CITY OF SANTA CLARITA

Haskell Canyon Bike Park Project

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION APPENDICES

Lead Agency:

City of Santa Clarita
23920 Valencia Boulevard,
Suite 120
Santa Clarita, CA 91355
(661) 284-1414
Contact: Amber Rodriguez

Prepared by:

Michael Baker
INTERNATIONAL
3760 Kilroy Airport Way, Suite 270
Long Beach, CA 90806
Office: (562) 200-7165

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APPENDIX A:
AIR QUALITY, ENERGY, AND GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis

Santa Clarita Blue Cloud Bike Park Project

City of Santa Clarita

Lead Agency:

City of Santa Clarita
23920 Valencia Blvd #302
Valencia, CA 91355

Prepared by:

Vista Environmental
1021 Didrickson Way
Laguna Beach, CA 92651
949 510 5355
Greg Tonkovich, AICP

Project No. 23002

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
Air Basin	South Coast Air Basin
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
BSFC	Brake Specific Fuel Consumption
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
Cf_4	tetrafluoromethane
C_2F_6	hexafluoroethane
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
City	City of Santa Clarita
DPM	Diesel particulate matter
EPA	Environmental Protection Agency
ºF	Fahrenheit
FTIP	Federal Transportation Improvement Program
GHG	Greenhouse gas
GWP	Global warming potential
HAP	Hazardous Air Pollutants
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
kWhr	kilowatt-hour
LCFS	Low Carbon Fuel Standard

LST	Localized Significant Thresholds
MATES	Multiple Air Toxics Exposure Study
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
MWh	Megawatt-hour
NAAQS	National Ambient Air Quality Standards
NO_x	Nitrogen oxides
NO_2	Nitrogen dioxide
OPR	Office of Planning and Research
Pfc	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PPM	Parts per million
PPB	Parts per billion
PPT	Parts per trillion
RTIP	Regional Transportation Improvement Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SF_6	Sulfur Hexafluoride
SIP	State Implementation Plan
SO_x	Sulfur oxides
TAC	Toxic air contaminants
UNFCCC	United Nations' Framework Convention on Climate Change
VOC	Volatile organic compounds

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Air Quality, Energy, and Greenhouse Gas (GHG) Emissions Impact Analysis has been completed to determine the air quality, energy, and GHG emissions impacts associated with the proposed Santa Clarita Blue Cloud Bike Park project (proposed project). The following is provided in this report:

- A description of the proposed project;
- A description of the atmospheric setting;
- A description of the criteria pollutants and GHGs;
- A description of the air quality regulatory framework;
- A description of the energy conservation regulatory framework;
- A description of the GHG emissions regulatory framework;
- A description of the air quality, energy, and GHG emissions thresholds including the California Environmental Quality Act (CEQA) significance thresholds;
- An analysis of the conformity of the proposed project with the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP);
- An analysis of the short-term construction related and long-term operational air quality, energy, and GHG emissions impacts; and
- An analysis of the conformity of the proposed project with all applicable energy and GHG emissions reduction plans and policies.

1.2 Site Locations and Study Area

The project site is located in the northern portion of the City of Santa Clarita (City). The project site includes nearly 500 acres of open space, including the Haskell Canyon Open Space and the Blue Cloud Open Space areas. The project site is bounded by open space to the north, open space, canine training and boarding facilities and Blue Cloud Road to the east, open space and single-family homes to the south, and open space and Pettinger Canyon Road to the west. The proposed site plan and study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are homes located within the canine training and boarding facilities to the east that are as near as 800 feet from the proposed areas to be disturbed as part of the project. There are also single-family homes as near as 1,700 feet west and 1,900 feet to the south of the areas to be disturbed as part of the project.

1.3 Proposed Project Description

The proposed project would consist of developing a mountain bike park consisting of approximately 15 miles of trails interspersed throughout the Project Site and two activity/programming areas – the Haskell Bike Park Core and the Blue Cloud Trailhead. Trail types for all skill levels provided within the Blue Cloud Bike Park include approximately 3.7 miles of perimeter and climbing trails (beginner and intermediate), approximately 5.5 miles of downhill bike trails (beginner, intermediate, expert, and pro), and approximately 5 miles of multi-use trails ((beginner, intermediate, and expert). The proposed trail widths would range 4 to 6 feet wide. The Project would also maintain approximately 1.6 miles of existing multi-use trails.

The Haskell Core would include a 56-space parking lot and a parking/emergency turnaround with eight additional parking spaces, two American Disabilities Act (ADA) parking spaces, and four spaces for food trucks; an event plaza with picnic tables and a flexible stage; beginner, intermediate, and advanced pump tracks; a dual slalom course; progressive jumplines; and a progressive skills area. Event/spectator areas would be provided adjacent to the main activity areas. Other amenities within the Haskell Core include shade structures at the start zones of the dual slalom course and the progressive jumplines, vault restrooms, bike repair stations, a rest area with benches and shade structure, and cargo containers for storage areas. Several trailheads leading to perimeter, climbing, and multi-use trails would also be located in the Haskell Core.

The Blue Cloud Trailhead would include a parking/emergency turnaround with 10 parking spaces and one ADA parking space. This portion of the Project Site would feature a field station with gathering and restoration work spaces for volunteers, designated areas for potential future landscape restoration, and a multi-use trailhead. Visitor amenities that would be provided at the Blue Cloud Trailhead include vault restrooms, a bike repair station, and the Saddle Trail Hub (meeting space for riders) with a shade structure.

Specifically, the proposed project is anticipated to disturb approximately 20 acres, would require the import of approximately 4,400 cubic yards of material for road and trail base, would include construction of approximately 3,500 square feet of structures, and would pave approximately 123,000 square feet for parking areas, walkways and event plaza areas.

1.4 Executive Summary

Standard Air Quality, Energy, and GHG Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the SCAQMD and State of California (State).

