during construction would not be considered significant under NEPA.

Potential indirect impacts such as an increase in noise and artificial lighting from the clinic building and parking lot that may spill into the adjacent offsite habitats may occur from the operation of the proposed health clinic development; however, these potential impacts are not expected to be considered significant under NEPA for the same reasons as stated above for the direct impacts to habitats.

Federally Threatened and Endangered Listed Species

No federally listed animal or plant species occur or are expected to occur onsite based on a lack of suitable habitat, conditions, and/or known records in project BSA or vicinity and thus no federally listed animal or plant species would be impacted or adversely affected by the proposed project.

Similarly, no federally designated or proposed critical habitat for any federally listed species occurs within or directly adjacent to the project BSA and thus no critical habitat would be affected by the proposed project.

Wildlife Corridors Impacts

The project BSA does not support a regional or local wildlife movement corridor and thus no wildlife corridors would be impacted by the proposed project.

Impacts Under the Federal Migratory Bird Treaty Act

The proposed project site has the potential to be utilized by a limited amount of nesting regionally common migratory birds that are protected under the federal Migratory Bird Treaty Act (MBTA). Due to the lack of vegetation and specifically larger trees, the project site does not support potentially suitable nesting raptor habitat protected under the California Fish and Game (CFG) Code Sections 3503 and 3513.

Under the MBTA, it is unlawful, except as permitted by the USFWS, to "take, possess, transport, sell, purchase, barter, import, or export all species of birds protected by the MBTA, as well as their feathers, parts, nests, or eggs. Take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect (50 CFR 10.12)." It is important to note that "take" as defined under the federal MBTA is not synonymous with "take" as defined under the federal ESA. The MBTA definition of "take" lacks a "harm and harassment" clause comparable to "take" under the ESA, thus, the MBTA authority does not extend to activities beyond the nests, eggs, feathers, or specific bird parts (i.e., activities or habitat modification in the vicinity of nesting birds that do not result in "take" as defined under the MBTA are not prohibited).

The proposed project could result in impacts to active bird nests protected under the MBTA for a limited amount of common species such as mourning dove or killdeer that may nest on the ground within the project site if construction-related activities were to occur during the avian breeding

season (February 1 to September 15). No suitable raptor nesting habitat (i.e., trees) occurs within the project site and thus no active raptor nests or nesting raptors would be impacted.

To avoid any direct impacts to active nests of migratory birds protected under the MBTA, the removal of potentially suitable habitat that may support active nests in the proposed area of disturbance shall occur outside of the general avian breeding season (February 1 to September 15). If construction cannot avoid the avian breeding season, a pre-construction survey for active migratory bird nests protected under MBTA should be conducted by a qualified biologist within the project site area where substantial ground disturbance and/or vegetation clearing is proposed. If any active nests containing eggs or young are found, an appropriate nest exclusion zone will be established and appropriate nest monitoring would be conducted as determined by the project biologist in coordination with the BIA. The objective of the buffer shall be to avoid and/or minimize disturbance of active nesting birds protected under MBTA. All buffers shall be marked using high-visibility flagging or fencing, and no construction activities shall be allowed within the buffers until the young have fledged from the nest, unless authorized on a case by case basis by the project biologist in coordination with the BIA.

INVASIVE SPECIES (EXECUTIVE ORDER 13112)

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Under the E.O. 13112, federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless the agency has determined that the benefits of the actions outweigh the potential harm caused by invasive species and that all reasonable measures to minimize risk of harm will be taken in conjunction with the actions. Any federal invasive animal species or noxious weed species found to be present within the BSA must be considered as part of the NEPA analysis for the proposed project.

The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Federal Noxious Weed List webpage (https://plants.usda.gov/java/noxious) and NRCS Invasive Species List webpage (https://www.invasivespeciesinfo.gov/terrestrial-invasives/terrestrial-plants) provides the most current noxious weed list and invasive plant species list, respectively. These lists were cross-referenced with the flora observed within the BSA to determine if any of the non-native plant species identified within the BSA were considered invasive/noxious weed species, as defined by the above referenced lists/sources. One invasive plant species, downy brome (*Bromus tectorum*), as identified on the NRCS Invasive Species List occurs within the project BSA. Downy brome was identified within the non-native grassland onsite and the proposed action including the construction vegetation removal, grubbing, and grading of the site may cause or promote the spread of this invasive species.

To avoid and/or minimize the spread of downy brome during project construction activities consisting of vegetation clearing and ground disturbance within the non-native grassland onsite, it is recommended that the project implement the following:

- 1. If feasible, construction vegetation clearing and brushing of the non-native grassland vegetation should take place prior to downy brome flowering and setting seed that typically occurs in May-June.
- 2. Stockpiles of non-native grassland vegetation that have been cleared should be properly contained in garbage bags, securely transported and disposed of at an approved offsite disposal site.

No invasive non-native animal species on the NRCS National Invasive Species Information Center webpage (https://www.invasivespeciesinfo.gov/terrestrial-invasives/terrestrial-vertebrates) were identified within the BSA during the recent field survey or expected to occur onsite based on suitable habitat and thus it is not expected that the proposed project would cause or promote the introduction or spread of invasive animal species.

REFERENCES

- American Ornithologists' Union. 1998. Check-list of North American Birds, 7th ed. American Ornithologists' Union, Washington D.C.
- _____. 2018. Fifty-ninth Supplement to the American Ornithological Society's Checklist of North American Birds Authors: R. Terry Chesser, Kevin J. Burns, Carla Cicero, Jon L. Dunn, Andrew W. Kratter, et. al. Source: The Auk, 135(3): 798-813
- Crother BI (ed.). 2000 (2001). Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding. SSAR Herpetological Circular 29.iii +82 pp.
- Crother BI, Boundy J, Campbell JA, De Quieroz K, Frost D, Green DM, Highton R, Iverson JB, McDiarmid RW, Meylan PA, Reeder TW, Seidel ME, Sites JW Jr., Tilley SG, Wake DB. 2012. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico: Seventh Edition. Society for the Study of Amphibians and Reptiles, Herpetological Circular No. 39. 2012. 101 pgs.
- Digital Globe. 2018. Aerial Imagery [Internet]. April 2018. Available from: http://www.digitalglobe.com/.
- Hall ER. 1981. The mammals of North America. 2nd Edition. John Wiley & Sons. New York, New York. Two volumes. 1,181 pp.
- Holland RF. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California.

 Nongame-Heritage Program, State of California, Resources Agency, Department of Fish and Game. Sacramento, California. 157pp.
- Oberbauer T, Kelly M, Buegge J. 2008, Revised 1996 and 2006. Draft Vegetation Communities of San Diego County [Internet]. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California", Holland RF, PhD., 1986. Available from: http://www.sdcounty.ca.gov/dplu/docs/Veg_Comm_SDCounty_2008.pdf.
- Rebman JP, Simpson MG. 2014. Checklist of the Vascular Plants of San Diego County, 5th Edition [Internet].San Diego Natural History Museum and San Diego State University. ISBN 0-918969-08-5. Available from: http://www.sdnhm.org/files/9314/3897/4678/SDCoChecklist5ed2014.pdf
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2018. Soil Survey Geographic (SSURGO) database for San Diego County, California [Internet]. Natural Resources Conservation Service (NRCS). Available from: http://SoilDataMart.nrcs.usda.gov/.
- U.S. Fish & Wildlife Service (USFWS). 2019. Carlsbad Fish and Wildlife Office, GIS Division Species Occurrence Data Download (zip) updated April 2019 [Internet]. Available from: http://www.fws.gov/carlsbad/giswebpage/giswebpage

 2018.	Crit	ical	Hab	itat I	Porta	al [Ir	nterr	iet].	Data	Dow	/nload	diz) b) սլ	pdate	ed Jul	y 2	2018.	Αv	ailab	ıle
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Wilson DE, Reeder DM (eds). 2005. Mammal Species of the World. Johns Hopkins University Press. 2,142 pp. Available from Johns Hopkins University Press at: 1-800-537-5487 or (410) 516-6900, or http://www.press.jhu.edu/ or http://nmnhgoph.si.edu/msw/.

Biological Resources Letter Report
Appropriate 1 Dhota Dagga of Dyniget Cita (July 24, 2010)
Appendix 1. Photo Pages of Project Site (July 24, 2019)



Photo Point 1. Photo taken July 24, 2019 from northeast corner of site facing southwest.



Photo Point 2. Photo taken July 24, 2019 from northwest corner of site facing southeast.



Photo Point 3. Photo taken July 24, 2019 from southwest corner of site facing northeast.



Photo Point 4. Photo taken July 24, 2019 from southeast corner of site facing northwest.



Photo Point 5. Photo taken July 24, 2019 from center of site facing southeast.

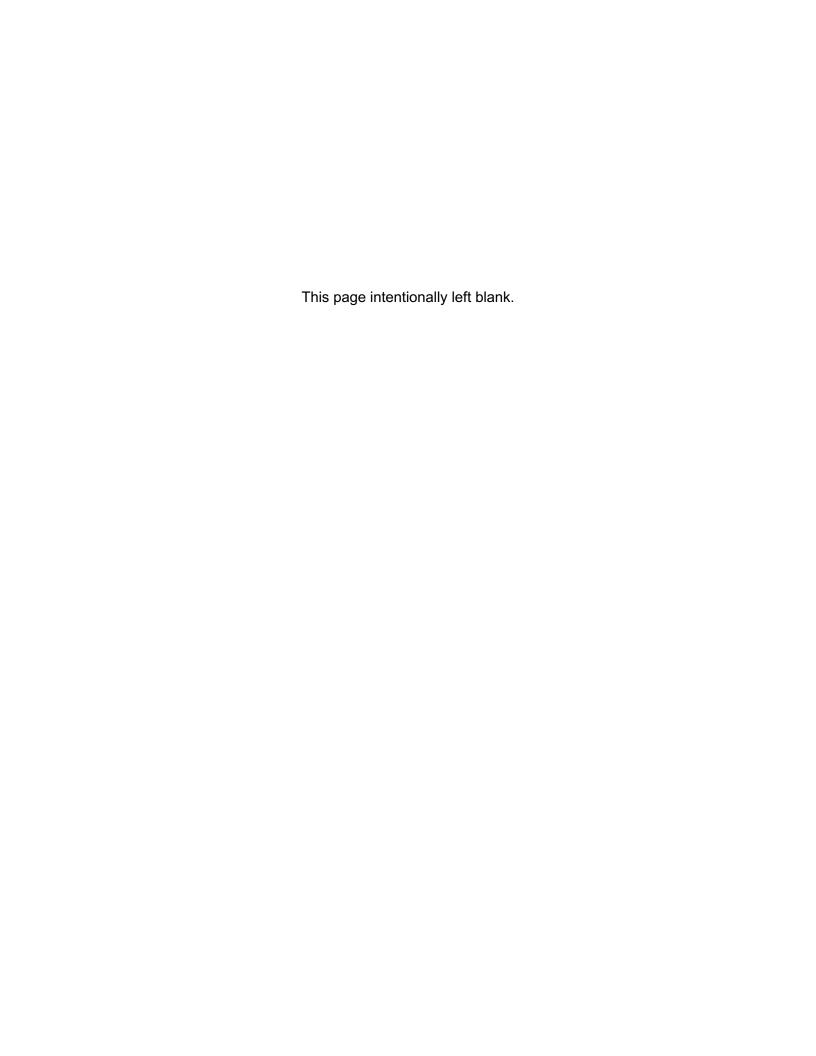


Photo Point 6. Photo taken July 24, 2019 from center of site facing northwest.

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Farmland
Conversion
Impact Rating
Form
(Form AD-1066)



U.S. Department of Agriculture FARMLAND CONVERSION IMPACT RATING											
PART I (To be completed by Federal Agency)		Date Of La	ate Of Land Evaluation Request								
Name of Project Desert Cahuilla Indian	Federal Agency Involved Bureau of Indian Affairs										
Proposed Land Use Health Clinic		County and StateRiverside CA									
PART II (To be completed by NRCS)	Date Requ	uest Received I	Зу	Person Completing Form:							
Does the site contain Prime, Unique, Statewide	or Local Important Farmland		ES NO	Acres I	rrigated	Average Farm Size					
(If no, the FPPA does not apply - do not comple											
Major Crop(s)	lurisdiction		Amount of Farmland As Defined in FPPA								
	Acres: %		Acres: %								
Name of Land Evaluation System Used	Name of State or Local S	ite Assessn	nent System	Date Land Evaluation Returned by NRCS							
PART III (To be completed by Federal Agency)			Alternative Site Rating							
A. Total Acres To Be Converted Directly				Site A	Site B	Site C	Site D				
B. Total Acres To Be Converted Indirectly				0							
C. Total Acres In Site				3							
PART IV (To be completed by NRCS) Land E	valuation Information			0							
A. Total Acres Prime And Unique Farmland											
B. Total Acres Statewide Important or Local Im	portant Farmland			3							
C. Percentage Of Farmland in County Or Local				0							
D. Percentage Of Farmland in Govt. Jurisdictio		ve Value		0							
PART V (To be completed by NRCS) Land Ev				U							
Relative Value of Farmland To Be Conv	erted (Scale of 0 to 100 Points	s)	T								
PART VI (To be completed by Federal Agency (Criteria are explained in 7 CFR 658.5 b. For Col		CPA-106)	Maximum Points	Site A	Site B	Site C	Site D				
Area In Non-urban Use	(15)	14									
2. Perimeter In Non-urban Use		(10)	10								
Percent Of Site Being Farmed			(20)	0							
4. Protection Provided By State and Local Gov	vernment		(20)	0							
5. Distance From Urban Built-up Area			(15)	15							
6. Distance To Urban Support Services			(15)	15							
7. Size Of Present Farm Unit Compared To Av	verage		(10)	0							
8. Creation Of Non-farmable Farmland			(10)	0							
9. Availability Of Farm Support Services			(5)	2							
10. On-Farm Investments			(20)	0							
11. Effects Of Conversion On Farm Support Se	ervices		(10)	0							
12. Compatibility With Existing Agricultural Use			(10)	0							
TOTAL SITE ASSESSMENT POINTS	160	56	0	0	0						
PART VII (To be completed by Federal Age	ncy)										
Relative Value Of Farmland (From Part V)	100	0	0	0	0						
Total Site Assessment (From Part VI above or	160	56	0	0	0						
TOTAL POINTS (Total of above 2 lines)			260	0	0	0	0				
Site Selected:Site A (Proposed) Date Of SelectionFebruary 2020				Was A Loca YE		NO NO					
Reason For Selection: Site selected because of the av		ater we	lls (potabl	e water s	,	ate:					

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.
- Step 2 Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.
- Step 4 For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

- 1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
- 2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

- 1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighted a maximum of 25 points and criterion #11 a maximum of 25 points.
- 2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

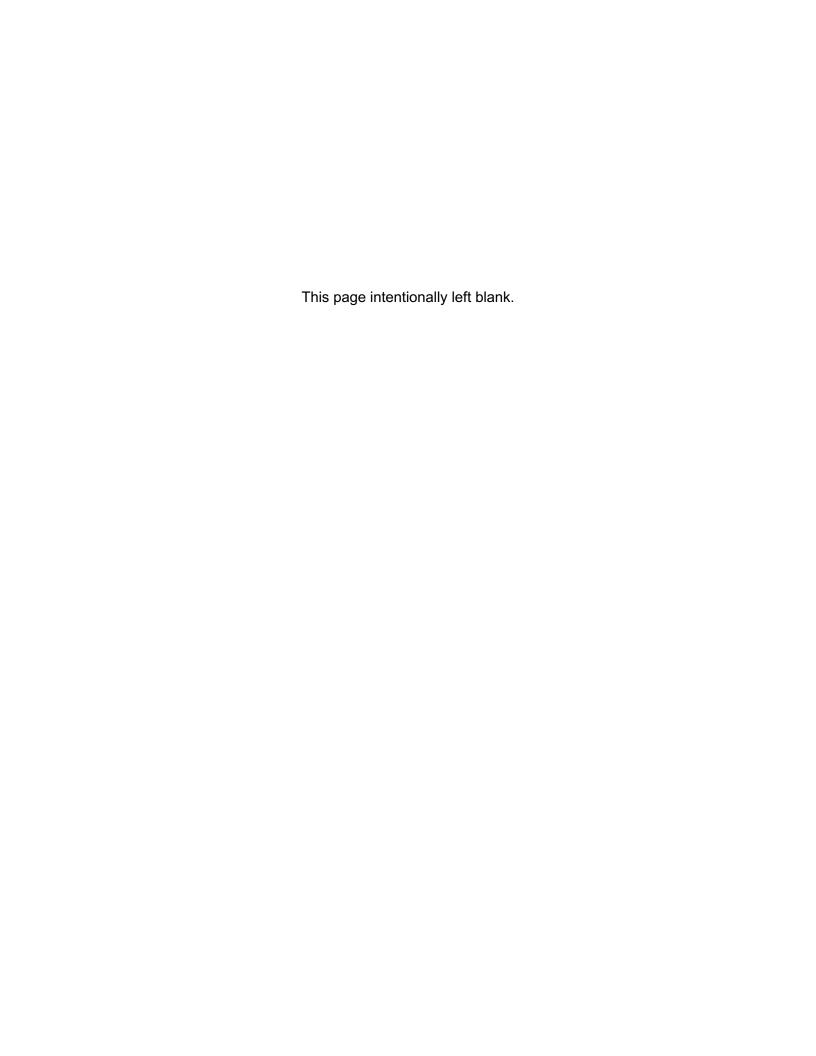
Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160. Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

 $\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

E-1 Cultural Resources Report







CULTURAL RESOURCES ASSESSMENT REPORT FOR THE CAHUILLA HEALTH CENTER PROJECT, CAHUILLA RESERVATION, UNINCORPORATED RIVERSIDE COUNTY, CALIFORNIA

Prepared for:

BRG Consulting 304 Ivy Street San Diego CA, 9210

Authors:

John Gust, Ph.D., RPA Holly Duke, B.A. Kim Scott, M.S.

Principal Investigator:

Wendy Teeter, Ph.D.

August 2019

Cogstone Project Number: 4640

Type of Study: Cultural Resources Assessment

Sites: None

USGS Quadrangle: Cahuilla Mountain 7.5'

Area: Four acres

Key Words: Negative for Cultural Resources, Cahuilla Reservation, Community of Anza, Riverside

County, Cahuilla

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SUMMARY OF FINDINGS

The purpose of this study is to determine the potential effects to cultural resources resulting from the Cahuilla Health Center Project (Project) which consists of the construction of a new health center on a on a three (3)-acre portion of Assessor Parcel Number 572-190-004 on the Cahuilla Indian Reservation near the community of Anza, in Riverside County, California. The horizontal Area of Potential Effects (APE) is four-acres and there are potential vertical impacts to a maximum of five feet. This cultural resources assessment provides environmental documentation as required by Section 106 of the National Historic Preservation Act (NHPA). The Bureau of Indian Affairs (BIA) is the lead agency.

The Bureau of Indian Affairs, Pacific Region Acting Director Dale Risling, determined that the Project did not require an Archaeological Resources Protection Act (ARPA) permit based on the email from the Cahuilla Band of Mission Indians (Tribe) Cultural Coordinator granting Cogstone permission to conduct archaeological survey on their lands and because Cogstone did not intend to collect or conduct any ground disturbance during the intensive pedestrian survey.

The Bureau of Indian Affairs (BIA) is considering the approval of a lease agreement for the construction and operation of a replacement health care facility on the Cahuilla Indian Reservation in the unincorporated community of Anza, Riverside County, California. The existing Cahuilla/Santa Rosa Indian Health Clinic (Clinic), located at 39100 #C Contreras Road, serves American Indians and Alaska Natives (AI/AN) and is operated pursuant to a health care services contract or compact entered into under the Indian Self-Determination and Education Assistance Act, Public Law 93-638. The replacement clinic would provide space to support a modern and adequately staffed health care delivery program. The new clinic would ensure availability of the medical services needed to maintain and promote the health status and overall quality of life for the residents of the service area.

The proposed new Cahuilla Health Center would consist of a single-story building, approximately 11,600 square feet in size on a three-acre portion of APN 572-190-004, located immediately south of Cahuilla Road/State Route 371 (SR-371) and 0.9 miles northeast of Puckit Drive in Anza. The Project would provide 90 parking spaces, along with landscaping, a covered outdoor area, and lighting within the parking area. Vehicle access to the site would be provided by a new driveway from SR-371.

Cogstone conducted a search of the California Historical Resource Information System (CHRIS) from the Eastern Information Center (EIC) located on the campus of University of California, Riverside, on June 12, 2019, which included the entire proposed APE as well as a one-mile radius from the APE. The records search determined that there are no previously recorded cultural resources located within the APE. A total of seven cultural resources have been

previously documented outside of the APE, but within the one-mile search radius. These consist of five prehistoric archaeological sites and two historic linear sites.

On July 24, 2019, Cogstone Archaeologist, Dr. John Gust, surveyed the entirety of the four-acre APE using transects spaced 15 meters apart. Native American Monitor, Danny Lee Esparza, of the Cahuilla Band of Mission Indians (Tribe) was present during the survey. Ground visibility ranged from poor (0-5%) within the majority of the APE to excellent within the area to become a retention pond (nearly 100%). Modern trash was present within the APE as well as imported fill that the Tribe permitted to be spread over the APE. The survey was negative for prehistoric or historic cultural resources. As a result, there will be no effects to known historic properties.