<u>South Coast Air Quality Management District Rules</u>

The SCAQMD rules that are applicable to the proposed project include, but are not limited to, the following:

- Rule 402 Nuisance – Controls the emissions of odors and other air contaminants;
- Rule 403 Fugitive Dust – Controls the emissions of fugitive dust;
- Rules 1108 and 1108.1 Cutback and Emulsified Asphalt – Controls the VOC content in asphalt;
- Rule 1113 Architectural Coatings – Controls the VOC content in paints and solvents; and
- Rule 1143 Paint Thinners – Controls the VOC content in paint thinners;

<u>State of California Rules</u>

The State of California Code of Regulations (CCR) air quality emission rules that are applicable to the proposed project include, but are not limited to, the following:

- CCR Title 13, Article 4.8, Chapter 9, Section 2449 – In use Off-Road Diesel Vehicles;
- CCR Title 13, Section 2025 – On-Road Diesel Truck Fleets;
- CCR Title 24 Part 6 – California Building Energy Standards; and
- CCR Title 24 Part 11 – California Green Building Standards.

Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines air quality, energy, and GHG emissions checklist questions.

<u>Conflict with or obstruct implementation of the applicable air quality plan?</u>

Less than significant impact.

<u>Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard?</u>

Less than significant impact.

<u>Expose sensitive receptors to substantial pollutant concentrations?</u>

Less than significant impact.

<u>Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?</u>

Less than significant impact.

<u>Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation;</u>

Less than significant impact.

<u>Conflict with or obstruct a state or local plan for renewable energy;</u>

Less than significant impact.

<u>Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?</u>

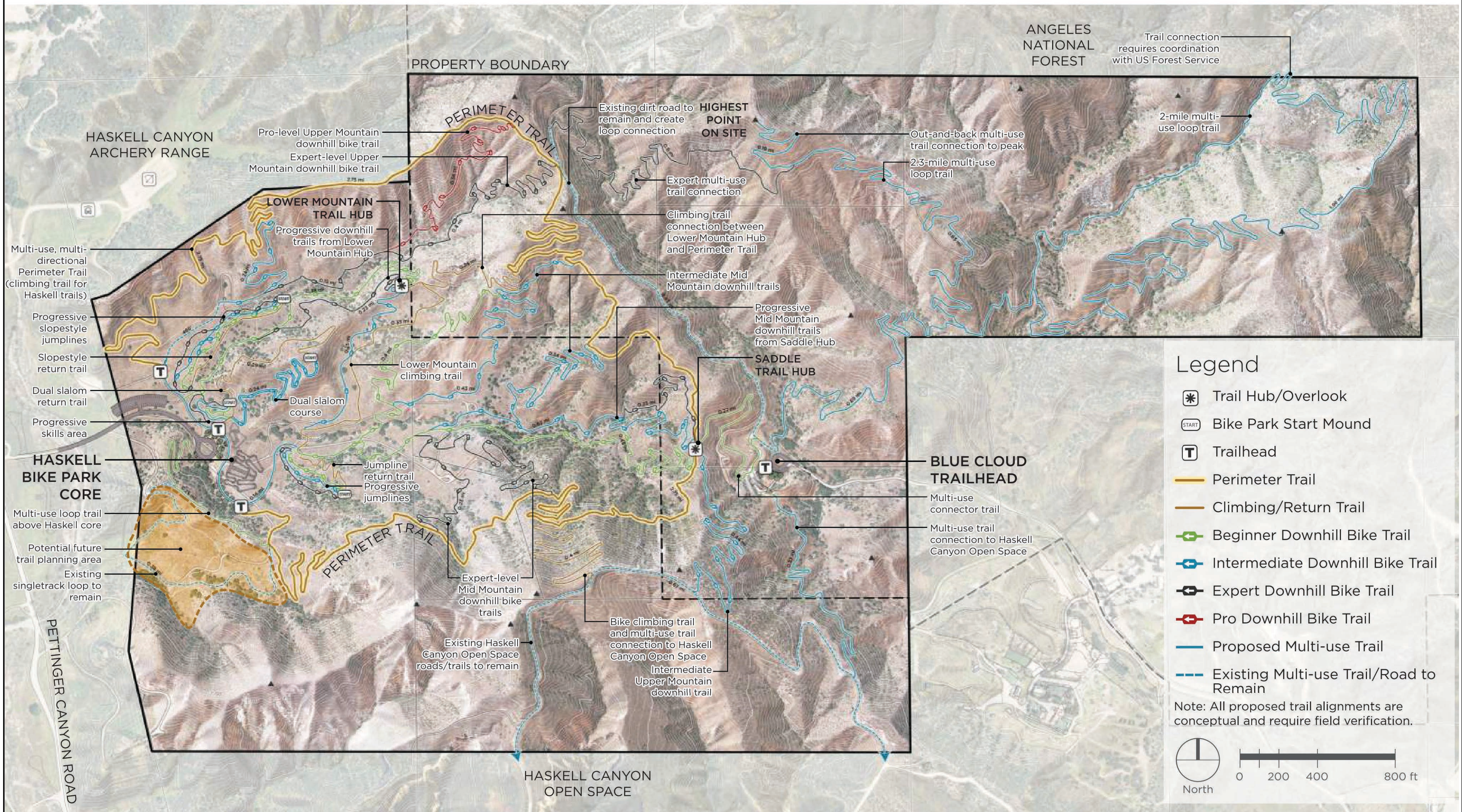
Less than significant impact.

<u>Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?</u>

Less than significant impact.

1.5 Mitigation Measures for the Proposed Project

This analysis found that implementation of the State and SCAQMD air quality, energy, and GHG emissions reductions regulations were adequate to limit criteria pollutants, toxic air contaminants, odors, and energy emissions from the proposed project to less than significant levels. No mitigation measures are required for the proposed project with respect to air quality and energy.



SOURCE: Avid Trails.

VISTA ENVIRONMENTAL

Figure 1
Proposed Site Plan and Study Area

2.0 AIR POLLUTANTS

Air pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

2.1 Criteria Pollutants and Ozone Precursors

The criteria pollutants consist of: ozone, nitrogen oxides (NO_x), CO, sulfur oxides (SO_x), lead, and particulate matter (PM). The ozone precursors consist of NO_x and VOC. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants and ozone precursors.

Nitrogen Oxides

NO_x is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NO_x are colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas. NO_x form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NO_x reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NO_x and the pollutants formed from NO_x can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NO_x is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone is not usually emitted directly into the air, instead it is created by a chemical reaction between NO_x and VOCs in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NO_x and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NO_x and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NO_x and VOC emissions.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes approximately 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Oxides

SO_x gases are formed when fuel containing sulfur, such as coal and oil is burned, as well as from the refining of gasoline. SO_x dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment. Exposure to SO_x gases can cause respiratory symptoms (bronchoconstriction, possible wheezing or shortness of breath) during exercise or physical activity in persons with asthma and cause possible allergic sensitization, airway inflammation, and asthma development.

Lead

Lead is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Particulate Matter

PM is the term for a mixture of solid particles and liquid droplets found in the air. PM is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) that are also known as *Respirable Particulate Matter* are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) that are also known as *Fine Particulate Matter* have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

Volatile Organic Compounds

Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of ozone are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

VOC is not classified as a criteria pollutant, since VOCs by themselves are not a known source of adverse health effects. The primary health effects of VOCs result from the formation of ozone and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for VOCs as a group.

2.2 Other Pollutants of Concern

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, TACs are another group of pollutants of concern. TACs is a term that is defined under the California Clean Air Act and consists of the same substances that are defined as Hazardous Air Pollutants (HAPs) in the Federal Clean Air Act. There are over 700 hundred different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different toxic air contaminants. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

TACs are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to *The California Almanac of Emissions and Air Quality 2013 Edition*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). DPM is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of DPM as a TAC in 1998 led the California Air Resources Board (CARB) to adopt the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles* in October 2000. The plan's goals are a 75-percent reduction in DPM by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of DPM as a TAC was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by CARB and as a HAP by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. The nearest likely locations of naturally occurring asbestos, as identified in the *General Location Guide for Ultramafic Rocks in California*, prepared by the California Division of Mines and Geology, is located as near as 65 miles west of the project site in Santa Barbara County. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

3.0 GREENHOUSE GASES

3.1 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric GHGs, play a critical role in the Earth's radiation amount by trapping infrared radiation from the Earth's surface, which otherwise would have escaped to space. Prominent GHGs contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these GHGs in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion. Methane, a potent GHG, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the GHGs and their global warming potential.

Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s, each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that concentration of CO_2 in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This could result in an average global temperature rise of at least two degrees Celsius or 3.6 degrees Fahrenheit.

Methane

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and CFCs). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of CH_4. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. N_2O is also commonly used as an aerosol spray propellant (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and race cars).

Chlorofluorocarbons

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons

Hydrofluorocarbons (HFCs) are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride

Sulfur Hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States (U.S.); however, global concentrations are likely increasing.

3.2 Global Warming Potential

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO_2. The GHGs listed by the IPCC and the CEQA Guidelines are discussed in this section in order of abundance in the atmosphere. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. To simplify reporting and analysis, GHGs are commonly defined in terms of their GWP. The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2 equivalent (CO_2e). As such, the GWP of CO_2 is equal to 1. The GWP values used in this analysis are based on the 2007 IPCC Fourth Assessment Report, which are used in CARB's 2014 Scoping Plan Update and the CalEEMod Model Version 2022.1 and are detailed in Table A. The IPCC has updated the GWP of some gases in their Fifth Assessment Report, however the new values have not yet been incorporated into the CalEEMod model that has been utilized in this analysis.

Table A – Global Warming Potentials, Atmospheric Lifetimes and Abundances of GHGs

Gas	Atmospheric Lifetime (years)[1]	Global Warming Potential (100 Year Horizon)[2]	Atmospheric Abundance
Carbon Dioxide (CO_2)	50-200	1	379 ppm
Methane (CH_4)	9-15	25	1,774 ppb
Nitrous Oxide (N_2O)	114	298	319 ppb
HFC-23	270	14,800	18 ppt
HFC-134a	14	1,430	35 ppt
HFC-152a	1.4	124	3.9 ppt
PFC: Tetrafluoromethane (CF_4)	50,000	7,390	74 ppt
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200	2.9 ppt
Sulfur Hexafluoride (SF_6)	3,200	22,800	5.6 ppt

Notes:
[1] Defined as the half-life of the gas.
[2] Compared to the same quantity of CO_2 emissions and is based on the Intergovernmental Panel On Climate Change (IPCC) 2007 standard, which is utilized in CalEEMod (Version 2022.1),that is used in this report (CalEEMod user guide: Appendix A).
Definitions: ppm = parts per million; ppb = parts per billion; ppt = parts per trillion

Source: IPCC 2007, EPA 2015

3.3 Greenhouse Gas Emissions Inventory

According to the Carbon Dioxide Information Analysis Center[1], 9,855 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) emissions were created globally in the year 2014. According to the EPA, the breakdown of global GHG emissions by sector consists of: 25 percent from electricity and heat production; 21 percent from industry; 24 percent from agriculture, forestry and other land use activities; 14 percent from transportation; 6 percent from building energy use; and 10 percent from all other sources of energy use[2].

According to *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2021,* prepared by EPA, April 2023, total U.S. GHG emissions in the year 2021 were 6,340.2 $MMTCO_2e$. Total U.S. emissions have decreased by 2.3 percent between 1990 and 2021, which is down from a high of 15.8 percent above 1990 levels in 2007. Emissions increased from 2020 to 2021 by 5.2 percent. There was a decline in 2020 emission due to the impacts of the COVID-19 pandemic on travel and other economic activity. Between 2020 and 2021, the increase in GHG emissions were driven largely by an increase in fossil fuel combustion due to economic activity rebounding after the height of the COVID-19 pandemic.

According to *California Greenhouse Gas Emissions for 2000 to 2021 Trends of Emissions and Other Indicators*, prepared by the CARB, December 14, 2023, the State of California created 381.3 $MMTCO_2e$ in 2021. The 2021 emissions were 12.6 $MMTCO_2e$ higher than 2020 but 23.1 $MMTCO_2e$ lower than 2019 levels. Both the 2019 to 2020 decrease and the 2020 to 2021 increase in emissions are likely due in part to the impacts of the COVID-19 pandemic that were felt globally. The transportation sector showed the largest increase in emissions of 10 $MMTCO_2e$ (7.4 percent) compared to 2020, which is most likely from passenger vehicles whose activity and emissions rebounded after COVID-19 shelter in place orders were lifted.