However, the results of the geoarchaeological analysis indicate that the likelihood of encountering intact subsurface deposits is moderate. Further, the lack of prior development within the APE, the inability to observe potential cultural resources due to the spread of fill to an unknown depth over the APE and that the maximum depth of excavation would be five feet below surface, the potential for discovery of unknown intact archaeological deposits, resources, or features by the implementation of this Project is also moderate. In order to avoid impacts to unknown subsurface historic properties, it is recommended that archaeological and Native American monitoring be conducted during all ground-disturbing activities within native sediments. An ARPA permit will be required in the event that cultural material is identified and collected during construction activity.

In the event of an unanticipated discovery, all work must be suspended within 50 feet of the find until the BIA and Tribe are contacted and a qualified archaeologist can evaluate it. In the unlikely event that human remains are encountered during project development, all work must cease near the find immediately. The BIA may request the help of the Riverside County Coroner. Further, if the human remains are determined to be Native American, or if funerary objects, sacred objects, or objects of cultural patrimony are identified during Project construction, the processes established within the Native American Graves Protection and Repatriation Act (NAGPRA) and its implementing regulations will be followed.

INTRODUCTION

PURPOSE OF STUDY

The purpose of this study is to determine the potential effects to cultural resources resulting from the Cahuilla Health Center Project (Project) which consists of the construction of a new health center on a on a three (3)-acre portion of Assessor Parcel Number 572-190-004 on the Cahuilla Indian Reservation near the community of Anza, in Riverside County, California (Figure 1). The horizontal Area of Potential Effects (APE) is four-acres and there are potential vertical impacts to a maximum of five feet. This assessment provides environmental documentation as required by Section 106 of the National Historic Preservation Act (NHPA). The Bureau of Indian Affairs (BIA) is the lead agency.

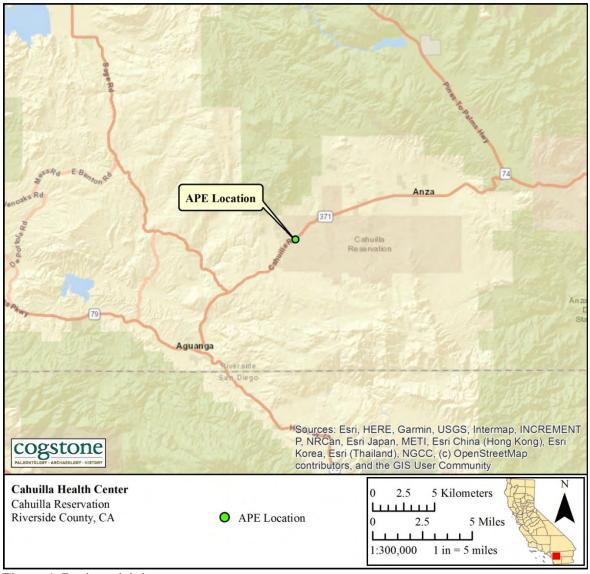


Figure 1. Project vicinity map

PROJECT LOCATION AND DESCRIPTION

The Project would be located on three acres of Assessor Parcel Number (APN) 572-190-004 within the Cahuilla Indian Reservation near the unincorporated community of Anza, in Riverside County, California. Specifically, the Project is located in the northeast quarter of Section 33, Township 7 South, and Range 2 East of the San Bernardino Base and Meridian and is situated on the United States Geological Survey (USGS) Cahuilla Mountain 7.5-minute topographic quadrangle (Figure 2). The Project is bordered on the north by State Route 371 (SR-371)/Cahuilla Road, and by vacant land on the south, east, and west. The nearest metropolitan areas are the City of Hemet, approximately 19 miles (30.6 km) to the north, and the City of La Quinta, 27.7 miles (47.7 km) northeast. The nearest residential uses are within Lake Riverside Estates, located north of SR-371/Cahuilla Road approximately 1.1 miles (1.8 km), southwest of the Project area.

Regional access to the Project area would be provided by Interstate 15 (I-15) and State Route 79 (SR-79) on the west or by State Route 74 (SR-74), State Route 111 (SR-111) or State Route 86 (SR-86) on the west. SR-79 and SR-74 are the nearest north/south routes and are located approximately nine miles (14.5 km) west and 10.5 miles (16.9 km) east of the Project area, respectively. Local access to the Project area is provided by SR-371/Cahuilla Road. SR-371/Cahuilla Road is a two-lane paved road aligned in a general east-west direction between its western terminus at SR-79 and its eastern terminus at SR-74.

PROPOSED ACTION

BIA is considering the approval of a lease agreement for the construction and operation of a replacement health care facility. The existing Cahuilla/Santa Rosa Indian Health Clinic, located at 39100 #C Contreras Road, serves American Indian and Alaska Natives (AI/AN) and is operated pursuant to a health care services contract or compact entered into under the Indian Self-Determination and Education Assistance Act, Public Law 93-638.

The replacement Cahuilla Indian Health Clinic would provide space to support a modern and adequately staffed health care delivery program. The new clinic would ensure availability of the medical services needed to maintain and promote the health status and overall quality of life for the residents of the service area.

The new clinic would consist of a single-story building, approximately 11,600 square feet in size. The Project would provide 90 parking spaces, along with landscaping, a covered outdoor area, and lighting within the parking lot. Vehicle access to the site would be provided by a new driveway from SR-371.

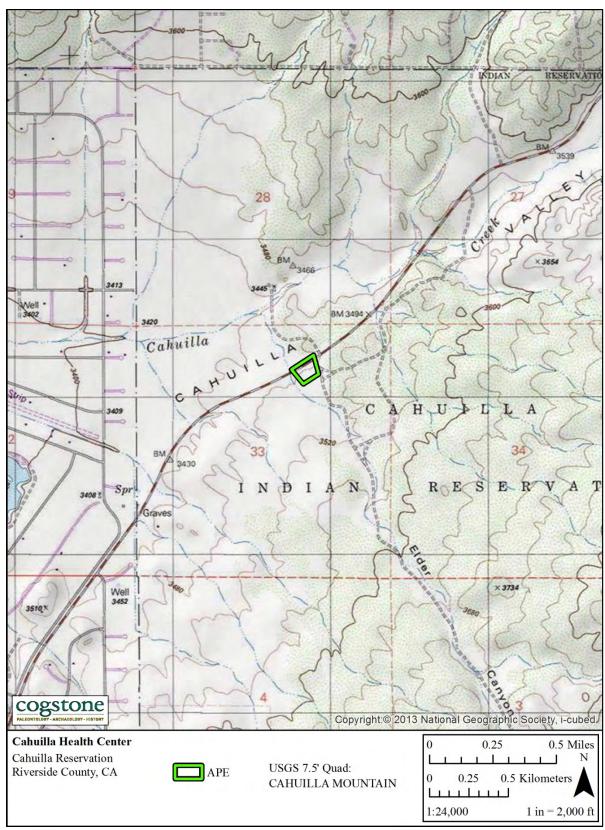


Figure 2. Project location

Construction would include clearing of existing vegetation, site grading and paving, construction of a four-lane driveway entrance/exit from SR-371, and installation of landscaping, lighting and a covered outdoor area within the parking area. Construction would also include installation of a new 185,000-gallon underground water storage tank, installation of a retention basin and extension of electrical lines to the site. The site's wastewater would be handled by a new septic tank and 4,000-square-foot leach field system, located to the north of the health clinic and covered outdoor area.

Site preparation would involve minor cuts and fills in order to achieve the desired building pad elevation and provide adequate gradients for site drainage. Construction would comply with Executive Order 13717, Section 3(a), Establishing a Federal Earthquake Risk Management Standard.

The horizontal area of disturbance totals four-acres and includes a three-acre portion of APN 572-190-004 plus a buffer, and was determined through reviews of project plans, estimations of the maximum potential for ground disturbance, topographic and geographical constraints, etc. The vertical area of disturbance would range between six-inches and five-feet for construction of the new site access, the building pad, utilities, septic system, and retention basin.

Requirements are not yet finalized, but the California Department of Transportation (Caltrans) may also require improvements to SR-371 that include widening of the highway to include a left turn lane, a right turn lane with a deceleration zone of up to 1200 feet for patients entering the health center grounds, and an acceleration zone up to 900 feet long for patients exiting the health center grounds.

NO ACTION ALTERNATIVE

The No Action Alternative is considered as a baseline for comparison of environmental effects (including direct, indirect and cumulative effects) and demonstrates the consequences of not meeting the need for the action. Under the No Action Alternative, a replacement health clinic would not be constructed, and health care services would continue to be provided at the existing facility. As a result of the No Action Alternative, the quality of health care services would not be improved and additional patient loads could not be accommodated.

AREA OF POTENTIAL EFFECTS

Under 36 CFR 800.16(d) of the Federal Code, the APE is "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." A historic property as defined in the National Historic Protection Act [54 U.S.C. § 300308] is any "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register of

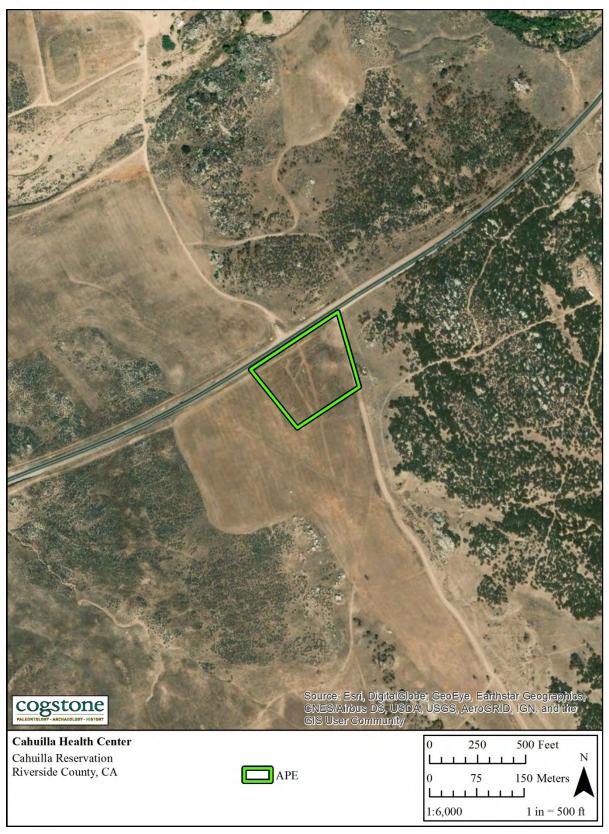


Figure 3. Area of Potential Effects (APE)

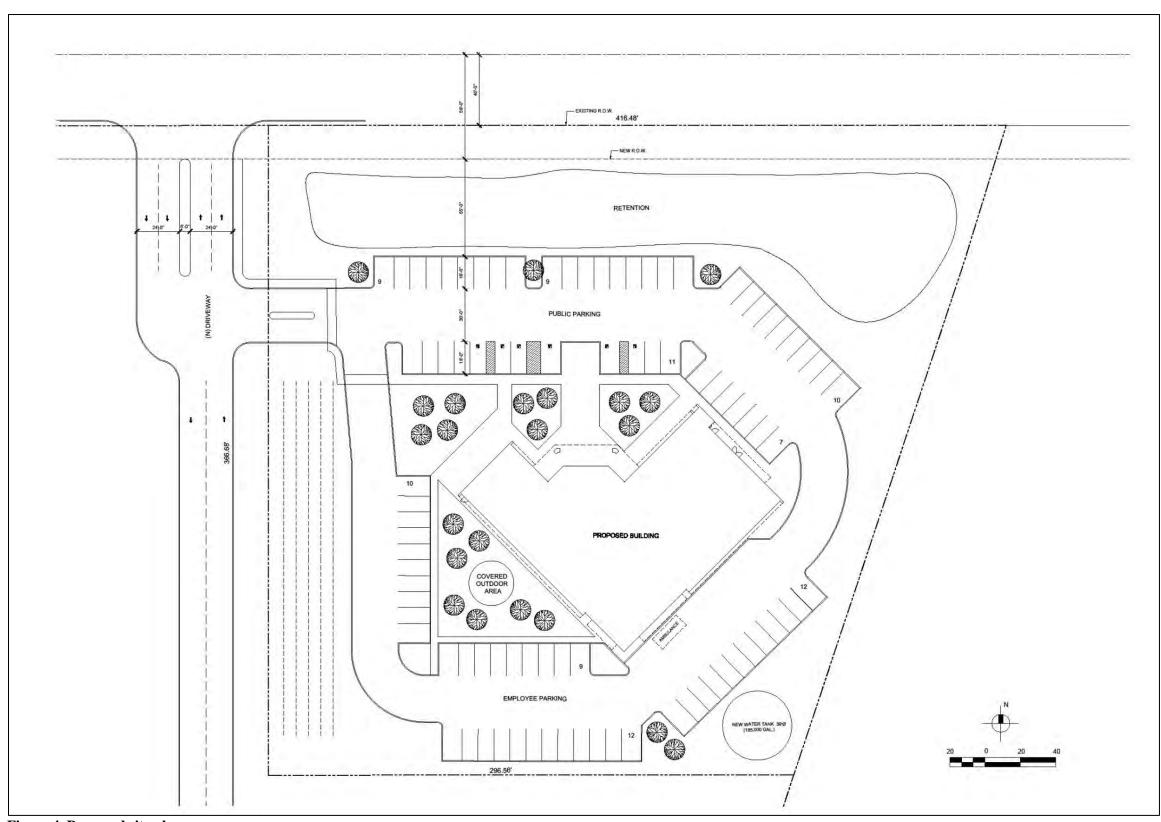


Figure 4. Proposed site plan

Historic Places (NRHP), including artifacts, records, and material remains related to such a property or resource."

The Project's horizontal APE is considered to be the entirety of the three-acre project area + buffer and includes areas used for staging and storage of materials during construction (Figures 3 and 4). Vertically the APE is considered to be up to five feet below modern ground surface within the footprint of the health center building, septic system, and retention basin and, and up to three feet deep in other areas that include uses for parking and landscaping. The Health Care Center would be a single- story building.

Boring for a new well within the APE was completed prior to this assessment and is not considered here.

In addition to these direct impacts, the indirect effects of the undertaking must also be considered. In this case there are no known Historic Properties within the viewshed of the proposed construction, or near enough to the APE that they may be affected by such detriments as noise or vibration.

PROJECT PERSONNEL

Desireé Martinez served as the Task Manager providing QA/QC while supervising all tasks for the Project. Ms. Martinez is a Registered Professional Archaeologist (RPA), has an M.A. in Anthropology from Harvard University, Cambridge, and has more than 22 years of experience in southern California archaeology.

Wendy Teeter served as the Principal Investigator for Archaeology. Dr. Teeter, RPA, has a Ph.D. in Anthropology (Archaeology) from the University of California, Los Angeles, and has 31 years of experience in directing and participating in archaeological field research and curation.

John Gust, RPA, co-authored the report and completed the site survey. Dr. Gust has a Ph.D. in Anthropology (Archaeology) from the University of California, Riverside, and has over seven years of experience in archaeology.

Holly Duke prepared portions of the report. Ms. Duke has a B.A. in Archaeology and History from Simon Fraser University, Canada, and has over six years of experience in southern California archaeology.

Kim Scott prepared the geoarchaeological sections of this report. Scott has an M.S. in Biology with paleontology emphasis from California State University, San Bernardino, a B.S. in Geology with paleontology emphasis from the University of California, Los Angeles, and over 20 years of experience in California paleontology and geology.

Logan Freeberg prepared the maps for the Project. Mr. Freeberg has a B.A. in Anthropology from the University of California, Santa Barbara, and a Geographic Information Systems (GIS) Certificate from California State University, Fullerton, and over 15 years of experience in archaeology. Short resumes of personnel are located in Appendix A.

REGULATORY ENVIRONMENT

NATIONAL HISTORIC PRESERVATION ACT

The National Historic Preservation Act (NHPA) is the primary federal law governing the preservation of cultural and historic resources in the United States. The law establishes a national preservation program and a system of procedural protections which encourage the identification and protection of cultural and historic resources of national, state, tribal, and local significance. A primary component of the act requires that federal agencies take into consideration actions that could adversely affect historic properties listed or eligible for listing on the National Register of Historic Places, known as the Section 106 Review Process.

NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places is the nation's official list of buildings, structures, objects, sites, and districts worthy of preservation because of their significance in American history, architecture, archeology, engineering, and culture. The National Register recognizes resources of local, state, and national significance which have been documented and evaluated according to uniform standards and criteria.

Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archeological resources. The National Register is administered by the National Park Service, which is part of the U. S. Department of the Interior. To be eligible for listing in the National Register, a resource must meet at least one of the following criteria:

- A. Is associated with events that have made a significant contribution to the broad patterns of our history
- B. Is associated with the lives of persons significant in our past
- C. Embodies the distinctive characteristics of a type, period or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction
- D. Has yielded, or may be likely to yield, information important in history or prehistory

Recommendations for site NRHP eligibility are presented in reports and site recordation forms. A site determined to be eligible for the NRHP is a site that would need to be mitigated if adversely affected by an undertaking. A historic property found to be ineligible for the NRHP is not, by definition, a historic resource and would not require mitigation if affected by the undertaking. Eligibility determinations are only made for sites that have been through a formal evaluation and nomination process overseen by the National Parks Service. Comparatively few sites are formally nominated due to the lengthy and labor intensive nomination process. Typically, if a site is recommended by the cultural resources consultant to meet the eligibility criteria, and if the SHPO concurs with this recommendation, the site will be avoided, or impacts mitigated without going through the nomination process.

According to 36 CFR§ 800.5, a proposed action would have an adverse effect on a historic property if it would directly or indirectly alter any of the characteristics that renders it eligible for inclusion in the NRHP. Adverse effects include:

- Physical destruction of or damage to all or part of the property;
- Alteration of a resource, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of Interior's Standards and Guidelines for the Treatment of Historic Properties (36 CFR§ 68);
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the resource's significant historic characteristics;
- Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a resource of religious and cultural significance to an Indian Tribe; and
- Transfer, lease, or sale of the resource out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the resource's historic significance.

NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT (NAGPRA), 1990 (25 USC 3001-3013); 43 CFR PART 10 (UPDATED 2003, 2005, 2007)

NAGPRA intends to ensure the protection and rightful disposition of Native American ancestral remains and cultural items located on Federal or Native American lands and in the Federal government's possession or control. Section 2 of NAGPRA and 43 CFR Part 10, the implementing regulations, provide detailed definitions of what is regulated under the act. When there is activity affecting or likely to affect Native American ancestral remains or cultural items on Federal or tribal lands, a NAGPRA Plan of Action (POA) must be developed to describe the procedures for the treatment and disposition of ancestral remains, funerary objects, objects of cultural patrimony, and/or sacred objects that may be inadvertently discovered during planned excavations.

NATIONAL ENVIRONMENTAL PROTECTION ACT

The National Environmental Protection Act (NEPA) directs federal agencies to use all practicable means to "Preserve important historic, cultural, and natural aspects of our national heritage...". If the presence of a significant environmental resource is identified during the scoping process, federal agencies and their agents must take the resource into consideration when evaluating project effects. Consideration of paleontological resources may be required under NEPA when a project is proposed for development on federal land, or land under federal jurisdiction. The level of consideration depends upon the federal agency involved.

ANTIQUITIES ACT

The Antiquities Act states, in part: That any person who shall appropriate, excavate, injure or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court.

Although there is no specific mention of natural or paleontological resources in the Act itself, or in the Act's uniform rules and regulations [Title 43 Part 3, Code of Federal Regulations (CFR)], "objects of antiquity" has been interpreted to include fossils by the National Park Service, the Bureau of Land Management, the Forest Service, and other Federal agencies.

BACKGROUND

ENVIRONMENTAL SETTING

The project area currently experiences a warm summer Mediterranean climate. Summer and most of fall is warm to hot with occasional thunderstorms. The majority of rain occurs during late fall through early spring. Ocean fog during the cooler months can also reach as far inland as the Anza area. The elevation of the APE is approximately 3,500 feet making snow a rarity. Native plants of the APE include sage scrub vegetation community (a.k.a. soft chaparral) which occurs in thicker soils and prefers valley areas. To the east of the APE is hard chaparral which is found in rockier areas, on slopes, and at slightly higher elevations than sage scrub. g.

Characteristic species of the coastal sage scrub include California sagebrush (*Artemisia californica*), chamise (*Adenostoma fasciculatum*), coyote brush (*Baccharis pilularis* var. *consanguinea*), California buckwheat (*Eriogonum fasciculatum*), lemonade berry (*Rhus integrifolia*), poison oak (*Toxicodendron diversiloba*), sages (*Salvia leucophylla*, *S. mellifera*, *S. apiana*), brittlebush (*Encelia californica*), deerweed (*Lotus scoparius*), monkeyflower (*Mimulus* spp.), Our Lord's candle (*Hesperoyucca whipplei*), and prickly pear cactus (*Opuntia* spp.). Hard chaparral species include those of the California coastal sage scrub as well as manzanita (*Arctostaphylos* spp.), ceanothus (*Ceanothus* spp.), oak (*Quercus* spp.), mountain mahogany (*Cercocarpus betuloides*), and toyon (*Heteromeles arbutifolia*) (Ornduff et al. 2003; Hall 2007).

Large native land mammals of the region included mule deer (*Odocoileus hemionus*), bighorn sheep (‡*Ovis canadensis*), pronghorn (‡*Antilocapra americana*), bobcat (*Lynx rufus*), mountain lion (*Felis concolor*), coyote (*Canis latrans*), grey wolf (‡*Canis lupus*), black and grizzly bears (*Ursus americana*, ‡*Ursus arctos*).1

PREHISTORIC SETTING

Approaches to prehistoric cultural frameworks have changed over the years from being based on material attributes, to radiocarbon chronologies, to association with cultural traditions. Archaeologists previously defined a material complex consisting of an abundance of milling stones (for grinding food items) with few projectile points or vertebrate faunal remains dating from about seven to three thousand years ago as the "Millingstone Horizon" (Wallace 1955). Later, the "Millingstone Horizon" was redefined as a cultural tradition named the Encinitas Tradition (Warren 1968) with various regional expressions including Topanga and La Jolla. Use by archaeologists varied as some adopted a generalized Encinitas Tradition without regional

^{1 ‡ -} indicates that the species has been extirpated from the area near to the APE

variations, while others continued to use "Millingstone Horizon," and still others used Middle Holocene (the geologic time period) to indicate this observed pattern (Sutton and Gardner 2010:1-2).

Recently, this generalized terminology was criticized by Sutton and Gardner (2010) as suppressing the identification of cultural, spatial, and temporal variation, as well as the movement of peoples throughout space and time. It is these factors that are believed to be critical to an understanding of prehistoric cultural adaptation and change in this portion of southern California (Sutton and Gardner 2010:1-2).

The Encinitas Tradition characteristics are: abundant metates and manos, crudely made core and flake tools, bone tools, shell ornaments, and very few projectile points. Subsistence focuses on collecting (plants, shellfish, etc.). Faunal remains vary by location but include shellfish, land animals, marine mammals and fish (Sutton and Gardner 2010:7).

Sutton and Gardner (2010: 8-25) further identify four patterns of the Encinitas Tradition. These are: (1) Topanga in coastal Los Angeles and Orange Counties; (2) La Jolla in coastal San Diego County; (3) Greven Knoll in inland San Bernardino, Riverside, Orange and Los Angeles Counties; and (4) Palomar in inland San Diego County. The latest characteristics of these patterns and phases as they apply to this region are provided in Table 1 after Sutton (2011).

The latest cultural revisions for the APE define traits for time phases of the Greven Knoll Pattern of the Encinitas Tradition applicable to inland San Bernardino, Riverside, Los Angeles, and Orange counties (Sutton and Gardner 2010). This pattern is subsequently replaced in the APE by the Peninsular Pattern of the Palomar Tradition (Sutton 2011; Table 1).

Greven Knoll sites tend to be in located in the inland valley areas. These inland people apparently did not switch from the use of manos and metates to the use of pestles and mortars that is seen in coastal sites dating to approximately 5000 years ago, possibly reflecting their closer relationship with desert cultural peoples who did not exploit acorns. The Greven Knoll toolkit is dominated by manos and metates throughout its 7,500-year extent. In Phase I, other typical characteristics were pinto dart points for atlatls or spears, charmstones, cogged stones, absence of shell artifacts, and flexed position burials (Table 1). In Phase II, Elko dart points for atlatls or spears and core tools are observed along with increased indications of gathering. In Phase III, stone tools including scraper planes, choppers and hammerstones are added to the tool kit, and yucca and plant seeds are staple foods, animals bones are heavily processed (broken and crushed to extract marrow), and burials tend to be marked by stone cairns (Sutton and Gardner 2010).

Table 1. Cultural Patterns and Phases

Tradition Pattern		Dates BP	Material Culture	Other Traits				
Encinitas	Greven Knoll I	8,500 to 4,000	Abundant manos and metates; Pinto dart points for atlatls or spears; charmstones, cogged stones, and discoidals rare; no mortars or pestles; and general absence of shell artifacts.	No shellfish; hunting important; flexed inhumations; and cremations rare.				
	Greven Knoll II	4,000 to 3,000	Abundant manos and mutates; Elko dart points for atlatls or spears; core tools; late discoidals; few mortars and pestles; and general absence of shell artifacts.	No shellfish; hunting and gathering important; flexed inhumations; and cremations rare.				
	Greven Knoll III (formerly Sayles complex) 3,000 to 900		Abundant manos and mutates; Elko dart points for atlatls or spears; scraper planes, choppers, and hammerstones; late discoidals; few mortars and pestles; and general absence of shell artifacts.	No shellfish; yucca and seeds as staples; hunting important but animal bones also processed; flexed inhumations beneath rock cairns; and cremations rare.				
Palomar	Peninsular I	900 to 750	Appearance of small points (Cottonwood points &, Desert Side-notched) for arrows; shaft straighteners; pottery; few stone ornaments or stone pipes; appearance of shell ornaments; use of obsidian glass from Coso, Obsidian Butte, Bagdad, and unknown sources; and use bedrock metates but few mortars and pestles.	Adoption of a lacustrine-based subsistence system; movement of people into the northern Coachella Valley from the interior valleys as Lake Cahuilla filled; establishment of major villages along the Lake Cahuilla shoreline; and primary pit cremations.				
	Peninsular II	750 to 300	Addition of Brown Ware pottery, ceramic pipes, and ceramic figurines (rare); use of same obsidian sources; and the use of stone fish traps as levels of Lake Cahuilla fluctuated/declined.	Lacustrine based subsistence; and the appearance of the Peninsular Funerary Complex, with secondary cremations placed in ceramic "containers" and associated mourning ceremonies.				
	Peninsular III	300 to 150	Continued use of Cottonwood and Desert Side-notched points; Brown Ware and Buff ware pottery; primary use of Obsidian Butte as an obsidian source; addition of new figurine types; addition of some cultigens (e.g., melons, squash) and Euroamerican material culture (e.g., glass beads and metal tools).	Adoption of terrestrial-based subsistence system; full-time villages near springs; movement of some people west into the northern Peninsular Ranges as Lake Cahuilla became desiccated; use of domesticated species obtained from Colorado River Yumans and Euroamericans; primary pit cremation as the principal mortuary practice; and retention of mourning ceremonies.				

Early Peninsular sites tend to be near sources of freshwater in the valley localities, some of which are now characterized as desert. The former Lake Cahuilla, located in the greater Salton Sea Basin of southwestern Riverside County and northern Imperial County, played a major role in the prehistory of the Colorado Desert east of the Project region. Lake Cahuilla formed periodically over the last several thousand years when the Colorado River broke its channel into the Gulf of Mexico and flowed into the Salton Sea Basin (Coachella and Imperial valleys), forming a large, deep body of freshwater water. The filling of Lake Cahuilla ca. 1,070 B.P. created a rich freshwater biotic resource base that attracted prehistoric peoples from a number of areas. Sutton (2011) suggests that some San Luis Rey I people from the northern San Diego County area split away and migrated north and east into the northern Peninsular Ranges and the northern Coachella Valley to exploit Lake Cahuilla and, in so doing, their culture became similar to that described for the Peninsular I Phase. The Peninsular Pattern then evolved into the Peninsular III and Peninsular III Phases (Sutton 2011).

The Peninsular I Phase is marked by the use of the bow and small arrow points, the appearance of bedrock mortars indicating use of acorns, the use pottery, increased use of shell ornaments, use of pit cremations, and continued hunting and gathering of terrestrial resources and the exploitation of lacustrine resources, including new technologies for decoys, traps and/or nets (Table 1). The Peninsular II Phase includes some important new material traits such as Brown Ware pottery, ceramic pipes figurines, as well as secondary burials in ceramic containers (Table 1). The Peninsular III Phase reflects the archaeological signature of the ethnographic groups that had become established during the Peninsular I and Peninsular II Phases, with some Euroamerican material culture (e.g., glass trade beads) and subsistence practices being adopted after historical settlement of the Project study region (Table 1; Sutton 2011).

ETHNOGRAPHY

By the Late Prehistoric period, the APE was inhabited by peoples known as the Cahuilla. They occupied the San Gorgonio Pass (referred to as the Pass Cahuilla), San Jacinto and Santa Rosa Mountains (Mountain Cahuilla), and the Coachella Valley and the northern end of Imperial Valley (Desert Cahuilla; Figure 5). The Cahuilla are linked to other Takic language family groups such as the Serrano and Luiseño, and share many aspects of culture and religion with those tribes. The Cahuilla Band of Mission Indians are identified as Mountain Cahuilla.

While all the Cahuilla speak a mutually intelligible language with dialect variations, each person's primary identity was linked to clan lineage and moiety, rather than a "tribal" affiliation. The two moieties of the Cahuilla were *Istam* (coyote) and *Tuktum* (wild cat). Affiliation was inherited from the father's moiety and members of one moiety had to marry into the other group.

Each clan was an independent, politically autonomous land-holding unit (Bean 1972; Strong 1929).

In addition to lineage residence areas and clan territory held in common with other members, each lineage had primary rights to various food collecting and hunting areas. Individuals were responsible for specific areas rich in plant resources, as well as hunting grounds, rock quarry locations, and sacred spots used only by shamans, healers, and ritual practitioners.

Cahuilla clans varied in size from several family groups to those composed of several thousand people. Clans were generally situated so that each lineage or community was located near a reliable water source and in proximity to significant food resources. Within each community, house structures were spatially placed at some distance from each other. Often a community would spread over a mile or two in distance with each nuclear and extended family having homes and associated structures for food storage and shaded work places (*ramadas*) for tool manufacture and food processing. Each community also contained a clan leader's house (Bean 1972; Strong 1929).

In more recent times, a ceremonial house (*kishumnawat*) was placed within each community, and most major religious ceremonies of the clan were held there. In addition, house and ceremonial structures, storage granaries, sweat houses, and song houses (for recreational music) were present. While the bulk of materials needed for daily subsistence were found within a mile or two, territories of a given clan might be larger, and longer distances were traveled to get precious exotic resources, usually found in the higher elevations of the surrounding mountains (Bean 1972; Strong 1929).

Higher elevations and other seasonal locations were visited for extended periods to harvest acorns or piñon nuts, visit sacred places used primarily for rituals, intergroup or inter-clan meetings, caches for sacred materials, and locations for use by shamans or medicine men. Generally, hilly, rocky areas, cave sites, or walled cave sites were used for temporary camping, storage of foods, fasting by shamans, and as hunting blinds (Bean 1972; Strong 1929).

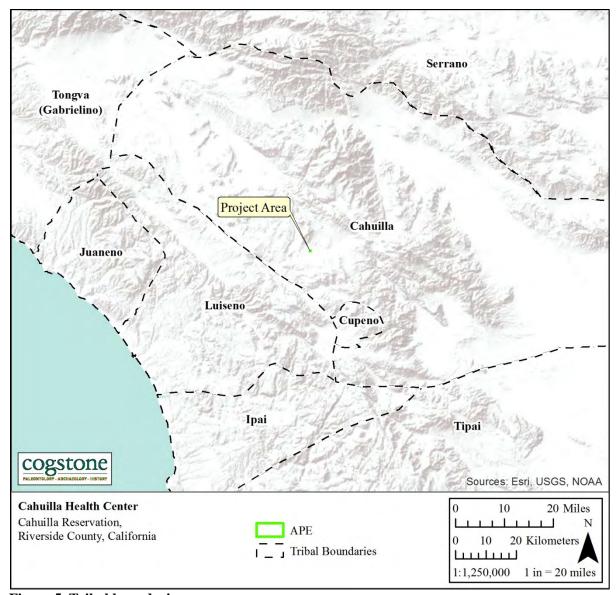


Figure 5. Tribal boundaries map

Between the mid-1500s and the 1800s, the Cahuilla were variously contacted by Spanish explorers, then Mexican ranchers, and later American settlers. By the mid-1800s, the Cahuilla were fully exposed to new peoples with new cultural ways, opportunities, and constraints. In the 1860s, several epidemics devastated the Cahuilla population and the increasing contact with Europeans exponentially impacted their traditional lifeway. Survivors of decimated Cahuilla clans joined villages that were able to maintain their ceremonial, cultural, and economic institutions (Bean 1972).

The Cahuilla were influenced by contact with the Patayan peoples of the lower Colorado River area. The Patayan were of the Yuman language family and introduced both floodplain agriculture, the use of ceramics, and bow-and-arrow technology to the Cahuilla approximately

1500 years ago. The Cahuilla were observed by early European explorers and settlers growing small plots of corn, pumpkin, melon, watermelon, barley, and wheat where there were reliable water sources (Schaefer and Laylander 2007: 253).

HISTORIC SETTING

SPANISH PERIOD (1769-1822)

The Cahuilla retained control of their ancestral lands longer than most Southern California tribes did, as they were somewhat distant from the established Spanish Missions. The first known European explorer was Spanish soldier Juan Bautista de Anza, who passed through the Anza Valley area in 1774 and 1775. In 1797, the nearby Temecula Valley received its first European visitors when Father Juan Norberto de Santiago and his military escorts traveled through the area in search of a new mission site. With the founding of Mission San Luis Rey de Francia later that year, the Temecula Valley became a part of the new mission's vast land holdings. During the next twenty years, it grew into Mission San Luis Rey de Francia's principal grain producer with a granary, chapel, and residence for the majordomo established at the Luiseño village of Temecku, at the confluence of Temecula and Murrieta Creeks (Hudson 1989: 8-9).

MEXICAN PERIOD (1822-1848)

After Mexico gained independence from Spain in 1822, the Mission lands were secularized under the Secularization Act of 1833, but much of the land was transferred to political appointees. A series of large land grants (ranchos) that transferred Mission properties to private ownership were awarded by the various governors of California. Land grants were also awarded in the interior to increase the population away from the coastal areas that were settled during the Spanish Period. The current APE is not located within a land grant.

AMERICAN PERIOD (1848-PRESENT)

The Mexican-American War followed on the heels of the Bear Flag Revolt of June 1846 (Ohles 1997). This period led to increased conflict amongst the Cahuilla and neighboring tribes as well as European-American migrants. During the Mexican-American War, Chief Juan Antonio of the Mountain Cahuilla joined the *Californios* in attacking the Cahuilla's traditional enemy, the Luiseño, in an ambush that became known as the Temecula Massacre of 1847. General Andrés Pico and John C. Frémont signed the Articles of Capitulation in December 1847, and with the signing of Treaty of Guadalupe Hidalgo in February 1848, hostilities ended and Mexico relinquished California to the United States. Under the treaty, Mexico ceded the lands of present-day California, New Mexico, and Texas to the U.S. for \$15 million (Fogelson 1993:10). Within two years following the treaty, California applied for admission as a state.

During this time period, the Cahuilla faced increased pressure from waves of European-American migrants caused by the California Gold Rush (Smith 2002). Chief Juan Antonio led his warriors in 1851 to destroy the Irving Gang, a group of bandits who had been looting the San

Bernardino Valley. Following this attack Juan Antonio and his warriors, along with their families, moved east from Politana to a village called *Saahatpa* in the San Gorgonio Pass.

In November of 1851 Cupeño leader Antonio Garra led a revolt against the American government. Chief Juan Antonio did not participate in the conflict as he was friendly to Americans and was instrumental in capturing Garra, which ended the revolt (Cook n.d., Smith 2002). Some Cahuilla resorted to attacks on Americans following the California Senate's refusal to uphold an 1852 treaty to grant the Cahuilla control of their lands, but Chief Juan Antonio refused to participate in these attacks (Smith 2002). An ancient Indian trail ran through the Temecula Valley, which was "discovered" by early European colonizers at least by the 1820s. Known later as the southern Emigrant road or the Los Angeles-Fort Yuma Road, among a host of other names, it served as one of the main gateways by which many of the legendary wagon trains from the eastern states entered California in the years following the American annexation in 1846. The passing of the ranchos into private ownership brought the romantic era of rancheros and vaqueros, for which early California is best known, into full bloom. It was a short-lived era, but perhaps nowhere in California did its aura linger longer than in the Temecula Valley area. On the eastern side of the San Jacinto Mountains, regular transportation from settlers continued to increase especially once a formal wagon road was established by Hank Brown in the 1850s. This is now the route of Interstate 10 (Lech 2004:137-8).

The census-designated place of Anza was named after Spanish soldier and explorer Juan Bautista de Anza, who first passed through Anza Valley on March 16, 1774 and again on December 27, 1775. De Anza was looking for an overland route from Sonora to Alta California. He originally named the valley "San Carlos Valley" but it was renamed in his honor on September 16, 1926. The Anza Valley had a large inland lake until 1850, which heavily influenced decisions for European settlement. Settlers included ranchers, small amounts of miners, and honey producers in the early 1800s. From the late 1860s the area was settled by families building ranches under the Homestead Act of 1862. In 1893 Anza was officially recognized as part of Riverside County. The community has remained relatively isolated until the 1970s and continues to have the small-town feel of a close-knit community of ranchers, farms, businesses, and churches. The community currently seeks incorporation as a town (Anza Valley 2014).

PROJECT AREA HISTORY

The Project is located on the Cahuilla Indian Reservation. The Cahuilla Indian Reservation was established by Executive Order on December 27, 1875. Paui'we'yum'' (Cahuilla Valley) is comprised of several villages with *Paui* (hot springs in Cahuilla) being the main village (Tiller 1996; Cahuilla Band of Indians 2018). The reservation measures 18,884 acres and is inhabited by 325 members of the Cahuilla Band of Mission Indians and their families.

According to the earliest historic USGS topographic map from 1901 (San Jacinto 30') there was no development within the APE. A road traverses southwest-northeast; however, it is unlikely to

be the current Cahuilla Road as the route and location do not match the existing road. Cahuilla Road does not appear in its current location relative to the APE until the 1950s (USGS Hemet, 15'). By 1981 (USGS Cahuilla Mountain 7.5'), multiple dirt access roads are seen running adjacent on the east of the APE.

Researching the earliest historic aerials dating from 1978, no development in present within the APE. SR-371/Cahuilla Road can be seen in its current route as is the dirt access road that runs parallel to the eastern perimeter of the APE. The APE is currently undeveloped and appears the same as depicted on the 1978 aerial.

RECORDS SEARCH

CALIFORNIA HISTORIC RESOURCES INFORMATION SYSTEM

Cogstone archaeologist, Nancy De La Cruz, conducted a search of the California Historical Resource Information System (CHRIS) from the Eastern Information System (EIC) located on the campus of University of California, Riverside, on June 12, 2019, which included the entire APE as well as a one-mile radius. Results of the record search indicate that only one previous study has been completed within the APE while an additional three studies have been completed previously within a one-mile radius (Table 2).

Table 2. Previous Cultural Resource Studies within a One-Mile Radius of the APE

Report No. (RI-)	Authors	Title	Year	Distance from APE	USGS Quad Map(s)
07719	McGinnis, Patrick	Archaeological Survey Report for	2004	0.5-1.0	Cahuilla
	and Michael Baksh	the Cahuilla Creek Motocross		Miles	Mountain
		Facility Cahuilla Indian			
		Reservation, Riverside County,			
		California			
07745	McGinnis, Patrick	Cultural Resources Survey Report	2005	0.5-1.0	Aguanga,
	and Michael Baksh	for a Hazardous Fuels Reduction		Miles	Anza, Beauty
		Project Cahuilla Indian			Mountain,
		Reservation, Riverside County,			Cahuilla
		California			Mountain
10187	Mattiussi-	Installation of Centerline and	2016	Within	Aguanga,
	Gutierrez, Sarah	Shoulder Rumble Strips from			Anza,
	and Gabrielle Duff	Wilson Valley Road to State Route			Butterfly
		371/74 Junction. Riverside County,			Peak,
		California, State Route 371			Cahuilla
		PM60.23/67.66 and PM			Mountain
		72.8277.14.			

Report No. (RI-)	Authors	Title	Year	Distance from APE	USGS Quad Map(s)
10632	McGinnis, Patrick	Cultural Resource Survey Report	2010	0.25-0.5	Aguanga,
	and Hillary	for the Cahuilla Aggregate		Miles	Beauty
	Murphy	Assessment Project, Cahuilla			Mountain,
		Indian Reservation, Riverside			Cahuilla
		County, California			Mountain

No previously recorded cultural resources were identified within the APE. A total of seven cultural resources were previously recorded within a one-mile radius of the APE (Table 3). Of these, one is located within 0.25 miles of the APE, one is located within 0.25 to 0.5 miles of the APE, and five are located within 0.5 to one-mile of the APE.