1 Obtained from: https://cdiac.ess-dive.lbl.gov/trends/emis/tre_glob_2014.html

2 Obtained from: https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data

4.0 AIR QUALITY MANAGEMENT

The air quality at the project site is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

4.1 Federal – United States Environmental Protection Agency

The Clean Air Act, first passed in 1963 with major amendments in 1970, 1977 and 1990, is the overarching legislation covering regulation of air pollution in the U.S. The Clean Air Act has established the mandate for requiring regulation of both mobile and stationary sources of air pollution at the state and federal level. The EPA was created in 1970 in order to consolidate research, monitoring, standard-setting and enforcement authority into a single agency.

The EPA is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. NAAQS pollutants were identified using medical evidence and are shown below in Table B.

Table B – State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O_3)	0.09 ppm / 1-hour 0.07 ppm / 8-hour	0.070 ppm, / 8-hour	a) Pulmonary function decrements and localized lung injury in humans and animals; (b) asthma exacerbation; (c) chronic obstructive pulmonary disease (COPD) exacerbation; (d) respiratory infection; (e) increased school absences, and hospital admissions and emergency department (ED) visits for combined respiratory diseases; (e) increased mortality; (f) possible metabolic effects. Vegetation damage; property damage
Carbon Monoxide (CO)	20.0 ppm / 1-hour 9.0 ppm / 8-hour	35.0 ppm / 1-hour 9.0 ppm / 8-hour	Visibility reduction (a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) possible impairment of central nervous system functions; (d) possible increased risk to fetuses; (f) possible increased risk of pulmonary disease; (g) possible emergency department visits for respiratory diseases overall and visits for asthma.
Nitrogen Dioxide (NO_2)	0.18 ppm / 1-hour 0.030 ppm / annual	100 ppb / 1-hour 0.053 ppm / annual	Short-term (a) asthma exacerbations (“asthma attacks”) Long-term (a) asthma development; (b) higher risk of all-cause, cardiovascular, and respiratory mortality. Both short and long term NO2 exposure is also associated with chronic obstructive pulmonary disease (COPD) risk. Potential impacts on cardiovascular health, mortality and cancer, aggravate chronic respiratory disease. Contribution to atmospheric discoloration

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Sulfur Dioxide (SO_2)	0.25 ppm / 1-hour 0.04 ppm / 24-hour	75 ppb / 1-hour	Respiratory symptoms (bronchoconstriction, possible wheezing or shortness of breath) during exercise or physical activity in persons with asthma. Possible allergic sensitization, airway inflammation, asthma development.
Respirable Particulate Matter (PM_{10})	50 µg/m^3 / 24-hour 20 µg/m^3 / annual	150 µg/m^3 / 24-hour	Short -term (a) increase in mortality rates; (b) increase in respiratory infections; (c) increase in number and severity of asthma attacks; (d) COPD exacerbation; (e) increase in combined respiratory-diseases and number of hospital admissions; (f) increased mortality due to cardiovascular or respiratory diseases; (g) increase in hospital admissions for acute respiratory conditions; (h) increase in school absences; (i) increase in lost work days; (j) decrease in respiratory function in children; (k) increase medication use in children and adults with asthma. Long-term (a) reduced lung function growth in children; (b) changes in lung development; (c) development of asthma in children; (d) increased risk of cardiovascular diseases; (e) increased total mortality from lung cancer; (f) increased risk of premature death. Possible link to metabolic, nervous system, and reproductive and developmental effects for short-term and long-term exposure to PM2.5.
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m^3 / annual	35 µg/m^3 / 24-hour 12 µg/m^3 / annual	
Sulfates	25 µg/m^3 / 24-hour	No Federal Standards	(a) Decrease in lung function; (b) aggravation of asthmatic symptoms; (c) vegetation damage; (d) Degradation of visibility; (e) property damage
Lead	1.5 µg/m^3 / 30-day	0.15 µg/m^3 /3-month rolling	(a) Learning disabilities; (b) impairment of blood formation and nerve function; (c) cardiovascular effects, including coronary heart disease and hypertension Possible male reproductive system effects
Hydrogen Sulfide	0.03 ppm / 1-hour	No Federal Standards	Exposure to lower ambient concentrations above the standard may result in objectionable odor and may be accompanied by symptoms such as headaches, nausea, dizziness, nasal irritation, cough, and shortness of breath

Source: 2022 AQMP, SCAQMD, 2022.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP. The CARB defines attainment as the category given to an area with no violations in the past three years. As indicated below in Table C, the South Coast Air Basin (Air Basin), within which the proposed project is located, has been designated by EPA for the national standards as a non-attainment area for ozone and PM2.5 and partial non-attainment for lead. Currently, the Air Basin is in attainment with the national ambient air quality standards for CO, PM10, SO_2, and NO_2.

Table C – National Air Quality Standards Attainment Status – South Coast Air Basin

Criteria Pollutant	Averaging Time	Designation[a]	Attainment Date[b]
Ozone	1979 1-Hour (0.12 ppm)	Nonattainment (Extreme)	2/6/2023 (revised deadline)
	2015 8-Hour (0.07 ppm)[d]	Nonattainment (Extreme)	8/3/2038
	2008 8-Hour (0.075 ppm)[d]	Nonattainment (Extreme)	7/20/2032
	1997 8-Hour (0.08 ppm)[d]	Nonattainment (Extreme)	6/15/2024
PM2.5[e]	2006 24-Hour (35 µg/m³)	Nonattainment (Serious)	12/31/2019
	2012 Annual (12 µg/m³)	Nonattainment (Serious)	12/31/2021
	1997 Annual (15 µg/m³)	Attainment (final determination pending)	4/5/2015 (attained 2013)
PM10[f]	1987 24-Hour (150 µg/m³)	Attainment (Maintenance)	7/26/2013 (attained)
Lead[g]	2008 3-Months Rolling (0.15 µg/m³)	Nonattainment (Partial) (Attainment determination requested)	12/31/2015
CO	1971 1-Hour (35 ppm)	Attainment (Maintenance)	6/11/2007
	1971 8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007
NO_2[h]	2010 1-Hour (100 ppb)	Unclassifiable/Attainment	N/A (attained)
	1971 Annual (0.053 ppm)	Attainment (Maintenance)	9/22/1998 (attained)
SO_2[i]	2010 1-Hour (75 ppb)	Unclassifiable/Attainment	1/9/2018
	1971 24-Hour (0.14 ppm)	Unclassifiable/Attainment	3/19/1979

Source: SCAQMD, 2022

Notes:

a) U.S. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassifiable/Attainment or Unclassifiable.

b) A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for attainment demonstration.

c) The 1979 1-hour ozone NAAQS (0.12 ppm) was revoked, effective June 15, 2005; however, the Basin has not attained this standard and therefore has some continuing obligations with respect to the revoked standard; original attainment date was 11/15/2010; the revised attainment date is 2/6/2023.

d) The 2008 8-hour ozone NAAQS (0.075 ppm) was revised to 0.070 ppm, effective 12/28/20115 with classifications and implementation goals to be finalized by 10/1/2017; the 1997 8-hour ozone NAAQS (0.08 ppm) was revoked in the 2008 ozone implementation rule, effective 4/6/2015; there are continuing obligations under the revoked 1997 and revised 2008 ozone NAAQS until they are attained.

e) The attainment deadline for the 2006 24-Hour PM2.5 NAAQS was 12/31/15 for the former "moderate" classification; the EPA approved reclassification to "serious", effective 2/12/16 with an attainment deadline of 12/31/2019; the 2012 (proposal year) annual PM2.5 NAAQS was revised on 1/15/2013, effective 3/18/2013, from 15 to 12 µg/m³; new annual designations were final 1/15/2015, effective 4/15/2015; on 7/25/2016 the EPA finalized a determination that the Basin attained the 1997 annual (15.0 µg/m³) and 24-hour PM2.5 (65 µg/m³) NAAQS, effective 8/24/2016.

f) The annual PM10 standard was revoked, effective 12/18/2006; the 24-hour PM10 NAAQS deadline was 12/31/2006; the Basin's Attainment Re-designation Request and PM10 Maintenance Plan was approved by the EPA on 6/26/2103, effective 7/26/2013.

g) Partial Nonattainment designation – Los Angeles County portion of the Basin only for near-source monitors; expect to remain in attainment based on current monitoring data; attainment re-designation request pending.

h) New 1-hour NO_2 NAAQS became effective 8/2/2010, with attainment designations 1/20/2012; annual NO_2 NAAQS retained.

i) The 1971 annual and 24-hour SO_2 NAAQS were revoked, effective 8/23/2010.

Despite substantial improvements in air quality over the past few decades, some air monitoring stations in the Air Basin still exceed the NAAQS and frequently record the highest ozone levels in the U.S. In 2020, monitoring stations in the Air Basin exceeded the most current federal standards on a total of 181 days (49 percent of the year), including: 8-hour ozone (157 days over the 2015 ozone NAAQS), 24-hour PM2.5 (39 days), PM10 (3 days), and NO_2 (1 day). Nine of the top 10 stations in the nation most frequently exceeding the 2015 8-hour ozone NAAQS in 2020 were located within the Air Basin, including stations in San Bernardino, Riverside, and Los Angeles Counties (SCAQMD, 2022).

PM2.5 levels in the Air Basin have improved significantly in recent years. Since 2015, none of the monitoring stations in the Air Basin have recorded violations of the former 1997 annual PM2.5 NAAQS (15.0 μg/m^3). On July 25, 2016 the EPA finalized a determination that the Air Basin attained the 1997 annual (15.0 μg/m^3) and 24-hour PM2.5 (65 μg/m^3) NAAQS, effective August 24, 2016. However, the Air Basin does not meet the 2012 annual PM2.5 NAAQS (12.0 μg/m^3), with six monitoring stations having design values above the standard for the 2018-2020 period (SCAQMD, 2022).

4.2 State – California Air Resources Board

The CARB, which is a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The CAAQS for criteria pollutants in the Air Basin are shown in Table D. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

Table D – California Ambient Air Quality Standards Attainment Status – South Coast Air Basin

Criteria Pollutant	Averaging Time	Level[a]	Designation[b]
Ozone	1-Hour	0.09 ppm	Nonattainment
	8-Hour	0.070 ppm	Nonattainment
PM2.5	Annual	12 μg/m^3	Nonattainment
PM10	24-Hour	50 μg/m^3	Nonattainment
	Annual	20 μg/m^3	Nonattainment
Lead	30-Day Average	1.5 μg/m^3	Attainment
CO	1-Hour	20 ppm	Attainment
	8-Hour	9.0 ppm	Attainment
NO_2	1-Hour	0.18 ppm	Attainment
	Annual	0.030	Attainment[c]
SO_2	1-Hour	0.25 ppm	Attainment
	24-Hour	0.04 ppm	Attainment
Sulfates	24-Hour	25 μg/m^3	Attainment
Hydrogen Sulfide[c]	1-Hour	0.03 ppm	Unclassified

Notes:
a) CA State standards, or CAAQS, for ozone, SO_2, NO_2, PM10 and PM2.5 are values not to be exceeded; lead, sulfates and H_2S standards are values not to be equaled or exceeded; CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
b) CA State designations shown were updated by CARB in 2019, based on the 2016-2018 3-year period; stated designations are based on a 3-year data period after consideration of outliers and exceptional events.
c) The CA-60 near road portion of San Bernardino, Riverside and Los Angeles Counties has recently been redesignated as an attainment area based on data collected between 2018 and 2020.
Source: SCAQMD, 2022

As shown in Table D, the Air Basin has been designated by the CARB as a non-attainment area for ozone, PM10 and PM2.5 and. Currently, the Air Basin is in attainment with the ambient air quality standards for lead, CO, NO_2, SO_2 and sulfates, and is unclassified for Hydrogen Sulfide.