Table 3. Previously Recorded Cultural Resource within a One-Mile Radius of the APE

Primary No. (P-33-)	Trinomial (CA-RIV-)	Resource Type	Resource Description	Date Recorded	Distance from APE (in miles)
000476	476	Prehistoric Resource	Rock art with artifact scatter	1969	0.5-1
000639	-	Prehistoric Resource	Bedrock mortar site with rock art	1973, 2012	0.5-1
012891	7164	Prehistoric Resource	Habitation with milling and hearth features	2003	0.5-1
012898	7167	Prehistoric Resource	Bedrock milling	2003	0.5-1
020870	10794	Historic Resource	Improved dirt road	2012	0-0.25
020875	10799	Historic Resource	Improved dirt road	2012	0.5-1
028740	-	Prehistoric Resource	Quartz flakes (isolate)	2009	0.25-0.5

OTHER SOURCES

In addition to the EIC records search, a variety of sources were consulted in July 2019 to obtain information regarding the cultural context of the Project vicinity (Table 4). Sources included the NRHP, CRHR, California Historical Resources Inventory (CHRI), California Historical Landmarks (CHL), and California Points of Historical Interest (CPHI). Specific information about the APE, obtained from historic-era maps and aerial photographs, is presented in the APE History section.

Table 4. Additional Sources Consulted

Source	Results
National Register of Historic Places (NRHP)	Negative
Historic USGS Topographic Maps	According to the earliest historic topographic map from
	1901 (San Jacinto, 30 minute map) there is no
	development within the APE. A road traverses
	southwest-northeast, however it is unlikely to be the
	current Cahuilla Road as the route and location does not
	match the existing road. Cahuilla Road does not appear
	in its current route and location relative to the APE until
	the 1950s (Hemet, 15 minute map). By 1981 (Cahuilla
	Mountain, 7.5 minute map), multiple dirt access roads
	are seen running adjacent to the east of the APE.
Historic US Department of Agriculture Aerial	According to the earliest historic aerials from 1978,
Photographs	there appears to be no development within the APE. US
	371 (Cahuilla Road) is present in its current route as is
	the dirt access road the runs parallel to the eastern
	perimeter of the APE. The APE currently appears
	unaltered from the 1978 aerial.
California Register of Historic Resources (CRHR)	Negative
California Historical Resource Inventory (CHRI)	Negative
California Historical Landmarks (CHL)	Negative
Local Historic Inventories	Negative
California Point of Historical Interest (CPHI)	Negative
Bureau of Land Management (BLM) General Land	Cahuilla Band, June 15, 1880: Indian Trust Patent (21
Office Records	Stat. 199)

HISTORICAL CONSULTATIONS

Cogstone identified three historical societies and local museums that may have information about the APE's historic past. These organizations were the Anza Trail Foundation, the Hamilton Museum and Ranch Foundation, and the Riverside Historical Society. Letters were mailed via certified US mail on July 8, 2019 to the Hamilton Museum and Ranch Foundation and the Riverside Historical Society. As no physical address was available for the Anza Trail Foundation so they were contacted by email. A second attempt to contact these organizations was made by telephone calls and emails on July 16, 2019. A final attempt to contact them was made via email on July 26, 2019. Responses were received from two of these sources and are summarized below. An example of the request letter and the contact log are included in Appendix B.

<u>The Anza Trail Foundation:</u> On July 16, 2019, a representative of the Juan Bautista de Anza Historical Trail responded saying that they had received our information request from the Anza Trail Foundation. They stated that the APE is not near the trail and would not impact the integrity of the trail and its associated features. No other information was provided.

<u>Hamilton Museum and Ranch Foundation</u>: Two responses were received from the Hamilton Museum and Ranch Foundation. On July 16, 2019, a museum volunteer stated via telephone call that there is an elderly, long-time resident of the area who Cogstone may want to interview about what she remembered regarding events in the surrounding area. Attempts to schedule this interview have not succeeded as of the date of August 19, 2019. On July 17, 2019, Cogstone received a second response from the Foundation who stated that artifacts found nearby indicate that the area in proximity to the APE was a resource gathering location.

NATIVE AMERICAN CONSULTATIONS

Cogstone requested a Sacred Lands File search from the Native American Heritage Commission (NAHC). On June 24, 2019 the NAHC responded that the results of this search were negative for Tribal Cultural Properties (TCPs) within the APE (Appendix C). Section 106 consultation was not required for the Project.

GEOARCHAEOLOGICAL SENSITIVITY ANALYSIS

GEOLOGICAL SETTING

The Project is located in the Anza area of the Peninsular Ranges Geomorphic Province. The Peninsular Ranges are the result of the Pacific Plate and the North American Plate grinding past each other and forming north-south trending mountain ranges where the two plates collide along the San Andreas Fault Zone. The Peninsular Range Province extends from Mount San Jacinto in the north to Baja California in the south. The majority of the region is mapped as Mesozoic granitics. In valleys these rocks are overlain by primarily Pleistocene non-marine sedimentary units.

STRATIGRAPHY

The APE is mapped as Holocene alluvium. Cretaceous quartz diorite to granodiorite is mapped just to the north of SR-371 and is present below the Holocene alluvium (Dibblee 2008; Figure 6)

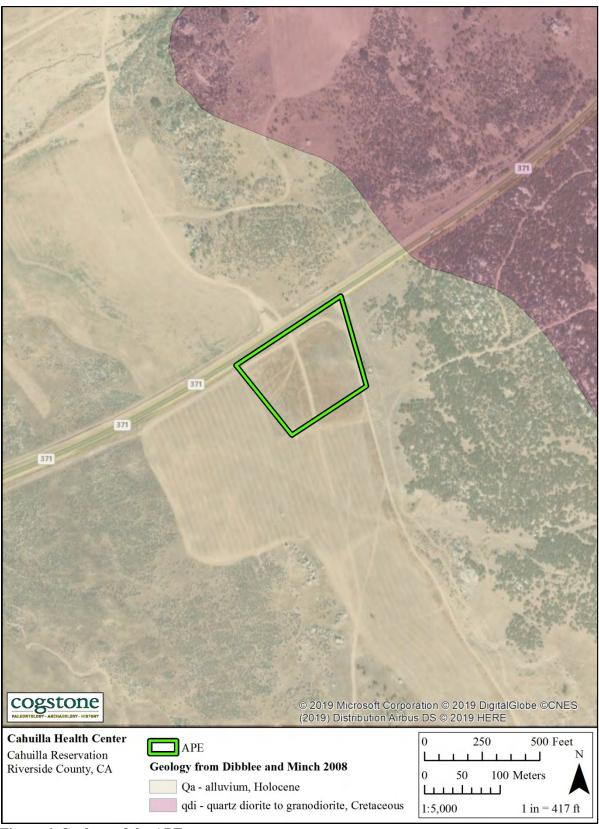


Figure 6. Geology of the APE

ALLUVIUM, HOLOCENE

These undifferentiated water deposited sediments are emplaced on the slopes and bottoms of valleys. Sediments can be traced to active or recently active processes and are less than 11,700 years old. Clasts coarsen upstream with boulders up to several meters across being deposited near the mountains during flash floods.

QUARTZ DIORITE TO GRANODIORITE, CRETACEOUS

These grey to white, medium grained holocrystalline massive granitic rocks are part of the core of the Peninsular Ranges Geomorphic Province (Dibblee 2008). Between 145 to 66 million years ago, these rocks were emplaced as a magma chamber that was then cooled into the current batholith.

METHODS

University of California Davis National Resources Conservation Service California Soils Resource Lab (UCD SoilWeb, accessed July 2019) soils maps were consulted along with the United States Department of Agriculture National Resources Conservation Service (USDANRCS, accessed July 2019) soils descriptions, and geologic maps were utilized for this assessment. Using the UCD maps, the APE was mapped for soils (Figure 7). All sites were accessed in July 2019 for this assessment.

Subsurface site preservation depends on many factors. Soils and locations were analyzed for grain sizes, slope, and environmental indicators that contribute to the preservation of sites. Primarily sites accumulate where people have the highest probability of living; on lower slope gradients near water sources but in areas that are unlikely to experience regular flooding. Additionally, lower slope gradients decreases erosion and increases deposition assisting in site burial. Both pebbly and coarser grain sizes as well as clay rich soils preserve artifacts poorly. The age of a soil also determines the likelihood of buried archaeological sites and must be assessed as the older soils are less likely to contain sites unless items were intentionally buried in them. Soils likely too old for site preservation have duripans (hardpans), and argillic (clay rich) horizons; while younger soils with a higher potential for preservation are indicated by the lack of a B horizon or the presence of a cambic horizon. Both Holocene alluvial and aeolian units have a higher potential for artifacts as the soils were co-deposited with the local cultural groups.

CLASSIFICATIONS FOR BURIED SITE POTENTIAL ARE AS FOLLOWS

Very low: Soils are underlain by deposits that predate human occupation of the region. Soils that include B horizons, especially if they are argillic or silicic (duripan) horizons are also classified as very low. Additionally exposed bedrock, borrow pits, heavily eroded or gullied land, or water bodies have a very low potential. Areas of high erosion, water, borrow pits, rock



Figure 7. Soils of the APE

outcrops, or sediments mapped as Pleistocene or older are classified as having a very low potential.

Low: Soils are underlain by deposits that predate human occupation of the region, high-energy deposits unlikely to contain cultural materials in a primary context, are residual soils (soils weathered in place above bedrock), or include B horizons. Low-potential areas include Inceptisols. These are formed in residual soils weathered directly from bedrock and, thus, have a low potential for buried sites. Areas where soils are weathered from bedrock, dissected alluvial fans, and locations where soils are forming on mountains are classified as having a low potential.

Medium: Soils are underlain by deposits that are most likely terminal Pleistocene or Holocene in age, possibly have intact buried surfaces, or have sediments that are likely to have been deposited in a low-energy environment. Alluvial fans, fan aprons, valley fills, dissected remnants of alluvial fans, floodplains, and drainages are classified as having a medium potential.

High: Soils are underlain by deposits that are most likely terminal Pleistocene or Holocene in age, or sediments represent low-energy deposits, or have a high potential to contain buried intact geomorphic surfaces that could have been used by humans in the past. Alluvial stream terraces and floodplains, terrace escarpments, alluvial fans (fan skirts, fan aprons, and inset fans), and areas with aeolian deposits are classified as having a high potential.

RESULTS

The APE is mapped as Holocene alluvium with Cretaceous quartz diorite to granodiorite is present at an unknown depth below (Dibblee 2008).

Most of the APE is mapped as the Mottsville loamy coarse sand with a 2% to 8% slope. As such, it is assigned a medium potential for buried sites. In contrast the Bull Trail sandy loam occurs on slopes of 8% to 15%. Additionally the soil is eroded making burial less likely. The Bull Trail sandy loam is assigned a low potential for buried sites (Figure 6, Appendix D)

SURVEY

The Bureau of Indian Affairs, Pacific Region Acting Director Dale Risling, determined that the Project did not require an Archaeological Resources Protection Act (ARPA) permit based on the email from the Cahuilla Band of Mission Indians (Tribe) Cultural Coordinator granting Cogstone permission to conduct archaeological survey on their lands and because Cogstone did not intend to collect or conduct any ground disturbance during the intensive pedestrian survey. See emails

in Appendix E.

METHODS

The survey stage is important in a Project's environmental assessment phase to verify the exact location of each identified cultural resource, the condition or integrity of the resource, and the proximity of the resource to areas of cultural resources sensitivity. All undeveloped ground surface areas within the ground disturbance portion of the APE were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools or fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes, foundations), or historic-era debris (e.g., metal, glass, ceramics). Existing ground disturbances (e.g., cutbanks, ditches, animal burrows, etc.) were visually inspected. Photographs of the APE, including ground surface visibility and items of interest, were taken with a digital camera.

RESULTS

On July 24, 2019, Cogstone Archaeologist, Dr. John Gust, surveyed the entirety of the four-acre APE using transects spaced 15 meters apart. Native American Monitor, Danny Lee Esparza, of the Cahuilla Band of Mission Indians was present during the survey and walked the APE investigating areas of interest and pushing aside the dry brush in a similar fashion. Ground visibility ranged from poor (0-5%) within the majority of the APE to excellent within the area to become a retention pond (nearly 100%) where parking currently occurs (Figures 8 and 9). In areas with vegetation, the dry brush was pushed aside every 15 to 20 meters to expose the bare ground (Figure 10).

Bill Guerth of the Riverside-San Bernardino Indian Health Clinic, Inc. and Mr. Esparza stated that approximately ten years ago the Tribe granted permission for excess fill to be dumped and spread within the APE. This fill contained a large amount of modern trash debris especially plastic. The Tribe has had a number of workdays aimed at cleaning up the debris but a large amount is still present.

The survey was negative for prehistoric or historic cultural resources. Two small fragments of potentially historic white earthenware tiles were identified during the survey however, their close proximity to the modern refuse within the APE suggests that these were imported with the fill and not in context. Given this association they were not recorded.



Figure 8. Overview of the APE, view west



Figure 9. Overview of the APE including parking area, view north



Figure 10. Overview of the APE sediments with modern refuse, plan view

STUDY FINDINGS AND RECOMMENDATIONS

This cultural resources assessment included a review of existing literature and historical maps, a CHRIS record search, a Sacred Lands File search, and an intensive pedestrian survey of the entire APE. No cultural resources have been previously recorded in the APE or within a half-mile of the APE nor were any identified during the pedestrian survey. As a result, there will be no effects to known historic properties.

However the results of the geoarchaeological analysis indicate that the likelihood of encountering intact subsurface deposits is moderate. No adverse effects are recognized based on the survey and records. Further, the lack of prior development within the APE, the inability to observe potential cultural resources due to dense vegetation and the spread of fill to an unknown depth over the APE and that the maximum depth of excavation would be five feet below surface, the potential for discovery of unknown intact archaeological deposits, resources, or features by the implementation of this Project is also moderate. In order to avoid impacts to unknown subsurface historic properties, it is recommended that archaeological and Native American monitoring be conducted during all ground-disturbing activities within native sediments. An ARPA permit will be required in the event that cultural material is identified and collected

during construction activity.

In the event of an unanticipated discovery, all work must be suspended within 50 feet of the find until the BIA and Tribe are contacted and a qualified archaeologist can evaluate it. In the unlikely event that human remains are encountered all work must cease near the find immediately. The BIA may request the help of the Riverside County Coroner. Further, if the human remains are determined to be Native American, or if funerary objects, sacred objects, or objects of cultural patrimony are identified during the Project, the processes established within the Native American Graves Protection and Repatriation Act (NAGPRA) and its implementing regulations will be followed.

REFERENCES CITED

Anza Valley

A Brief History of Anza Valley, California. Accessed online at http://www.anza-valley.com/, Accessed August 7, 2019.

Arnold, J.

1992 Complex Hunter-Gatherer-Fishers of Prehistoric California: Chiefs, Specialists, and Maritime Adaptations of the Channel Islands. *American Antiquity* 57:60-84.

Bean, L. J.

1972 Mukat's People: The Cahuilla Indians of Southern California. University of California Press, Berkeley.

Cahuilla Band of Indians

2018 Cultural Committee. https://www.cahuilla.net/cultural-1, accessed August 13, 2019.

California Department of Fish and Game

2019 California Mammals. https://www.wildlife.ca.gov/Conservation/Mammals, Accessed August 2019.

Cook, Roy

n.d. Antonio Garra and Tarnished California Gold. Accessed online at http://www.americanindiansource.com/gara/gara.html, last accessed August 9, 2019.

Dibblee, T. W. Jr.

2008 Geologic Map of the Hemet and Idyllwild 15 minute quadrangles Riverside County, California. Edited by J. A. Minch. Santa Barbara Museum of Natural History Dibblee Geology Map DF-371, 1:62,500 scale.

Fogelson, R. M.

1993 The Fragmented Metropolis: Los Angeles, 1850-1930. University of California Press, Berkeley, California.

Hall, C. A. Jr.

Western Transverse Ranges. In *Introduction to the Geology of Southern California and Its Native Plants* (pp. 233-279). Berkeley: University of California Press.

Hudson, Tom

1989 A Thousand Years in Temecula Valley. Reprinted by the Old Town Temecula Museum, Temecula, California.

Lech, S.

Along the Old Roads: A History of the Portion of Southern California that Became Riverside County 1772-1893. Published by Author, Riverside, California.

Ohles, W. V.

1997 Mission San Miguel Property and Padres. Word Dancer Press, Sanger, CA

Ornduff, R., P. M. Faber, and T. Keeler-Wolf

2003 Introduction to California Plant Life, Revised Edition. California Natural History Guides, Volume 69. Berkeley: University of California Press.

Raab, L. M. and D.O. Larson

1997 Medieval Climatic Anomaly and Punctuated Cultural Evolution in Coastal Southern California. *American Antiquity* 62(2): 319-336.

Schaefer, J. and D. Laylander

2007 The Colorado Desert: Ancient Adaptations to Wetlands and Wastelands. In *California Prehistory: Colonization, Culture and Complexity*, edited by T. Jones and K. Klar, pp. 247-257. Lanham, Maryland: Altamira Press.

Smith, Jeff

An Indian Chief Envisions the Mother of All Warpaths. In *San Diego Reader*. Accessed Online at https://www.sandiegoreader.com/news/2002/jul/03/unforgettable-mother-all-warpaths/#, last accessed August 9, 2019.

Strong, W. D.

1929 Aboriginal Society in Southern California. *University of California Publications in American Archaeology and Ethnology* 26:1-349.

Sutton, M.

2011 The Palomar Tradition and its Place in the Prehistory of Southern California. *Pacific Coast Archaeological Society Quarterly* In Press.

Sutton, M. and J. Gardner

2010 Reconceptualizing the Encinitas Tradition of Southern California. *Pacific Coast Archaeological Society Quarterly* 42(4):1-64

Tiller, V. E. Velarde (ed.)

1996 *Tiller's Guide to Indian Country: Economic Profiles of American Indian Reservations.*BowArrow Publishing Company.

United States Department of Agriculture National Resources Conservation Service (USDA-NRCS) Official Soil Series Descriptions. Accessed July 2019 https://soilseries.sc.egov.usda.gov/osdname.aspx

University of California Davis National Resources Conservation Service California Soils Resource Lab (UCD SoilWeb). Accessed July 2019 http://casoilresource.lawr.ucdavis.edu/soilweb-apps/

APPENDIX A. QUALIFICATIONS



DESIREÉ RENEÉ MARTINEZ Task Manager & QA/QC

EDUCATION

1999 M.A., Anthropology (Archaeology), Harvard University, Cambridge 1995 B.A., Anthropology, University of Pennsylvania, Philadelphia

SUMMARY QUALIFICATIONS

Ms. Martinez is a qualified archaeologist with 22 years of experience in archaeological fieldwork, research, and curation. She has expertise in the planning, implementation, and completion of all phases of archaeological work and has participated in archaeological investigations as a principal investigator, crew member, and tribal monitor. She meets national standards in archaeology set by the Secretary of Interior's *Standards and Guidelines for Archaeology and Historic Preservation*. Her experience also includes compliance with CEQA, NEPA, NHPA Sec. 106, NAGPRA, SB 18, AB 52, California General Order 131-D exemption, and other cultural resource laws. Ms. Martinez has managed technical assessments and prepared cultural resources sections for EIR, EIS, and PEA documents. In addition, Ms. Martinez has extensive experience consulting with Native American leaders and community members in a variety of contexts.

SELECTED PROJECTS

- Veterans Affairs Long Beach Health Systems (VALBHS), Cultural Resources Services and Native American Monitoring, Long Beach, Los Angeles County, CA. Managed a variety of public works and infrastructure improvements on the VALBHS campus. Services have included archaeological surveys, testing, archaeological monitoring, providing and managing Projects on the campus included an intensive-level archaeological survey utilizing ground penetrating radar and magnetometry to identify subsurface cultural debris, accurately map abandoned utilities, locate a historic trash pit within the APE, archaeological and Native American monitoring of construction activities of the Fisher House and Golf Course project area. Principal Archaeologist. 2014-2018
- San Bernardino Countywide On-Call Services, San Bernardino, CA. As prime contractor, Cogstone provided cultural, historical, and paleontological resource services for short term projects. Task services included cultural resources assessments and monitoring in compliance with CEQA, NEPA, Section 106 of the NHPA, and County regulations. Short-term projects included Pioneertown and other roads, Bear Springs, Aldorf Road, Elder Creek, NTH Bridges, Marshall Boulevard, Cajon Creek, Dola Bridge, Lanzit Ditch, and Luna Road. County of San Bernardino. Task Manager. 2016-2018
- Longboat Solar Photovoltaic, EDF Renewable Energy, Barstow and Lenwood, San Bernardino County, CA. The project was construction of a new solar facility. Managed the cultural resources assessment including Phase I and Extended Phase I studies to support MND for this ~235-acre site. Managed archaeological monitoring, Native American coordination, Phase II testing, and was co-author of the treatment plan and compliance report. Sub to Environmental Intelligence. Task Manager/Principal Investigator. 2015-2017
- California State University, Long Beach, On-Call Archaeological Services, Physical Planning and Facilities Management, Long Beach, Los Angeles County, CA. Manages archaeological and Native American monitoring of excavations or trenching for public works and buildings projects. Improvements to athletic fields, recycling center, parking lots, roads, outdoor dining, racetrack, liberal arts and performing arts buildings. Task Manager/Principal Investigator. 2015-2017
- Los Angeles Sanitation District On-Call, Los Angeles Department of Public Works (LADPW), Los Angeles, CA. As part of 12 task orders for this on-call contract, conducted archaeological investigations for Joint Outfall A, Joint Outfall B, and Joint Outfall D, produced technical reports, and provided Worker Environmental Awareness Program (WEAP) training for cultural resources sensitivity of construction forces and on-call support during construction. Principal Investigator. 2015-2017
- **Temecula Gateway EIR, Temecula, Riverside County, CA.** Record search, Sacred Lands search, NAHC consultation, field survey of 8.8-acre site, GIS mapping to support cultural resources assessment. Reviewed and edited cultural resources report. Sub to Michael Baker/PMC. Task Manager. 2015



WENDY GIDDENS TEETER

Principal Investigator for Archaeology

EDUCATION

University of California, Los Angeles, Ph.D. in Anthropology
 University of California, Los Angeles, M.A. in Anthropology

1992 University of Central Florida, B.A. in Anthropology, magna cum laude

SUMMARY OF QUALIFICATIONS

Dr. Teeter is a Register of Professional Archaeologist with over 30 years of experience in archaeological fieldwork, research, and curation. She has expertise in the planning, implementation, and completion of all phases of archaeological work. She meets national standards in archaeology set by the Secretary of Interior's *Standards and Guidelines for Archaeology and Historic Preservation*. Her experience also includes compliance with CEQA, NAGPRA, and other cultural resource laws. She has extensive experience in consultation with Native American leaders and community members in a variety of contexts and is a specialist in zooarchaeology with in depth experience and expertise in human and non-human bone identification.