The CCR air quality emission rules that are applicable to all land development projects in the State include, but are not limited to the following:

Assembly Bill 2588

The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release in California. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

CARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the CARB adopted CCR Title 13, Article 4.8, Chapter 9, Section 2449 to reduce DPM and NO_x emissions from in-use off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. Performance requirements of the rule are based on a fleet's average NO_x emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirement making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less). Currently, no commercial operation in California may add any equipment to their fleet that has a Tier 0, Tier 1, or Tier 2 engine. It should be noted that commercial fleets may continue to use their existing Tier 0, 1 and 2 equipment, if they can demonstrate that the average emissions from their entire fleet emissions meet the NO_x emissions targets.

CARB Resolution 08-43 for On-Road Diesel Truck Fleets

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into CCR Title 13, Section 2025. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4 Final) or latter emission standards. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California. All on-road diesel trucks utilized during construction of the proposed project will be required to comply with Resolution 08-43.

4.3 Regional – Southern California

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. The *Final 2022 Air Quality Management Plan* (2022 AQMP) was adopted by CARB on January 26, 2023 and has been submitted to the EPA for final approval, which is anticipated to occur sometime this year. After the 2022 AQMP has been adopted by the EPA, the 2022 AQMP will be incorporated into the SIP. The 2022 AQMP establishes actions and strategies to reduce ozone levels to the EPA 2015 ozone standard of 70 ppb by 2037. The 2022 AQMP promotes extensive use of zero-emission technologies across all stationary and mobile sources coupled with rules and regulations, investment strategies, and incentives.

Although SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the Air Basin. Instead, this is controlled through local jurisdictions in accordance with CEQA. In order to assist local jurisdictions with air quality compliance issues the *1993 CEQA Air Quality Handbook* (SCAQMD CEQA Handbook), prepared by SCAQMD, with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs detailed in the AQMPs. The purpose of the SCAQMD CEQA Handbook is to assist lead agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the Air Basin, and adverse impacts will be minimized.

The SCAQMD rules that are applicable to land development projects in the Air Basin include, but are not limited to, the following:

Rule 402 - Nuisance

Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which causes 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. Compliance with Rule 402 will reduce local air quality and odor impacts to nearby sensitive receptors.

Rule 403- Fugitive Dust

Rule 403 governs emissions of fugitive dust during construction activities and requires that no person shall cause or allow the emissions of fugitive dust such that dust remains visible in the atmosphere beyond the property line or the dust emission exceeds 20 percent opacity, if the dust is from the operation of a motorized vehicle. Compliance with this rule is achieved through application of standard Best Available Control Measures, which include but are not limited to the measures below. Compliance with these rules would reduce local air quality impacts to nearby sensitive receptors.

- Utilize either a pad of washed gravel 50 feet long, 100 feet of paved surface, a wheel shaker, or a wheel washing device to remove material from vehicle tires and undercarriages before leaving project site.
- Do not allow any track out of material to extend more than 25 feet onto a public roadway and remove all track out at the end of each workday.
- Water all exposed areas on active sites at least three times per day and pre-water all areas prior to clearing and soil moving activities.

- Apply nontoxic chemical stabilizers according to manufacturer specifications to all construction areas that will remain inactive for 10 days or longer.
- Pre-water all material to be exported prior to loading, and either cover all loads or maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code Section 23114.
- Replant all disturbed area as soon as practical.
- Suspend all grading activities when wind speeds (including wind gusts) exceed 25 miles per hour.
- Restrict traffic speeds on all unpaved roads to 15 miles per hour or less.

Rules 1108 and 1108.1 – Cutback and Emulsified Asphalt

Rules 1108 and 1108.1 govern the sale, use, and manufacturing of asphalt and limits the VOC content in asphalt. This rule regulates the VOC contents of asphalt used during construction as well as any on-going maintenance during operations. Therefore, all asphalt used during construction and operation of the proposed project must comply with SCAQMD Rules 1108 and 1108.1.

Rule 1113 – Architectural Coatings

Rule 1113 governs the sale, use, and manufacturing of architectural coatings and limits the VOC content in sealers, coatings, paints and solvents. This rule regulates the VOC contents of paints available during construction. Therefore, all paints and solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1113.

Rule 1143 – Paint Thinners

Rule 1143 governs the sale, use, and manufacturing of paint thinners and multi-purpose solvents that are used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations. This rule regulates the VOC content of solvents used during construction. Solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1143.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the *2024-2050 Regional Transportation Plan/Sustainable Communities Strategy* (Connect SoCal 2024), adopted by SCAG on April 4, 2024 which is based on the regional development and growth forecasts provided in the *2023 Federal Transportation Improvement* Program (2023 FTIP), adopted October 2022. However, per SB 375, SCAG and CARB are required to work together until CARB staff conclude that the calculations and quantifications provided would yield accurate estimates of GHG emission reductions. Since CARB staff continue to have significant outstanding concerns about the technical methodology utilized in the Connect SoCal 2024, the current approved RTP/SCS is the *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (Connect SoCal 2020), adopted September 3, 2020, which is based on the 2019 *Federal Transportation Improvement* Program (2019 FTIP), adopted September 2018.

Although the Connect SoCal 2020 and 2019 FTIP are primarily planning documents for future transportation projects, a key component of these plans are to integrate land use planning with transportation planning that promotes higher density infill development in close proximity to existing transit service. These plans form the basis for the land use and transportation components of the 2022 AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the 2022 AQMP. The Connect SoCal 2020, 2019 FTIP, and 2022 AQMP are based on projections originating within the City and County General Plans.

4.4 Local – City of Santa Clarita

Local jurisdictions, such as the City of Santa Clarita, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the AQMPs. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

The City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the City relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

5.0 ENERGY CONSERVATION MANAGEMENT

The regulatory setting related to energy conservation is primarily addressed through State and City regulations, which are discussed below.

5.1 State

Energy conservation management in the State was initiated by the 1974 Warren-Alquist State Energy Resources Conservation and Development Act that created the California Energy Resource Conservation and Development Commission (currently named California Energy Commission [CEC]), which was originally tasked with certifying new electric generating plants based on the need for the plant and the suitability of the site of the plant. In 1976 the Warren-Alquist Act was expanded to include new restrictions on nuclear generating plants, that effectively resulted in a moratorium of any new nuclear generating plants in the State. The following details specific regulations adopted by the State in order to reduce the consumption of energy.

California Code of Regulations Title 20

On November 3, 1976 the CEC adopted the *Regulations for Appliance Efficiency Standards Relating to Refrigerators, Refrigerator-Freezers and Freezers and Air Conditioners,* which were the first energy-efficiency standards for appliances. The appliance efficiency regulations have been updated several times by the CEC and the most current version is the *2016 Appliance Efficiency Regulations*, adopted January 2017, which now includes almost all types of appliances and lamps that use electricity, natural gas as well as plumbing fixtures. The authority for the CEC to control the energy-efficiency of appliances is detailed in CCR Title 20, Division 2, Chapter 4, Article 4, Sections 1601-1609.

California Code of Regulations Title 24, Part 6

The CEC is also responsible for implementing the CCR Title 24, Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* (Title 24 Part 6) that were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. In 2008 the State set an energy-use reduction goal of zero-net-energy use of all new homes by 2020 and the CEC was mandated to meet this goal through revisions to the Title 24, Part 6 regulations.

The Title 24 standards are updated on a three-year schedule and since 2008 the standards have been incrementally moving to the 2020 goal of the zero-net-energy use. The 2022 Title 24 standards are the current standards that went into effect on January 1, 2023.

According to the Title 24 Part 6 Fact Sheet, the CEC estimates that over 30 years the 2022 Title 24 standards will reduce 10 $MMTCO_2e$ of GHG emissions, which is equivalent to taking nearly 2.2 million cars off the road for a year. For single-family homes, the CEC estimates that the 2022 Title 24 changes from using natural gas furnaces to electric heat pumps to heat new homes and would reduce net CO_2 emissions by 16,230 $MTCO_2e$ per year, when compared to the 2019 Title 24 standards, which is equivalent of taking 3,641 gas cars off the road each year. The 2022 Title 24 standards will: (1) Increase onsite renewable energy generation; (2) Increases electric load flexibility to support grid reliability; (3) Reduces emissions from newly constructed buildings; (4) Reduces air pollution for improved public health; and (5) Encourages adoption of environmentally beneficial efficient electric technologies.

California Code of Regulations Title 24, Part 11

CCR Title 24, Part 11: *California Green Building Standards* (CalGreen Code) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The CalGreen Code is also updated every three years and the current version is the 2022 CalGreen Code that went into effect on January 1, 2023.

The CalGreen Code contains requirements for construction site selection; storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

The CalGreen Code provides standards for bicycle parking, carpool/vanpool/electric vehicle spaces, light and glare reduction, grading and paving, energy efficient appliances, renewable energy, graywater systems, water efficient plumbing fixtures, recycling and recycled materials, pollutant controls (including moisture control and indoor air quality), acoustical controls, storm water management, building design, insulation, flooring, and framing, among others. Implementation of the CalGreen Code measures reduces energy consumption and vehicle trips and encourages the use of alternative-fuel vehicles, which reduces pollutant emissions.

Some of the notable changes in the 2022 CalGreen Code over the prior 2019 CalGreen Code for nonresidential development mandatory requirements include the repeal of designated parking spaces for clean air vehicles and an increase in the number of electric vehicle (EV) ready parking spaces. The 2022 CalGreen Code also added new requirements for installed Level 2 or direct-current fast charger EV charging stations for autos, EV charging readiness for loading docks, enhanced thermal insulation, and acoustical ceilings.

Executive Order N-79-20

The California Governor issued Executive Order N-79-20 on September 23, 2020 that requires all new passenger cars and trucks and commercial drayage trucks sold in California to be zero-emissions by the year 2035 and all medium- heavy-duty vehicles (commercial trucks) sold in the State to be zero-emission by 2045 for all operations where feasible. Executive Order N-79-20 also requires all off-road vehicles and equipment to transition to 100 percent zero-emission equipment, where feasible by 2035.

Senate Bill 100

Senate Bill 100 (SB 100) was adopted September 2018 and requires 100 percent of retail sales of electricity to be generated from renewable or zero-carbon emission sources of electricity by December 1, 2045. SB 100 supersedes the renewable energy requirements set by SB 350, SB 1078, SB 107, and SB X1-2. SB 100 codified the interim renewable energy thresholds from the prior Bills of: 33 percent by 2020, 40 percent by December 31, 2024, 45 percent by December 31, 2027, and 50 percent by December 31, 2030.

Executive Order B-48-18 and Assembly Bill 2127

The California Governor issued Executive Order B-48-18 on January 26, 2018 that orders all state entities to work with the private sector to put at least five million zero-emission vehicles on California roads by 2030 and to install 200 hydrogen fueling stations and 250,000 EV chargers by 2025. Currently there are approximately 350,000 electric vehicles operating in California, which represents approximately 1.5

percent of the 24 million vehicles total currently operating in California. Implementation of Executive Order B-48-18 would result in approximately 20 percent of all vehicles in California to be zero emission electric vehicles. Assembly Bill 2127 (AB 2127) was codified into statute on September 13, 2018 and requires that the CEC working with CARB prepare biannual assessments of the statewide EV charging infrastructure needed to support the levels of zero emission vehicle adoption required for the State to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030.

Assembly Bill 1109

California Assembly Bill 1109 (AB 1109) was adopted October 2007, also known as the Lighting Efficiency and Toxics Reduction Act, prohibits the manufacturing of lights after January 1, 2010 that contain levels of hazardous substances prohibited by the European Union pursuant to the Restriction of Hazardous Substances Directive. AB 1109 also requires reductions in energy usage for lighting and is structured to reduce lighting electrical consumption by: (1) At least 50 percent reduction from 2007 levels for indoor residential lighting; and (2) At least 25 percent reduction from 2007 levels for indoor commercial and all outdoor lighting by 2018. AB 1109 would reduce GHG emissions through reducing the amount of electricity required to be generated by fossil fuels in California.

Assembly Bill 1493

California Assembly Bill 1493 (also known as the Pavley Bill, in reference to its author Fran Pavley) was enacted on July 22, 2002 and required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2004, CARB approved the “Pavley I” regulations limiting the amount of GHGs that may be released from new passenger automobiles that are being phased in between model years 2009 through 2016. These regulations will reduce GHG emissions by 30 percent from 2002 levels by 2016. In June 2009, the EPA granted California the authority to implement GHG emission reduction standards for light duty vehicles, in September 2009, amendments to the Pavley I regulations were adopted by CARB and implementation of the “Pavley I” regulations started in 2009.