CERTIFICATES/TRAININGS

2009 Section 106 Training, Advisory Council for Historic Preservation, Agua Caliente, Palm Springs, CA

SELECTED PROJECTS

- **Fowler Museum at UCLA, Los Angeles County, CA.** Managed the curation and care for over 1.5 million artifacts from federal, state, tribal, and private lands ensuring compliance with federal and state curation and cultural resource laws such as 36CFR79 and NAGPRA. Oversee all access and research to archaeology collections. Prepare all grant, compliance, and report writing. Curator of Archaeology and NAGPRA Coordinator. 1997-present
- Cultural Resources Survey, Rincon Band of Luiseno Indians, San Diego County, CA. In compliance with Section 106, Cogstone conducted a cultural resource survey across the Rincon Band of Luiseno Indians reservation. Managed survey, assessment, and evaluation of cultural resources encountered for inclusion on the National Register of Historic Places. Principal Investigator. 2018-ongoing
- Cottonwood Creek Pole Replacement, Southern California Edison, Santa Catalina Island, Los Angeles County, CA. Provided bone and material culture identification during pole replacement within a known village site. Sub to Cardno. Osteologist/Archaeologist. 2018
- NAGPRA Compliance Project, Catalina Island Museum, Santa Catalina Island, Los Angeles County, CA. Directed and managed the Catalina Island Museum's compliance with NAGPRA. Managed identification, analysis, and compliance report writing for project. Wrote all federal notices and managed involvement of culturally affiliated Native American tribes through inventory and repatriation. Principal Investigator. 2014-2016
- Proposed Improvements at the Westside Family YMCA, Los Angeles, Los Angeles County, CA. PNACRM conducted tribal and archaeological monitoring during surface disturbance of a parking garage. Conducted bone and material culture identification during impacts to cultural features. Managed records search, Sacred Lands search, GIS mapping, analysis and compliance report. Principal Investigator. 2015
- **Buffalo Beach Outstation, White's Landing, Santa Catalina Island, Los Angeles County, CA.** Pimu Catalina Island Archaeology Project conducted a Phase I Cultural Resources Assessment. Managed archaeological record searches, survey, site recordation, Sacred Lands search, and prepared report to identify material cultural impacts within the Project Area under CEQA. Co-Principal Investigator. 2014





EDUCATION

- 2016 Ph.D., Department of Anthropology, University of California, Riverside
- 2011 M.A., Department of Anthropology, University of California, Riverside
- 2007 M.A., Applied Geography, University of Colorado, Colorado Springs
- 2002 B.A., Department of Anthropology & Minor in Geography and Environmental Studies, University of Colorado at Colorado Springs

SUMMARY QUALIFICATIONS

Dr. Gust is a Registered Professional Archaeologist (RPA) with over seven years of experience in California archaeology and also serves as Cogstone's Lab Manager. He meets the qualifications required by the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* and his field expertise includes pedestrian surveys, excavation monitoring, resource recording, and historic artifact analysis.

SELECTED EXPERIENCE

- Los Serranos Park Project, Chino Hills, San Bernardino County, CA. Cogstone conducted cultural, paleontological, and Native American monitoring during ground-disturbing activities of undeveloped lands during the construction of a new 6.6 acre neighborhood park. Record searches, background research, and lab analysis of recovered materials from the project area were completed. As a result, mitigation measures were recommended via a monitoring compliance report. Principal Archaeologist & Report Author. 2018-2019
- Corona Affordable Housing Monitoring Project, City of Corona, Riverside County, CA. The project consisted of grading, for the development of affordable multi-family apartment buildings. Cogstone conducted cultural and paleontological resources monitoring, analyzed recovered artifacts and prepared a monitoring compliance report. Conducted lab work and artifact analysis. Sub to C&C Development. Archaeology Supervisor & Report Author. 2018-2019
- **Desert Sage Youth Wellness Center Historical Site, Riverside County, CA.** Cogstone reevaluated the Arnold Line Camp Site which included fieldwork documenting the current state of the site, historical research, updated the site record, and prepared a letter to SHPO regarding NHRP eligibility recommendations. Principal Archaeologist & Report Author. 2018-2019
- Los Angeles World Airports (LAWA) Terminal 1.5 Project, City of Los Angeles, Los Angeles County, CA.

 Cogstone conducted cultural and paleontological resources monitoring during the excavations for the construction of a new airport terminal at Los Angeles International Airport (LAX) that included the construction of a five-story structure with four above-grade levels and one basement level. Alvarez also conducted archaeological and paleontological Worker Environmental Awareness Program training for all construction personnel. The City of Los Angeles was the lead agency for the project. Sub to CDM. Archaeology Supervisor & Report Author. 2018-2019
- Livery-Ramona MONO Cell Facility Project, City of Ramona, San Diego County, CA. Cogstone was contracted by CA Telecom Trileaf to conduct a record search review and site visit for the candidate site in anticipation of changes to equipment in use at the existing facility. This study was conducted in accordance with Section 106 of the National Historic Preservation Act. Services included background research, pedestrian survey, record search, and produced a cultural resources letter report. Archaeology Supervisor & Report Author. 2019
- Florence Mills Apartments Project, City of Los Angeles, Los Angeles County, CA. This project was for the development of affordable and subsidized multi-family apartment buildings along the Historic Central Avenue Corridor in Southeast LA. Cogstone conducted monitoring of construction activities associated with excavation of historic-age and modern-age fill, as well as native soils, functions to ensure archaeological materials not previously exposed would be identified, assessed and impacts mitigated in order to preserve and/or extract the maximum scientific value of the resource. Archaeology Supervisor & Report Author. 2019





EDUCATION

2009 B.A., Archaeology/History, Simon Fraser University, Canada

SUMMARY QUALIFICATIONS

Ms. Duke is a qualified archaeologist and cross-trained paleontologist with over six years of experience in pedestrian survey, monitoring, excavation and burial recovery, as well as the identification of human and faunal skeletal remains. Duke is a Supervisor and Task Manager for several projects. She is proficient in the preparation of cultural resources assessment reports for a variety of state and local agencies throughout California. Duke is responsible for the organization of field data, lab supervision and organization, as well as identifying and cataloging prehistoric and historic artifacts. She also has experience with preparing artifact collections for curation at a variety of different repositories as well as fossil preparation and stabilization.

SELECTED PROJECTS

- **TetraGro Lancaster Project, City of Lancaster, Los Angeles County, CA.** The project consisted of a cultural resources assessment for the construction of a 22,000 square foot medical cannabis cultivation center with a clean anodized aluminum façade. Provided task management and supervised all work for the project which included a records search and an intensive pedestrian survey. Authored the Cultural Resources Assessment Report. Task Manager. 2018
- West Bastanchury Residential Subdivision Project, City of Yorba Linda, Orange County, CA. The project consisted of a cultural and paleontological resources assessment for the creation of a tentative tract map to subdivide a 13-acre City-owned lot into 23 residential lots. Provided task management and supervised all work for the project which included a records search and an intensive pedestrian survey. Authored the Cultural Resources Assessment Report. Task Manager. 2017
- **Upper Berryessa Flood Channel Improvements Project, City of Milpitas, Santa Clara County, CA.** The project consisted of numerous flood channel improvements along Berryessa Creek within an approximately 2.1 mile alignment on behalf of the U.S. Army Corps of Engineers in association with the Santa Clara Valley Water District. Conducted burial recovery for a total of nine in-situ burials and conducted archaeological monitoring of ground disturbing activities within the site. Responsible for the completion of all paperwork and drafted portions of the Burial Recovery and Archaeological Monitoring Compliance Report. Archaeologist. 2017
- Longboat Solar Photovoltaic, EDF Renewable Energy, Cities of Barstow and Lenwood, San Bernardino County, CA. The project involved construction of a solar energy facility within an approximately 234 acre property. Cogstone conducted cultural resources Phase I and Extended Phase I studies. Tasks included archaeological and paleontological resources records search, Sacred Lands search, Native American consultation. Identified and cataloged all artifacts recovered, delivered artifacts to tribes for repatriation. Sub to Environmental Intelligence. Archaeologist/Lab and Data Manager. 2015-2017
- **Crowder Canyon, Caltrans District 8, San Bernardino County, CA.** The project consisted of the realignment of SR-138. Participated in the archaeological testing and data recovery of two archaeological sites near Hesperia. Conducted excavation and data recovery of more than six prehistoric features. Sub to Applied Earthworks. Archaeologist. 2016
- Cold Canyon Landfill Expansion, South Berm Soil Removal Module 11, Arroyo Grande, San Luis Obispo County, CA. Conducted archaeological testing of the historic Patchett-Weir family site (CA-SLO-2559H) to assess its eligibility for listing on the National Register of Historic Places. The site would be impacted by landfill expansion and Army Corps of Engineers wetland restoration. Supervised the excavation of mechanically excavated trenches and hand excavated a unit within the site. Cataloged 20 historic-age artifacts recovered during excavation. Archaeologist. 2016



KIMBERLY SCOTT Geoarchaeologist

EDUCATION

M.S., Biology (paleontology emphasis), California State University San Bernardino
 B.S., Geology (paleontology emphasis), University of California, Los Angeles

TRAINING AND CERTIFICATIONS

2015 Trained and certified in geomorphology techniques, National Park Service, National Center for Preservation Technology and Training

SUMMARY QUALIFICATIONS

Ms. Scott has more than 22 years of experience in California as a paleontologist and sedimentary geologist She has performed geoarchaeological work on several projects which have been reviewed and accepted by the California State Historic Preservation Office (SHPO). In addition, she is experienced in taking field samples for Optically Stimulated Luminesce (OSL) dating. Scott is expert in the preparation of stratigraphic sections and sedimentology descriptions as well as paleoenvironmental analysis. She has written over 100 reports and is the Cogstone company safety officer

SELECTED PROJECTS

- I-605/Katella Avenue Interchange Improvements Project, Caltrans District 12, Orange County, CA. 605 Katella The project involved modifications to the interchange ramps and Katella Avenue. Conducted geoarchaeological analysis which included the preparation of stratigraphic sections and sedimentology descriptions as well as paleoenvironmental analysis. Sub to Michael Baker. Geoarchaeologist. 2018
- Golf Course Project, Veterans Affairs Long Beach Healthcare System, Long Beach, Los Angeles County, CA. The project consisted of preconstruction archaeological testing for a former golf course due to proposed construction activities required by an MOA between the VA, SHPO and ACHP. Testing was conducted using mechanical units and trenching. Prepared stratigraphic sections of each mechanical unit and trench and assessed sediments. Prepared geoarchaeological section of report. Geoarchaeologist. 2015-2016
- **Fisher House Project, Veterans Affairs Long Beach Healthcare System, Long Beach, Los Angeles County, CA.** The project consisted of preconstruction archaeological testing for a proposed new mental health group home required by an MOA between the VA, SHPO and ACHP. Testing was conducted using mechanical units and trenching. Prepared stratigraphic sections of each mechanical unit and trench and assessed sediments. Prepared geoarchaeological section of report. Geoarchaeologist. 2015-2016
- High Desert Corridor from State Route 14 to State Route 18, Los Angeles and San Bernardino Counties, California. This project involves construction of a new, approximately 63-mile long, east-west freeway/expressway and rail line between Apple Valley and Palmdale. Conducted geoarchaelogical analysis of the entire 63 mile corridor and classified all soils for potential to yield buried sites. Wrote geoarchaeological section of the report and reviewed related GIS maps for accuracy. Geoarchaeologist. 2014-2015





EDUCATION

2018 Geographic Information Systems (GIS) Certificate, California State University, Fullerton

2003 B.A., Anthropology, University of California, Santa Barbara

SUMMARY QUALIFICATIONS

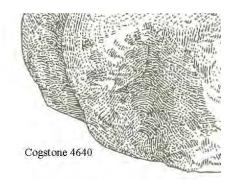
Mr. Freeberg has over 15 years of experience in cultural resource management and has extensive experience in field surveying, data recovery, monitoring, and excavation of archaeological and paleontological resources associated with land development projects in the private and public sectors. He has conducted all phases of archaeological work, including fieldwork, laboratory analysis, research, and reporting. Mr. Freeberg also has a strong grounding in conventional field and laboratory methods and is skilled in the use of ArcGIS.

SELECTED PROJECTS

- Laguna Beach Fire Department Fire Breaks, City of Laguna Beach, Orange County, CA. This project included the areas adjacent to homes and businesses requiring vegetation removals to create new fire breaks. Conducted pedestrian survey of the natural landscape and slopes located along the eastern and western sides of the SR-133 highway, south of El Toro Road to Pacific Coast Highway. Archaeological monitor. 2019
- Prime Deshecha Landfill Expansion, City of San Juan Capistrano, Orange County, CA. Assisted in the survey, data recovery and lab work for sites. Performed field STP and unit excavations, participated in post processing lab work cataloging recovered artifacts, and created fieldwork maps and report figures. Cultural Resources Analyst. 2018-2019
- I-15/Railroad Canyon Road Interchange, Caltrans District 8, City of Lake Elsinore, San Bernardino County, CA. Assisted in the preparation of the Noise Study Report and the Noise Abatement Decision Report for the Interstate 15 (I-15)/Railroad Canyon Road Interchange project. The improvements included the following: construction of a new full interchange at Franklin Street; reconstruction/widening of the Franklin Street overcrossing from two to four lanes; reconstruction/widening of the railroad undercrossing from four to six lanes (Summerhill Drive to Casino Road); and the reconfiguration of ramps. GIS Assistant. 2016
- **Jurupa Valley General Plan Update, Riverside County, CA.** The general plan update intended to model existing and future traffic issues. GIS Assistant. 2016
- SR-55 Improvements (between I-405 and I-5), Caltrans District 12, Cities of Santa Ana. Tustin, and Irvine, Orange County, CA. The analysis consisted of evaluating four build alternatives to provide congestion relief, improve traffic flow, and increase mobility on SR-55. GIS Assistant. 2015
- SR-710 North Study, Caltrans District 7, Los Angeles County, CA. The project proposed transportation improvements to improve mobility and relieve congestion in the area between State Route 2 and Interstate 5, Interstate 10, Interstate 210 and Interstate 605 in east/northeast Los Angeles and the western San Gabriel Valley. The project evaluated a number of alternatives that included the Transportation System Management/Transportation Demand Management, Bus Rapid Transit, Light Rail Transit, and the Freeway Tunnel Alternative. GIS Assistant. 2014
- Avenida La Pata Extension, District 12, Cities of San Clemente and San Juan Capistrano, Orange County, CA. This project was initiated to construct a roadway to connect La Pata Avenue to Antonio Parkway San Juan Capistrano running through the Prima Deshecha Landfill. Served as a field technician for the preconstruction archaeological surveying and data recovery for this project, as well as the archaeological and paleontological monitoring of this project. During laboratory analysis, Mr. Freeberg prepared numerous pinniped specimens with zip scribes. Technician & Monitor. 2014

APPENDIX B. HISTORICAL SOCIETY CONSULTATIONS





July 8, 2019

Anza Trail Foundation

RE: Request for Historical Information for the Proposed Cahuilla Health Center, Anza, Riverside County, California

To Whom It May Concern:

The Riverside - San Bernardino County Indian Health, Inc. (RSBCIH) proposes to construct a new health care facility on the 4 acre northern portion of APN 572-190-004 located in Anza, Riverside County, California. We are contacting you because we would like to invite members of the Anza Trail Foundation to provide input regarding the redevelopment of the Project area.

Project components include a single story structure, new on-site sewage disposal system, stormwater retention areas, paved parking, underground utilities, and other site improvements. The Project is located on the Cahuilla Indian Reservation thus the Project must comply with National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (Figures 1 and 2).

Cogstone Resource Management, Inc. conducted a records search at the Eastern Information Center on December 13, 2018; no previously recorded historic resources are located within the project area.

We would appreciate your providing any information regarding any historic resources or significant historical events within the APE. Please do not he sitant to contact me at slopez@cogstone.com or at (714) 974-8300. Thank you for your attention to this matter.

Sincerely,

Shannon Lopez, M.A. Architectural Historian

Cogstone Resource Management, Inc.

Attachments: Figure 1. Project vicinity map

Figure 2. Project location map

1518 West Taft Avenue Orange, CA 92865 Office (714) 974-8300 Branch Offices San Diego - Ríverside - Morro Bay - Northern California cogstone.com Toll free (888) 333-3212

Federal Certifications EDWOSB, SDB State Certifications DBE, WBE, SBE, UDBE



Figure 1. Project vicinity map

cogstone.com

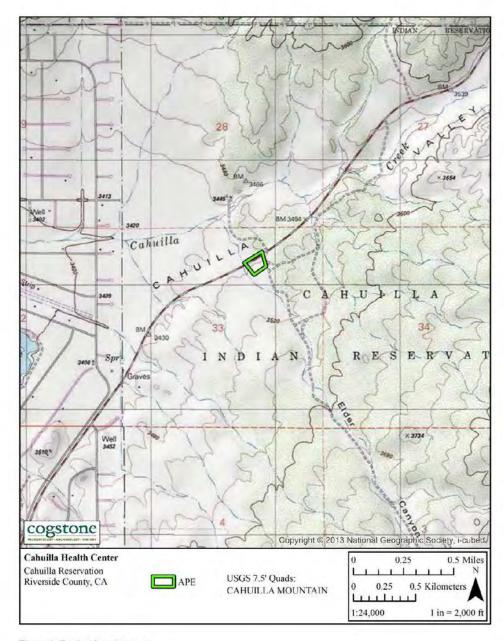


Figure 2. Project location map

cogstone.com

Historical Society	Date(s) and Method of First Contact Attempt	Date(s) and Method of Second Attempt	Date(s) and Method of Third Attempt	Date(s) of Replies Rec'd
Anza Trail Foundation	7/8/2019; email	7/16/2019; email	NA	On July 16, 2019 volunteer Doug Lane replied to email follow-up and indicated that he had sent the request to the Juan Bautista de Anza National Historic Trail and forwarded it internally with in the Anza Trail Foundation.
Hamilton Museum & Ranch Foundation	7/8/2019; USPS	7/16/2019; Phone, left voicemail	NA	On July 16, 2019 volunteer Doug Lane replied to email follow-up and indicated that he had sent the request to the Juan Bautista de Anza National Historic Trail and forwarded it internally with in the Anza Trail Foundation.
Riverside Historical Society	7/8/2019; USPS	7/16/2019; email through RHS homepage	7/26/2019; email through RHS homepage	None

APPENDIX C. SACRED LANDS FILE SEARCH

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission

1550 Harbor Blvd, Suite 100 West Sacramento, CA 95691 916-373-3710 916-373-5471 - Fax nahc@nahc.ca.gov

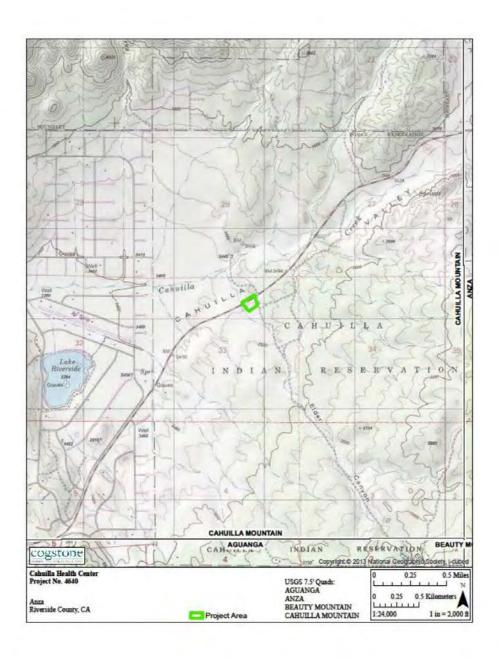
Information Below is Required for a Sacred Lands File Search

County: Riverside	
USGS Quadrangle Name: Cahuilla Moun	tain
Township: 7S Range: 2E	Section(s): 33
Company/Firm/Agency: Cogstone	
Street Address: 1518 W Taft Ave	
	Zip : 92865
City: Orange	Zip: 92865
Street Address: 1518 W Taft Ave City: Orange Phone: (714) 974-8300 Fax: (714) 974-8303	Zip: 92865

Project Description:

The Riverside - San Bernardino County Indian Health, Inc. (RSBCIH) proposes to construct a new health care facility on the northern portion of APN 572-190-004. Project proponents include a single story, 11,600 square foot structure; installation of underground utilities, septic and leach field system, water retention basin and storage tank, paved parking, and landscaping. The Project is located on the Cahuilla Indian Reservation thus the Project must comply with Federal regulations: National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act.

Project area map attached.



STATE OF CALIFORNIA

Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION Cultural and Environmental Department 1550 Harbor Blvd., Suite 100 West Sacramento, CA 95691 Phone: (916) 373-3710 Email: nahc@nahc.ca.gov Website: http://www.nahc.ca.gov Twitter: @CA_NAHC

June 24, 2019

Emily Barton Cogstone

VIA Email to: cogstoneconsult@cogstone.com

RE: Cahuilla Health Center Project, Riverside County

Dear Ms. Barton:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn

Associate Governmental Program Analyst

Attachment

Native American Heritage Commission Native American Contact List Riverside County 6/24/2019

Pauma Band of Luiseno Indians

Temet Aguilar, Chairperson P.O. Box 369 Luiseno

Pauma Valley, CA, 92061 Phone: (760) 742 - 1289 Fax: (760) 742-3422 bennaecalac@aol.com

Pechanga Band of Luiseno Indians

Paul Macarro, Cultural Resources Coordinator

P.O. Box 1477 Luiseno Temecula, CA, 92593

Phone: (951) 770 - 6306 Fax: (951) 506-9491 pmacarro@pechanga-nsn.gov

Pechanga Band of Luiseno Indians

Mark Macarro, Chairperson
P.O. Box 1477
Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778

Cahuilla

Cahuilla

Ramona Band of Cahuilla

John Gomez, Environmental Coordinator

epreston@pechanga-nsn.gov

P. O. Box 391670 Anza, CA, 92539 Phone: (951) 763 - 4105 Fax: (951) 763-4325 igomez@ramona-nsn.gov

Ramona Band of Cahuilla

Joseph Hamilton, Chairperson P.O. Box 391670

Anza, CA, 92539 Phone: (951) 763 - 4105 Fax: (951) 763-4325 admin@ramona-nsn.gov Rincon Band of Luiseno Indians

Jim McPherson, Tribal Historic
Preservation Officer
One Government Center Lane
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
vwhipple@rincontribe.org

Rincon Band of Luiseno Indians

Bo Mazzetti, Chairperson
One Government Center Lane
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bomazzetti@aol.com

San Luis Rey Band of Mission

San Luis Rey, Tribal Council
1889 Sunset Drive Luiseno
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org

San Luis Rey Band of Mission Indians

Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org

Santa Rosa Band of Cahuilla Indians

Steven Estrada, Chairperson P.O. Box 391820 Anza, CA, 92539 Phone: (951) 659 - 2700 Fax: (951) 659-2228 mflaxbeard@santarosacahuillansn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code. Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Cahuilla Health Center Project, Riverside County

PROJ-2019-003492

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Cahuilla

Native American Heritage Commission Native American Contact List **Riverside County** 6/24/2019

Santa Rosa Band of Cahuilla

Indians

Mercedes Estrada, P. O. Box 391820 Anza, CA, 92539 Phone: (951) 659 - 2700 Fax: (951) 659-2228

Cahuilla

mercedes.estrada@santarosacah

uilla-nsn.gov

Soboba Band of Luiseno

Indians

Scott Cozart, Chairperson P. O. Box 487

San Jacinto, CA, 92583 Phone: (951) 654 - 2765 Fax: (951) 654-4198 jontiveros@soboba-nsn.gov Cahuilla Luiseno

Soboba Band of Luiseno

Indians

Joseph Ontiveros, Cultural Resource Department P.O. BOX 487

San Jacinto, CA, 92581 Phone: (951) 663 - 5279 Fax: (951) 654-4198

Cahuilla Luiseno

jontiveros@soboba-nsn.gov

Torres-Martinez Desert Cahuilla Indians

Michael Mirelez, Cultural Resource Coordinator P.O. Box 1160

Cahuilla

Thermal, CA, 92274 Phone: (760) 399 - 0022 Fax: (760) 397-8146 mmirelez@tmdci.org

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code. Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Cahulla Health Center Project, Riverside County

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APPENDIX D. SOILS OF THE APE

Map symbol	Primary soil name and slopes; Other soils; General geomorphology and elevations	Soil Taxonomy/ Basic Description	Diagnostic features	Geology	Potential for buried sites
BsD2	Bull Trail sandy loam slope 8% to 15%., eroded. Found on alluvial fans. Bull Trail is 85% of total volume; 3% Bull Trail, 2% Mottsville, 2% Oak Glen, 2% Calpine, 2% Tollhouse, 2% Crouch, and 2% unnamed soils are also present	Bull Trail Soil Series: Order- Alfisols; Suborder- Xeralfs; Fine-loamy, mixed, mesic Mollic Haploxeralfs/ Bull Trail soils can have A, Ap, B21t, B22t, B23t, B3t, C1, C2, and C3 horizons.	In general: Loamy coarse sand. Fine-loamy to sandy loam. Found on alluvial fans and terraces. Slopes gently sloping to moderately steep. A horizons (0 to 20 cm): Greyish brown to brown coarse sandy loam, sandy loam or fine sandy loam. Organics: 1.5% to 3%. Rocks: up to 15% between 2mm to 20mm across; decreases to <1% of total volume 12.7 cm to 22.8cm below surface. B horizons (20 to 76 cm): Light brown to yellowish brown heavy sandy loam, sandy clay loam or loam. Clay: 18% to 27%. Rocks: up to 15% between 2mm to 20mm across. Acidity: slightly moderately acid to slightly alkaline C horizons (76 to 152 cm): Pale brown, light yellowish brown, yellowish brown, or light brownish gray sandy loam, loamy sand, or loam; some pedons are weakly cemented by silica or lime or both. Rocks: most pedons less than 15% but some are up to 35% of volume.	Mapped as Holocene alluvium (Qa)	low
MsC	Mottsville sandy loam, slope 2% to 8%. Found on alluvial fans and at the toes of slopes. Mottsville is 85% of total volume; 5% Riverwash, 5% Calpine, and 5% Oak Glen soils are also present.	Mottsville Soil Series: Order- Mollisols; Suborder- Xerolls; Sandy, mixed, mesic Entic Haploxerolls (Google Earth Soils overlay); or Mixed, mesic Torripsammentic Haploxerolls (official soil description, United States Department of Agriculture National Resources Conservation Service) / Mottsville soils can have A1, A2, Ac, C1, and C2 horizons.	In general: Loamy coarse sand. Formed in alluvium derived from granitic and found on alluvial fans, fan remnants, and fan aprons. Slopes 0% to 15%. Aridic bordering on xeric soil moisture regime. A horizons (0 to 46 cm): Moderate to dark grayish brown to very dark brown gravelly coarse sand, gravelly loamy coarse sand, loamy coarse sand, coarse sand, or loamy sand. 10% to 20% fine gravel. Organics: 0.5% to 3%. Rocks: 5% to 30%. Acidity: slightly acidic to neutral C horizons (46 to 157 cm): Light brownish gray to very dark grayish brown gravelly coarse sand, gravelly loamy coarse sand, loamy coarse sand, or coarse sand; some pedons have loamy sand. 20% fine gravel. Organics: 0.5% to 3%. Rocks: 5% to 30%. Acidity: moderately acidic to neutral	Mapped as Holocene alluvium (Qa)	medium

APPENDIX E. BIA CORRESPONDENCE

Cogstone 54



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Pacific Regional Office
2800 Cottage Way
Sacramento, California 95825

JUL 1 0 2019

John Gust, PhD Cogstone 1518 W Taft Ave. Orange, CA 92865

Dear Mr. Gust:

cc:

In response to your July 8, 2019 inquiry, it is our determination that no Archaeological Resources Protection Act (ARPA) permit is required for Cogstone's proposed archaeological survey concerning the proposed health clinic project on the Cahuilla Indian Reservation. This determination is based on the email from the Cahuilla Tribe's cultural coordinator indicating the Tribe's permission for Cogstone to conduct an archaeological survey on their lands, and your letter to BIA indicating that it will be a non-collecting, non-ground disturbing survey.

We do request, however, that one copy of the final inventory report be submitted to this office, and that you also provide copies of any reports to the Tribe at their request. If you have any questions, or require any additional assistance, please contact Dan Hall, Regional Archeologist, at (916) 978-6041.

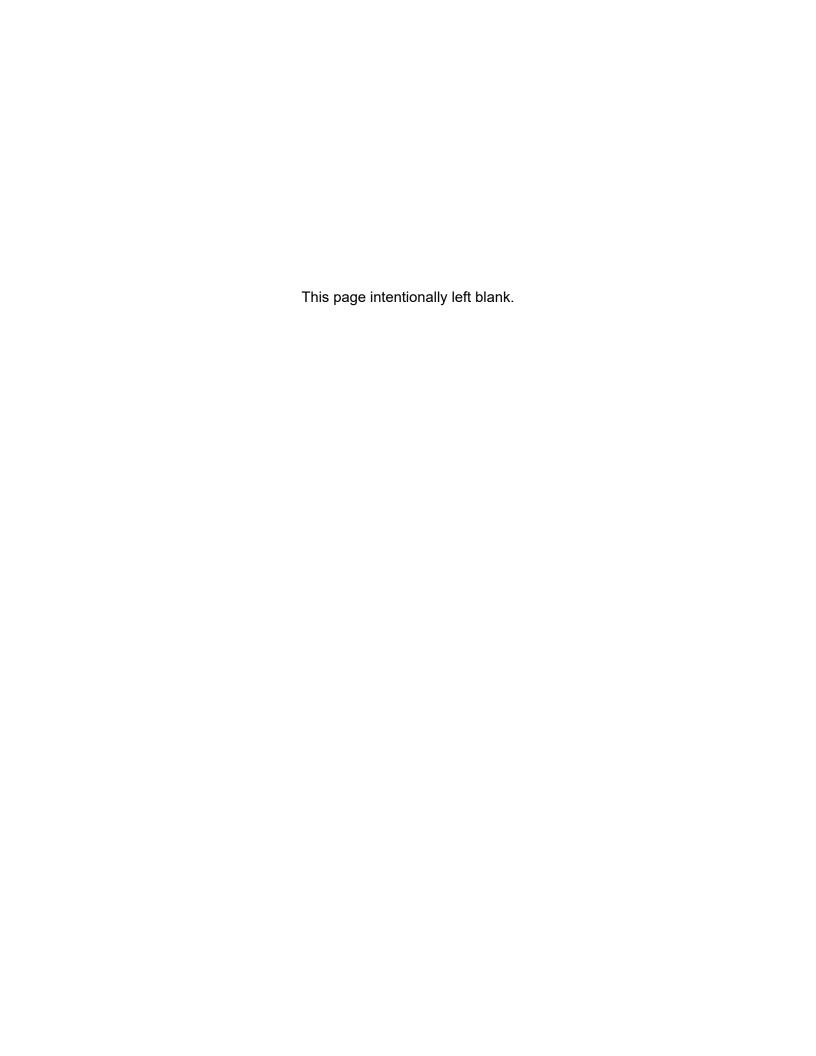
Sincerely,

Regional Director

Superintendent, Southern California Agency

Cogstone 55

E-2 THPO Consultation and Request For Concurrence





August 4, 2020

Anthony Madrigal, Sr. Tribal Historic Preservation Officer Cahuilla Band of Indians 52701 CA-Hwy 371 Anza, CA 92539 **VIA Email**

RE: Riverside-San Bernardino County Indian Health, Inc. (RSBCIHI) – Cahuilla Indian Health Clinic Replacement Project

Dear Mr. Madrigal:

The Bureau of Indian Affairs (BIA) is considering a business lease agreement to allow the Riverside-San Bernardino County Indian Health, Inc. (RSBCIHI) to construct and operate a new health clinic on the Cahuilla Indian Reservation. The existing clinic is located at 39100 Contreras Rd #C in Anza, Riverside County. A new replacement health clinic is proposed to be constructed on 3.01 acres of vacant tribal land (a portion of APN 572-190-004), located south of State Route 371 and 0.9 miles north east of Puckit Drive (T7S, R2E, S33, USGS 7.5 Quadrangle Cahuilla Mountain).

BIA's action of approving a business lease meets the definition of an Undertaking in accordance with 36 CFR Part 800.16(y) and therefore requires the completion of a Section 106 review in accordance with the National Historic Preservation Act of 1966 (NHPA) (16 U.S.C. §470f).

A Cultural Assessment Report (Report) was prepared for the Cahuilla Indian Health Clinic Replacement Project (Project), which provides environmental documentation as required by Section 106 of the NHPA. The Report identified the horizontal Area of Potential Effect (APE) as four-acres which consists of the entirety of the three-acre project site + buffer including areas used for staging and storage of materials during construction. Vertically the APE is considered to be up to five feet below modern ground surface. The BIA determined that an Archaeological Resources Protection Act (ARPA) Permit was not required for preparation of the Report. The Report concluded that the proposed Undertaking and subsequent construction would result in no historic properties affected pursuant to 36 CFR Part 800.4(d)(l).

RSBCIHI requests your concurrence on the APE delineation and the Finding of No Effect. For your review, documentation in accordance with 36 CFR Part 800.4(d)(1) to support no historic properties identified within the current APE is enclosed.

If you have any questions or comments regarding this matter, or require any additional information, please do not hesitate to contact me at christina@brginc.net or at 619.925.2836 (cell).

Sincerely,

Christina J. Willis, President

Chustra & Willis

Enclosures: Figure 1 – Area of Potential Effect

Documentation of No Historic Properties Affected

Cultural Resources Assessment Report for the Cahuilla Health Center Project

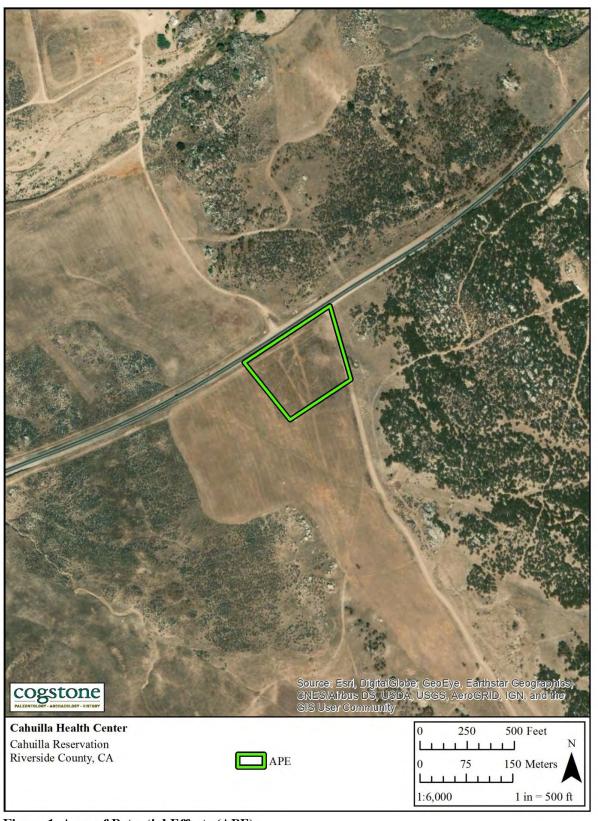


Figure 1. Area of Potential Effects (APE)



DOCUMENTATION - NO HISTORIC PROPERTIES AFFECTED RSBCIHI Cahuilla Indian Health Clinic Replacement Project

1) A description of the undertaking, specifying the Federal involvement, and its area of potential effects, including photographs, maps, drawings, as necessary

The BIA is considering a long-term land lease to allow the Riverside-San Bernardino County Indian Health, Inc. (RSBCIHI) to construct and operate a new health clinic on the reservation. The proposed replacement clinic would consist of a 11,600 square feet single-story building, that would provide space to support a modern and adequately staffed health care delivery system. The new clinic would ensure availability of the medical services needed to maintain and promote the health status and overall quality of life for the residents of the service area. In addition, the facility would include a covered outdoor area; stormwater retention basin; a septic system; an underground water storage tank; 90 parking spaces along with landscaping and lighting. The replacement clinic would be located on a 3.01-acre vacant parcel, immediately south of State Route 371 (SR-371)/Cahuilla Road and 0.9 miles north east of Puckit Drive. The project site is bordered by SR-371 to the north and vacant land on the south, east, and west. The proposed site itself is currently vacant of all structures and contains sparse desert vegetation.

Construction would include clearing existing vegetation, site grading and paving, construction of a driveway entrance/exit from SR-371; installation of a new underground water storage tank and retention basin; and extension of electrical lines to the site. The site's wastewater would be handled by a new septic tank and leach field system. Site preparation would involve minor cuts and fills in order to achieve the desired building pad elevation and provide adequate gradients for site drainage.

The horizontal Area of Potential Effect (APE) is a four-acre portion of APN 572-190-004 and encompasses all ground disturbing activities identified in the project description above. The vertical APE would range between six-inches and 5-feet for construction of the new site access, the building pad, utilities, septic system and retention basin.

2) A description of the steps taken to identify historic properties

A research strategy consisting of California Historical Resources Information System (CHRIS) and Native American Heritage Commission (NAHC) information searches, consultation with NAHC identified contacts, and field-survey was used to identify historic properties in the APE.

- A. The <u>CHRIS Search</u> was completed at the Eastern Information Center of the California Historical Resources Information System on *June 12, 2019* for the APE and a 1-mile study radius. The records search found no previously recorded cultural resources or historic properties within the APE.
- B. The <u>NAHC Sacred Lands and Contacts Search</u> was completed on June 24, 2019. The Sacred Lands File returned negative results. The list of tribal contacts provided included fourteen (14) contacts representing the Pauma Band of Luiseno Indians; Pechanga Band of Luiseno Indians; Ramona Band of Cahuilla; Rincon Band of Luiseno Indians; San Luis Rey Band of Mission Indians; Santa Rosa Band of Cahuilla Indians; Soboba Band of Luiseno Indians; and Torres-Martinez Desert Cahuilla Indians.
- C. <u>Native American Consultation</u> was completed with all contacts identified by the NAHC. Consultation involved field-visits with the Cahuilla Band of Indians Representative, Danny Lee Esparza.
- D. <u>Field-Survey:</u> On July 24, 2019, Cogstone completed an intensive pedestrian survey of the APE and was accompanied by Danny Lee Esparza. The survey was negative for prehistoric and historic cultural resources



(3) The basis for determining that no historic properties are present or affected.

Cogstone's cultural resources assessment included a review of existing literature and historical maps, a CHRIS record search, a Sacred Lands File search, and an intensive pedestrian survey of the entire APE. No cultural resources or historic properties have been previously recorded within the APE nor were any identified during the pedestrian survey. As a result, there will be no effects to known historic properties.

The potential for discovery of unknown intact archaeological deposits, resources, or features subsurface was deemed to be moderate due to:

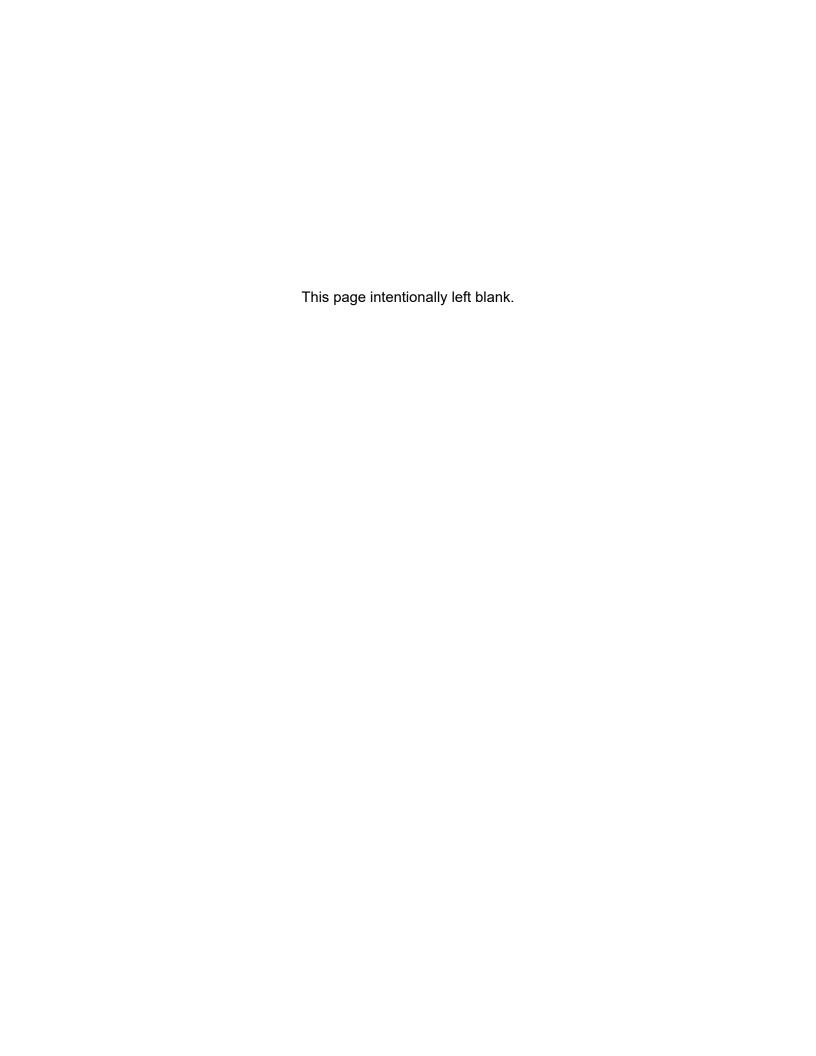
- The lack of prior development within the APE;
- The placement of fill material to an unknown depth over the APE;
- The inability to observe cultural resources on the ground surface due to dense vegetation; and,
- The maximum depth of excavation (five feet below ground surface).

As a result of the above evaluation, it is recommended that full-time cultural resources monitoring by a qualified archaeologist and Tribal Monitor be conducted during all ground-disturbing activities associated with the proposed construction.

Further, in the event of an unanticipated discovery, all work must be suspended within 50 feet of the find until the BIA and the Tribe's Historic Preservation Officer (THPO) are contacted and a qualified archaeologist can evaluate it. In the unlikely event that human remains are encountered all work must cease near the find immediately The BIA may request the help of the Riverside County Coroner. Further, if the human remains are determined to be Native American, or if funerary objects, sacred objects, or objects of cultural patrimony are identified during the Project, the processes established within the Native American Graves Protection and Repatriation Act (NAGPRA), Section 3(d), and its implementing regulations 43 CFR Part 10, S10.4 will be followed.



E-3 THPO Concurrence





Cahuilla Band of Indians Tribal Historic Preservation Office

52701 Highway 371
Anza, California 92539
Phone (951) 763-5549 Fax (951) 763-2808
culturaldirector@cahuilla.net

August 11, 2020

Mr. Felix Kitto Regional Environmental Scientist Bureau of Indian Affairs Pacific Region 2800 Cottage Way Sacramento CA 95825

RE: Riverside San Bernardino County Indian Health Inc.- Cahuilla Indian Health Clinic Replacement Project

Dear Mr. Kitto:

This letter is being prepared under the sovereign authority of the Cahuilla Band of Indians, a federally recognized Indian Tribe. In January 2016 the Cahuilla Band of Indians officially gained Tribal Historic Preservation Office status and with respect to historic properties located on Tribal Lands has assumed certain duties of the State Historic Preservation Officer per Section 101(b)(2) and 101(b)(3) of the National Historic Preservation Act.

The Tribal Historic Preservation Office of the Cahuilla Band of Indians has undertaken a review pursuant to 36 CFR Part 800 of the Riverside San Bernardino County Indian Health Inc.-Cahuilla Indian Health Clinic Replacement Project which is located on the Cahuilla Reservation. with the following results:

A search of Tribal records did not disclose the presence of any cultural resources adjacent to or within the APE.

The THPO has reviewed the Cultural Resources Assessment Report for the Cahuilla Health Center Project prepared by Cogstone including the accompanying letter dated August 4, 2020 from BRG consulting Inc. see Enclosure

After review of the Cultural Resources Assessment Report and after review of the undertaking pursuant to 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act, the Tribal Historic Preservation Office finds and concurs on the APE delineation. The Tribal Historic Preservation Office finds and concurs on the finding of no Effect on Historic Properties pursuant to 36 CFR Part 800.4 (d)(1).

However, the results of the Cultural Resources Assessment Report indicate that the likelihood of encountering intact subsurface deposits is moderate. Further, the lack of prior development within the APE, the inability to observe potential cultural resources due to the spread of fill to an unknown depth over the APE and that the maximum depth of excavation would be five feet below surface, the potential for discovery of unknown intact archaeological deposits, resources, or features by the implementation of this Project is also moderate. In order to avoid impacts to unknown subsurface historic properties, the THPO also concurs that archaeological and Native American monitoring be conducted during all ground-disturbing activities within native sediments.

Also in the event of an unanticipated discovery, all work must be suspended within 50 feet of the find until the BIA and Tribe are contacted and a qualified archaeologist can evaluate it. In the unlikely event that human remains are encountered during project development, all work must cease near the find immediately. The BIA and the Tribe may request the help of the Riverside County Coroner. Further, if the human remains are determined to be Native American, or if funerary objects, sacred objects, or objects of cultural patrimony are identified during Project construction, the processes established within the Native American Graves Protection and Repatriation Act (NAGPRA) and its implementing regulations will be followed.

If you should require further assistance or need additional clarification, please contact Anthony Madrigal Sr. Tribal Historic Preservation Officer.

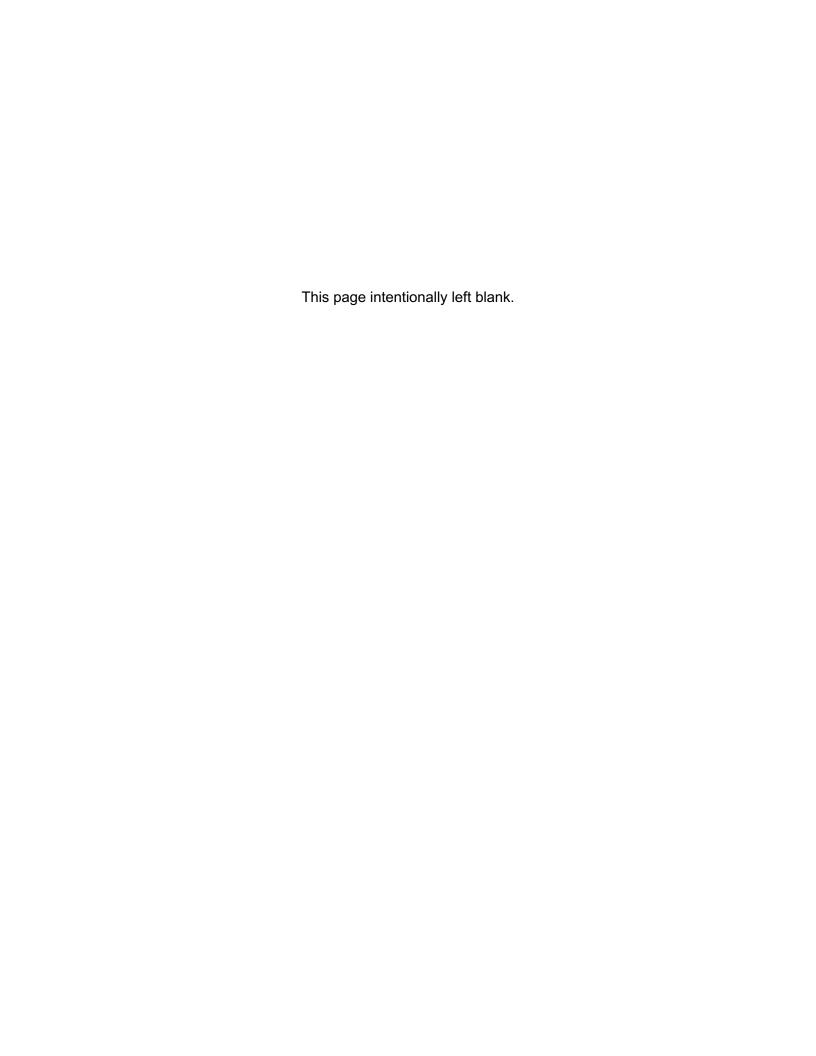
Sincerely,

Anthony Madrigal Sr.

Tribal Historic Preservation Office

cc Christina J. Willis, President BRG Consulting Inc. 304 Ivy Street San Diego CA 92101

E-4 Cahuilla Tribe Correspondence





June 28th, 2019

Anthony Madrigal, Sr Cahuilla Band of Indians Tribal Historic Preservation Officer 52701 U.S. Highway 371 Anza, CA 92539-1760



Re: Request for Access to Tribal Lands for Non-Collection Pedestrian Survey for the Cahuilla Health Clinic Replacement Project

Mr. Madrigal:

Cogstone Resource Management is assisting the San Bernardino-Riverside Indian Health Clinic Inc. as they complete an environmental assessment of the planned site for the new Cahuilla Indian Reservation Indian Health Clinic. As part of our cultural resources assessment Cogstone will complete a non-collection pedestrian survey of the project location. I am writing to you today seeking official permission to access tribal lands for this survey as part of the process of obtaining an Archaeological Resources Protection Act (ARPA) (16 U.S.C. 470aa-mm) permit waiver from the Bureau of Indian Affairs Pacific Regional Office as required under 25 CFR 262 and 43 CFR 7. We are inviting a Native American monitor to be present during the survey.

Project Description and Location Information

Bureau of Indian Affairs (BIA) is considering the approval of a lease agreement for the construction and operation of a replacement health care facility on the Cahuilla Reservation in the unincorporated community of Anza, Riverside County, California. The existing Cahuilla/Santa Rosa Indian Health Clinic, located at 39100 #C Contreras Road, serves American Indian and Alaska Natives (AI/AN) and is operated pursuant to a health care services contract or compact entered into under the Indian Self-Determination and Education Assistance Act, Public Law 93638.

The replacement Cahuilla/Santa Rosa Indian Health Clinic would provide space to support a modern and adequately staffed health care delivery program. The new clinic would ensure availability of the medical services needed to maintain and promote the health status and overall quality of life for the residents of the service area.

The project site consists of approximately three (3) acres of APN 572-190-004 within the Cahuilla Indian Reservation. The property is vacant of development and is located south of Cahuilla Road (State Route 371) and 1.2 miles northeast of Puckit Drive in the Anza area of Riverside County, California. The new clinic would consist of a single-story building, approximately 11,600 square feet (SF) in size on a 3-acre portion of Assessor Parcel Number 572-190-004, located immediately south of Cahuilla Road/State Route (SR) 371) and 0.9 miles north east of Puckit Drive in the Anza community of Riverside County.

1518 West Taft Avenue Orange, CA 92865 Office (714) 974-8300 Branch Offices
San Diego - Riverside - Morro Bay - Northern California

cogstone.com Toll free (888) 333-

3212

The horizontal area of disturbance is a 4-acre portion of Assessor' Parcel Number (APN) 572-190-004 and was determined through reviews of project plans, estimations of maximum potential for ground disturbance, topographic and geographical constraints, etc. The vertical area of disturbance would range between six-inches and 5-feet for construction of the new site access, the building pad, utilities, septic system, and retention basin.

The project site is located within the unincorporated community of Anza, Riverside County, California at approximately 33°31'23.88" North Latitude and -116°46'34.32" West Longitude, within Sec. 33, T7S, R2E, San Bernardino Meridian. Maps of the project location are attached.

Background Research

Cogstone conducted a record search for a one mile radius of the project location at the Eastern Information Center (EIC) of the California Historic Resources Information System (CHRIS) located on the campus of the University of California, Riverside on June 12th, 2019. No known archaeological or historic resources have been recorded within a half mile of the project area and seven resources have been previously recorded between a half mile and a mile from the project location. Cogstone has also submitted a Sacred Land File search request to the Native American Heritage Commission but those results are not yet available. Additional historical and background research is ongoing.

Please respond within 30 days. If you have any questions or concerns with the Project, please do not hesitant to contact me by phone (714-974-8300), email (jgust@cogstone.com), or fax (714-974-8303). You can also contact Dan Hall, Regional Archaeologist, and Bureau of Indian Affairs – Pacific Region by phone at (916) 978-6041 or by email at dan.hall@bia.gov.

Thank you for your attention to this matter.

Sincerely,

John Gust, PhD

cc: Bill Guerth, San-Bernardino Indian Health Clinic, Inc.

Attachments: Project vicinity map

Project location map Project aerial map

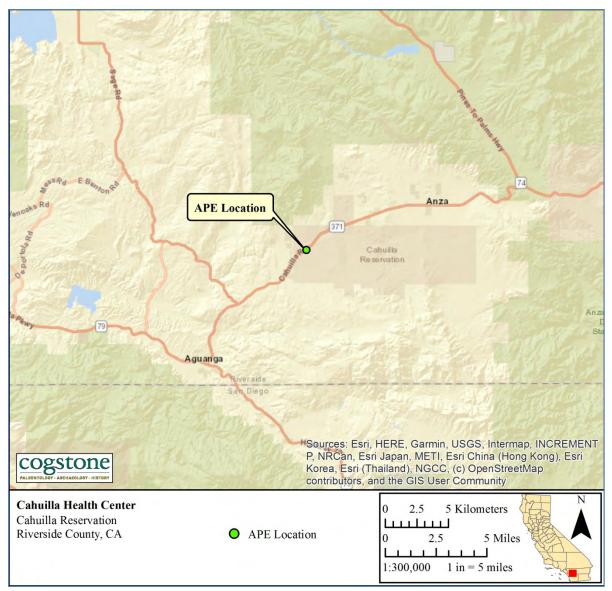


Figure 1. Project vicinity map

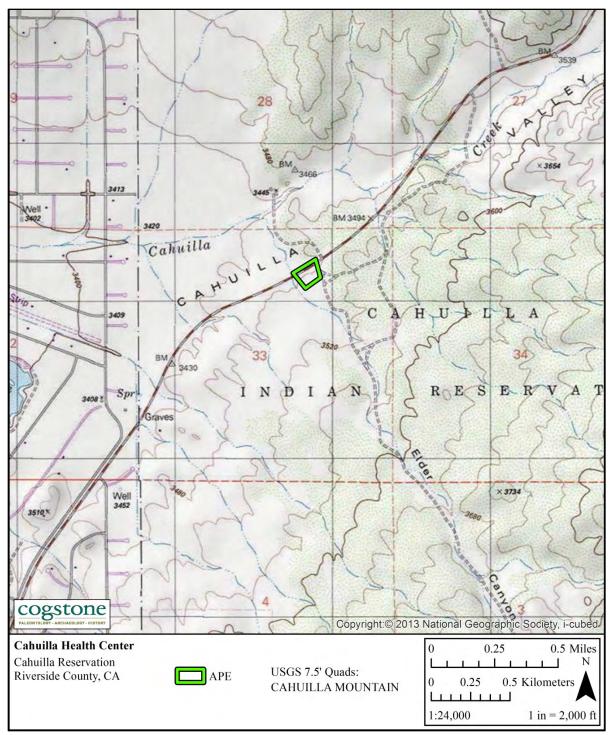


Figure 2. Project location map

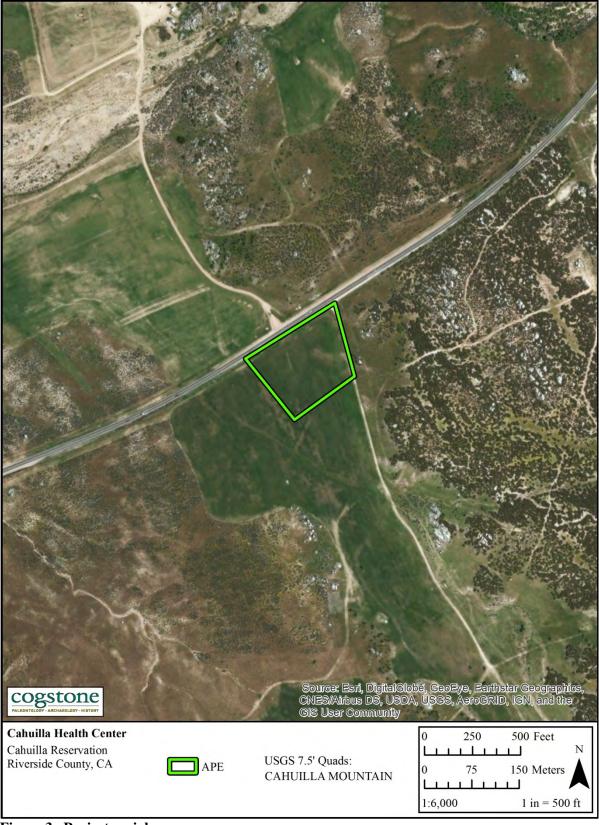
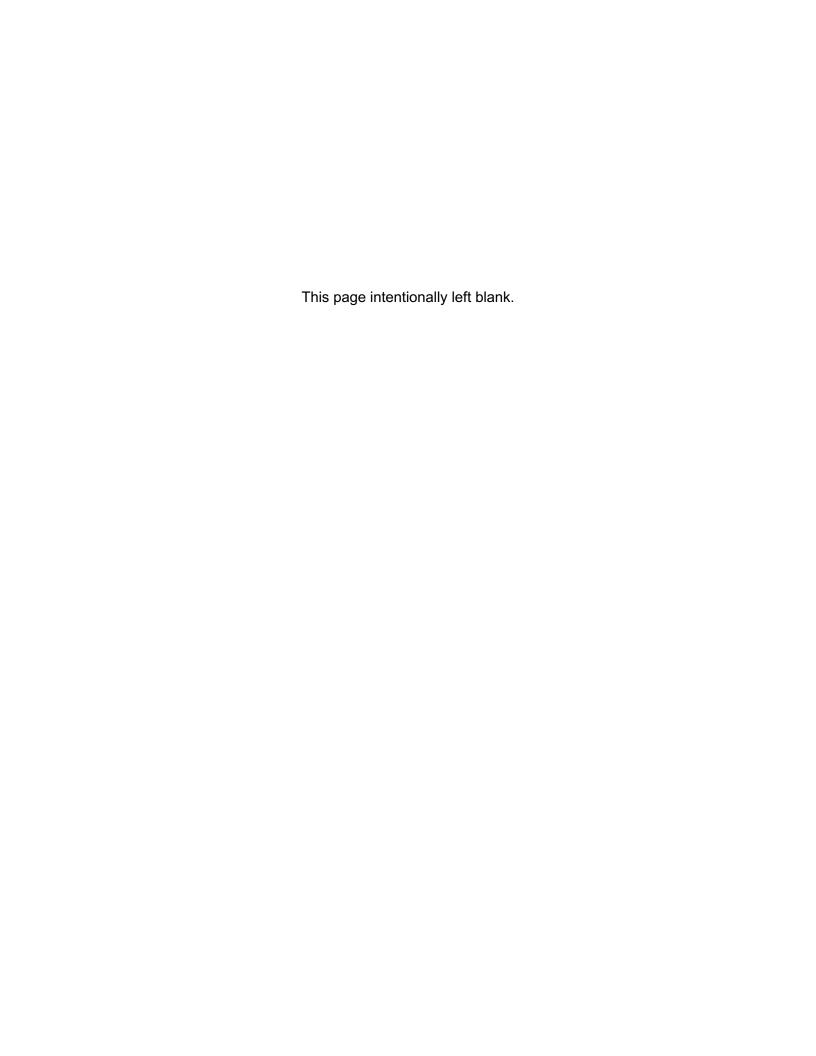
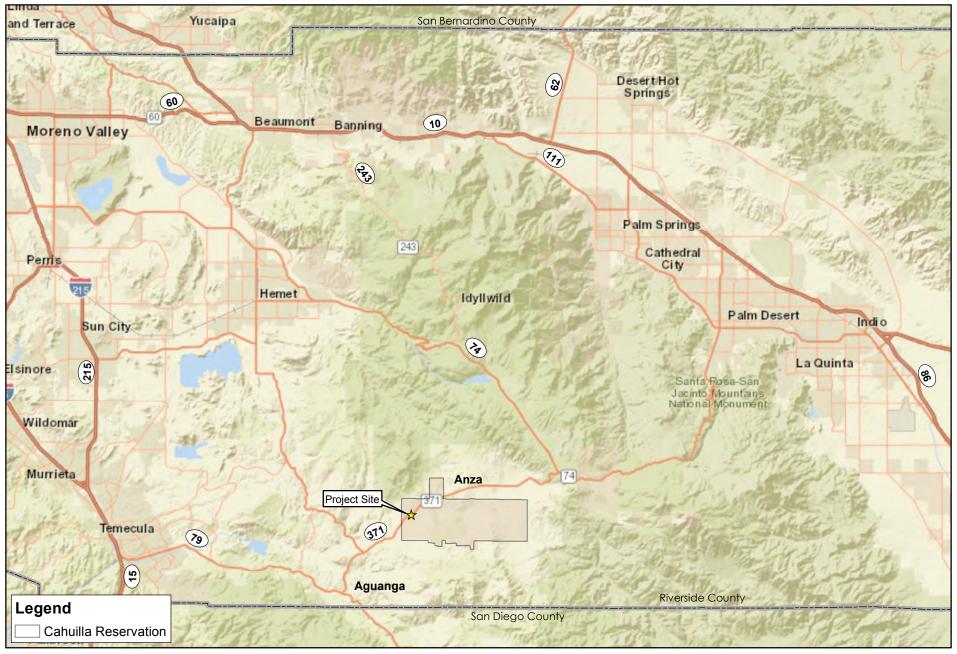


Figure 3. Project aerial map

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F Figures





SOURCE: Basemap-Esri; County of Riverside GIS, 2018



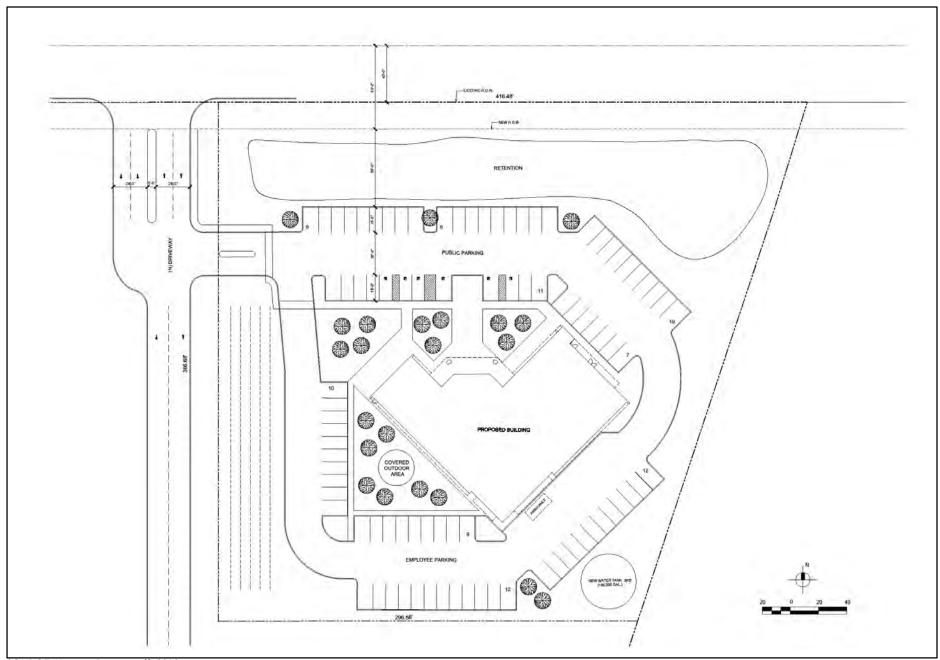
Regional Location
Cahuilla Indian Health Clinic Replacement Project
Figure 1-1



SOURCE: Basemap- Esri; County of Riverside GIS, 2018



Project Location
Cahuilla Indian Health Clinic Replacement Project
Figure 1-2











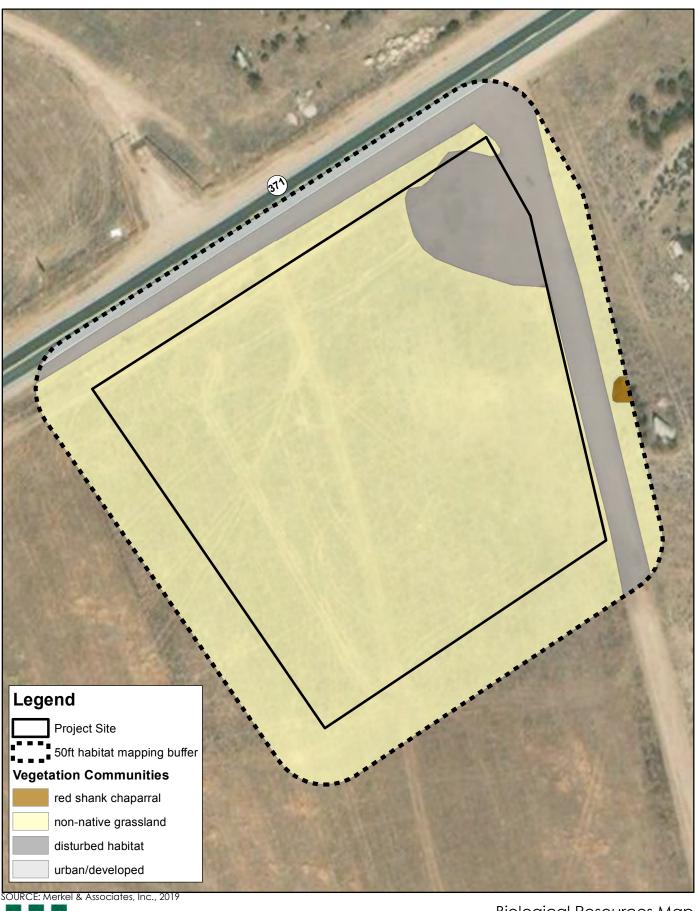




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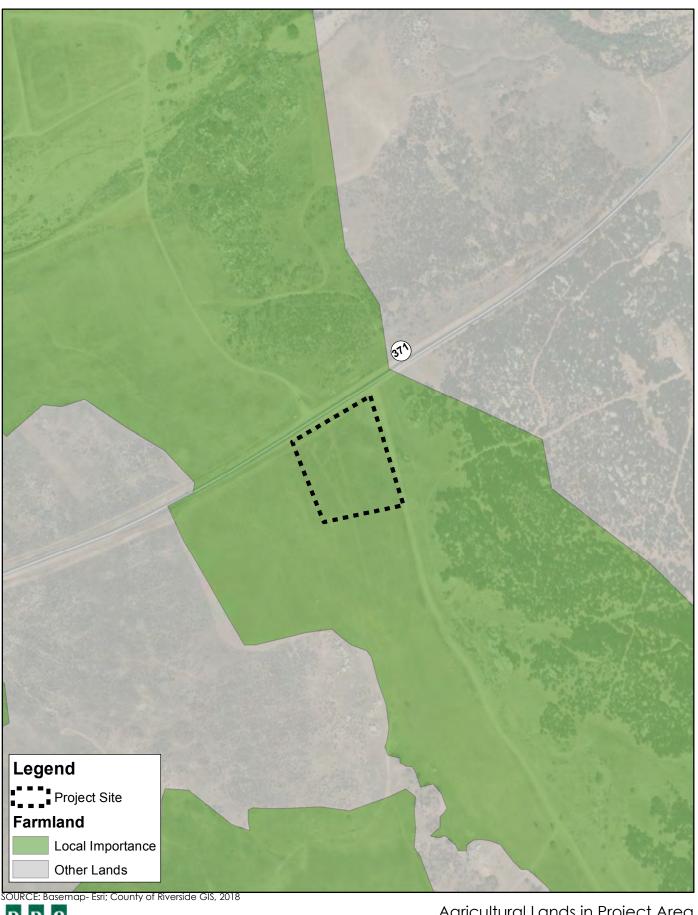
BRG CONSULTING, INC. Miles

FEMA Flood Hazards Cahuilla Indian Health Clinic Figure 3.2-1



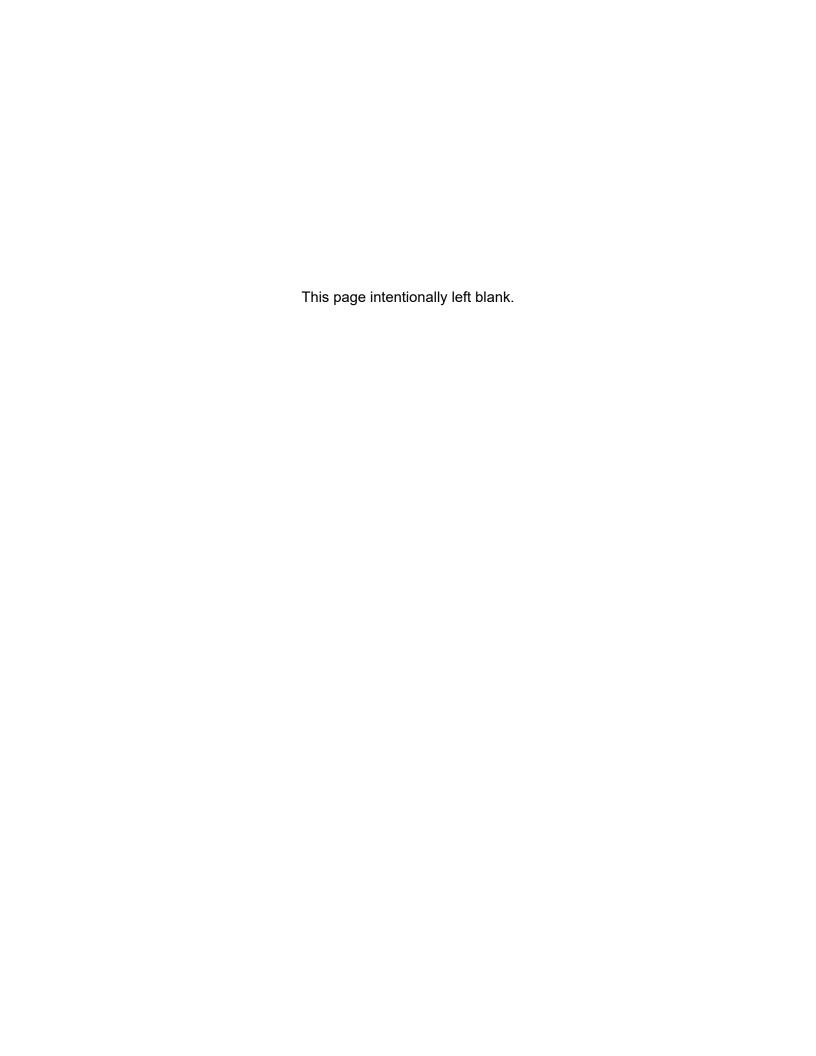


Biological Resources Map Cahuilla Indian Health Clinic Figure 3.4-1

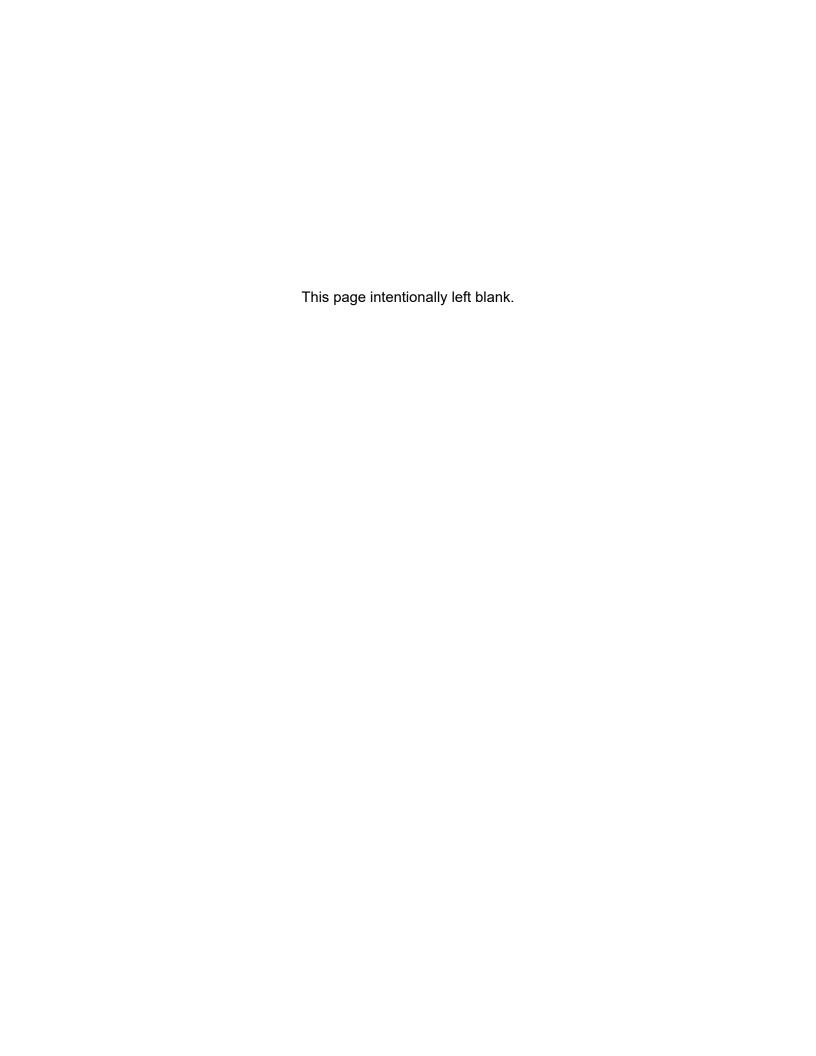




Agricultural Lands in Project Area Cahuilla Indian Health Clinic Figure 3.7-1



G References



- Birdseye, 2019. Air Quality Technical Report for the Cahuilla Indian Health Clinic Replacement Project Cahuilla Indian Reservation, Thermal, California, May 2019 (Appendix C).
- Bureau of Indian Affairs (BIA), 2013. BIA National Environmental Policy Act (NEPA) Guidebook (59 IAM 3-H), Division of Environmental and Cultural Resources, August 2012. Available online at: https://www.bia.gov/sites/bia.gov/files/assets/public/raca/handbook/pdf/ide009157.pdf. Accessed April 17, 2019.
- Cahuilla Band of Indians, 2018. Cahuilla Casino Expansion & Hotel Construction Tribal Environmental Impact Study. Prepared by LACO Associates. Prepared for the Cahuilla Band of Indians, Cahuilla Economic Development Corporation, Cahuilla Casino. February 2018.
- California Air Resources Board (CARB) 2017. Ambient Air Quality Standards. Updated February 2016. Available online at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf. Accessed April 2019.
- California Department of Transportation, 2016. Transportation Concept Report, State Route 371, District 8. Prepared by Caltrans. June 2016.
- California Dept. of Public Health, 2017. Medical Waste Management Act California Health and Safety Code Sections 117600 118360. January 2017. Available online at: https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/EMB/MedicalWaste/MedicalWasteManagementAct.pdf. Accessed December 2018.
- California, 2018a. State of California, Department of Finance, E-4 Population Estimates for Cities, Counties, and the State, 2001-2010, with 2000 & 2010 Census Counts. Sacramento, California, November 2012.
- California, 2018b. State of California Dept. of Finance, E-4 Population Estimates for Cities, Counties, and the State 2011 2018.
- Caltrans, 2017. Design Information Bulletin Number 82-06 *Pedestrian Accessibility Guidelines For Highway Projects*. Prepared by the California Department of Transportation, Division of Design Office of Standards and Procedures. Available at https://dot.ca.gov/-/media/dot-media/programs/design/documents/dib82-06-a11y.pdf. November 16, 2017.
- Caltrans, 2016. Transportation Concept Report, State Route 371, District 8. Prepared by the California Department of Transportation. June 24, 2016.
- Climate-Data.org. 2019. Anza, California Average Temperature Summary. Available at: https://en.climate-data.org/north-america/united-states-of-america/california/anza-124499/#temperature-graph. Accessed June 6, 2019.
- Cogstone, 2019. Cultural Assessment Report for the Cahuilla Health Center Project, Cahuilla Reservation, Unincorporated Riverside County, California, August 2019. (Appendix E-1).
- County of Riverside, 2018. County of Riverside 2018 Demographic Data. Shape Riverside County Webpage. Available online at

Appendix G 1 August 2020

- http://www.shaperivco.org/demographicdata?id=270§ionId=935#sectionPiece_83. Accessed on December 17, 2018.
- County of Riverside, 2018a. Riverside County Code of Ordinances, Chapter 7.35 General Noise Regulations. 2018.
- County of Riverside, 2018b. Riverside County Code of Ordinances, Chapter 7.25 Nuisance Exterior Sound Level Limits. 2018.
- County of Riverside, 2017. Countywide Integrated Waste Management Plan Annual Report, 2017. Prepared by the Riverside County Department of Waste Resources. Available online at: https://www.rcwaste.org/Portals/0/Files/Planning/CIWMP/2017%20Annual%20Report.pdf. Accessed December 2018.
- County of Riverside, 2015a. County of Riverside General Plan Amendment No. 960, Environmental Impact Report No. 521 Public Review Draft, Section 4.14. Mineral Resources, February 2015. Available online at:

 https://planning.rctlma.org/Portals/14/genplan/general_plan_2015/DEIR%20521/DEIR%20No.%20521.pdf. Accessed December 2018.
- County of Riverside, 2015b. County of Riverside General Plan Amendment No. 960, Environmental Impact Report No. 521 Public Review Draft, Section 4.9. Cultural and Paleontological Resources, February 2015. Available online at: https://planning.rctlma.org/Portals/14/genplan/general_plan_2015/DEIR%20521/DEIR%20No.%20521.pdf. Accessed December 2018.
- Department of Water Resources, 2004. Cahuilla Groundwater Basin, California Groundwater Bulletin 118. Available at:
 https://water.ca.gov/LegacyFiles/pubs/groundwater/bulletin_118/basindescriptions/9-6.pdf. Accessed July 2, 2019.
- Indian Health Service (IHS), 2019. California Area Indian Health Service, Health Program Profile *Riverside/San Bernardino County Indian Health Inc.* Available at: https://www.ihs.gov/california/index.cfm/health-programs/southern-california/rsbcihi/. Accessed June 6, 2019.
- Institute of Transportation Engineers, 2017. Trip Generation Manual, 10th Edition. Prepared by the Institute of Transportation Engineers. 2017.
- Merkel & Associates, Inc., 2019. Biological Resources Letter Report for the Cahuilla Indian Health Clinic Replacement Project, Located on Tribal Lands in Riverside County, California. Prepared by Merkel & Associates, August 22, 2019. (Appendix D).
- Natural Resource Conservation Service (NRCS), 2019. Custom Soil Resource Report for Western Riverside Valley Area, California, April 12, 2019.
- NCRS, 2018a. National Soil Survey Handbook, Title 430-VI. Available online at: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054242. Accessed August 2019.

- NRCS, 2018b Soil Data Access (SDA) Hydric Soils List for Riverside County, Coachella Valley Area California. Available at: https://www.nrcs.usda.gov/Internet/FSE DOCUMENTS/nrcseprd1316620.html
- NRCS, 2018c. National Soil Survey Handbook, Title 430-VI. Available online at: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054242. Accessed August 2019.
- Sladden Engineering, 2018. Geotechnical Investigation for Proposed Cahuilla Health Center (APN 572-190-004). Prepared by Sladden Engineering, November 7, 2018 (Appendix A).
- U.S. Census Bureau, 2000. Total Population, Census 2000 Summary File 3. 2000.
- U.S. Census Bureau, 2001. Historic City, County and State Population Estimates, 1990-2000, with 1990 and 2000 Census Counts. April 2001.
- U.S. Census Bureau, 2010. 2006-2010 American Community Survey 5-Year Estimates.

 Available online at:

 https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_5YR_B01003&prodType=table. Accessed June 13, 2019.
- U.S. Census Bureau, 2017. 2013-2017 American Community Survey 5-Year Estimates.

 Available online at:

 https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_5YR_B01003&prodType=table. Accessed June 13, 2019.
- U.S. Census Bureau, 2018. QuickFacts: United States. July 1, 2018.
- U.S. Fish & Wildlife Service (USFWS), 2018. Carlsbad Fish and Wildlife Office (CFWO), GIS Division Species Occurrence Data Download (zip) 6/30/2005 updated June 2018 [Internet]. Available at: http://www.fws.gov/carlsbad/giswebpage/giswebpage.
- U.S. Fish & Wildlife Service (USFWS), 2016. Critical Habitat Portal [Internet]. December 2016. Available at: http://criticalhabitat.fws.gov/.
- U.S. Census Bureau 2017. U.S. Census Bureau, 2013-2017 American Community Survey for Cahuilla Reservation. Available at: https://www.census.gov/tribal/?st=06&aianihh=0435. Accessed May 7, 2019.
- U.S. Census Bureau 2018. U.S. Census Bureau, Quick Facts. Available at: https://www.census.gov/quickfacts/fact/table/US/PST045218. Accessed June 7, 2019.
- U.S. Census Bureau, 2000a. U.S. Census Bureau, Total Population, Census 2000 Summary File 3 (SF3).
- U.S. Census Bureau, 2000b. U.S. Census Bureau, Historic City, County and State Population Estimates, 1990-2000, with 1990 and 2000 Census Counts.
- U.S. Census Bureau, 2010. U.S. Census Bureau, 2013-2017 American Community Survey Results for Cahuilla Reservation.

- U.S. EPA, 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With An Adequate Margin of Safety. Prepared by the US Environmental Protection Agency Office of Noise Abatement and Control. Available online at: https://nepis.epa.gov/Exe/ZyPDF.cgi/2000L3LN.PDF?Dockey=2000L3LN.PDF. Accessed August 2019.
- U.S. EPA, 2017. General Permit for Discharges from Construction Activities, Permit No. CAR10I000.
- USEPA, 2017. National Pollutant Discharge Elimination System General Permit for Discharges from Construction Activities. Available at:

 https://www.epa.gov/sites/production/files/2017-06/documents/2017-cgp-final-permit-508.pdf. Accessed April 17, 2019.
- USEPA, 2019a. Environmental Protection Agency, Region 9: Water Program, Ground Water. Sole Source Aquifer Map. Available online at:https://archive.epa.gov/region9/water/archive/web/html/ssa.html.
- USEPA, 2019b. Approved Air Quality Plans in Region 9, Tribal Implementation Plans. Available online at: https://www.epa.gov/air-quality-implementation-plans-region-9. Accessed August 2019.
- WeatherCurrents.com. 2019. Anza, California Precipitation Summary. Available at: https://weathercurrents.com/anza/ArchivePrecipitation.do. Accessed June 7, 2019.