The second set of regulations “Pavley II” was developed in 2010, and is being phased in between model years 2017 through 2025 with the goal of reducing GHG emissions by 45 percent by the year 2020 as compared to the 2002 fleet. The Pavley II standards were developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the “LEV III” (third stage of the Low Emission Vehicle standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars as well as promote zero-emissions auto technologies such as electricity and hydrogen, and through increasing the infrastructure for fueling hydrogen vehicles. In 2009, the EPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks and sport utility vehicles and these GHG emissions standards are currently being implemented nationwide.

The EPA has performed a midterm evaluation of the longer-term standards for model years 2022-2025, and based on the findings of this midterm evaluation, the EPA proposed The Safer Affordable Fuel Efficient (SAFE) Vehicles Proposed Rule for Model Years 2021-2026 that amends the corporate average fuel economy (CAFE) and GHG emissions standards for light vehicles for model years 2021 through 2026. The SAFE Vehicles Rule was published on April 30, 2020 and made effective on June 29, 2020.

5.2 Local - City of Santa Clarita

The applicable energy plan for the proposed project is the Conservation and Open Space Element of the Santa Clarita General Plan, June, 2011. The applicable energy-related goals and policies that are from Conservation and Open Space Element of the General Plan are shown below.

Goal CO 8: Development designed to improve energy efficiency, reduce energy and natural resource consumption, and reduce emissions of greenhouse gases.

Objective CO 8.1: Encourage the following green building and sustainable development practices on private development projects, to the extent reasonable and feasible.

Policies

Policy CO 8.3.1: Evaluate site plans proposed for new development based on energy efficiency pursuant to LEED (Leadership in Energy and Environmental Design) standards for New Construction and Neighborhood Development, including the following: a) location efficiency; b) environmental preservation; c) compact, complete, and connected neighborhoods; and d) resource efficiency, including use of recycled materials and water.

Policy CO 8.3.2: Promote construction of energy efficient buildings through requirements for LEED certification or through comparable alternative requirements as adopted by local ordinance.

Policy CO 8.3.6: Require new development to use passive solar heating and cooling techniques in building design and construction, which may include but are not be limited to building orientation, clerestory windows, skylights, placement and type of windows, overhangs to shade doors and windows, and use of light colored roofs, shade trees, and paving materials.

Policy CO 8.3.7: Encourage the use of trees and landscaping to reduce heating and cooling energy loads, through shading of buildings and parking lots.

Policy CO 8.3.8: Encourage energy-conserving heating and cooling systems and appliances, and energy-efficiency in windows and insulation, in all new construction.

Policy CO 8.3.9: Limit excessive lighting levels, and encourage a reduction of lighting when businesses are closed to a level required for security.

6.0 GLOBAL CLIMATE CHANGE MANAGEMENT

The regulatory setting related to global climate change is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to reduce GHG emissions through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for global climate change regulations are discussed below.

6.1 International

In 1988, the United Nations established the IPCC to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the U.S. joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. The parties of the UNFCCC adopted the Kyoto Protocol, which set binding GHG reduction targets for 37 industrialized countries, the objective of reducing their collective GHG emissions by five percent below 1990 levels by 2012. The Kyoto Protocol has been ratified by 182 countries, but has not been ratified by the U.S. It should be noted that Japan and Canada opted out of the Kyoto Protocol and the remaining developed countries that ratified the Kyoto Protocol have not met their Kyoto targets. The Kyoto Protocol expired in 2012 and the amendment for the second commitment period from 2013 to 2020 has not yet entered into legal force. The parties to the Kyoto Protocol negotiated the Paris Agreement in December 2015, agreeing to set a goal of limiting global warming to less than 2 degrees Celsius compared with pre-industrial levels. The Paris Agreement has been adopted by 195 nations with 147 ratifying it, including the U.S. by President Obama, who ratified it by Executive Order on September 3, 2016. On June 1, 2017, President Trump announced that the U.S. is withdrawing from the Paris Agreement and on January 21, 2021 President Biden signed an executive order rejoining the Paris Agreement.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

6.2 Federal – United States Environmental Protection Agency

The EPA is responsible for implementing federal policy to address global climate change. The federal government administers a wide array of public-private partnerships to reduce U.S. GHG intensity. These programs focus on energy efficiency, renewable energy, methane, and other non-CO_2 gases, agricultural practices and implementation of technologies to achieve GHG reductions. EPA implements several voluntary programs that substantially contribute to the reduction of GHG emissions.

In *Massachusetts v. Environmental Protection Agency* (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate GHGs, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO_2 and other GHGs as pollutants under the federal Clean Air Act.

In response to the Consolidations Appropriations Act, 2008 (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the

U.S. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, 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 the EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under Section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions did not impose any requirements on industry or other entities, however, since 2009 the EPA has been providing GHG emission standards for vehicles and other stationary sources of GHG emissions that are regulated by the EPA. On September 13, 2013 the EPA Administrator signed 40 CFR Part 60, that limits emissions from new sources to 1,100 pounds of CO_2 per mega-watt hour (MWh) for fossil fuel-fired utility boilers and 1,000 pounds of CO_2 per MWh for large natural gas-fired combustion units.

On August 3, 2015, the EPA announced the Clean Power Plan, emissions guidelines for U.S. to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired power plants (Federal Register Vol. 80, No. 205, October 23 2015). On October 11, 2017, the EPA issued a formal proposal to repeal the Clean Power Plan and on June 19, 2019 the EPA replaced the Clean Power Plan with the Affordable Clean Energy rule that is anticipated to lower power sector GHG emissions by 11 million tons by the year 2030.

On April 30, 2020, the EPA and the National Highway Safety Administration published the Final Rule for the *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks* (SAFE Vehicles Rule). Part One of the Rule revokes California's authority to set its own GHG emissions standards and zero-emission vehicle mandates in California, which results in one emission standard to be used nationally for all passenger cars and light trucks that is set by the EPA.

6.3 State

The CARB has the primary responsible for implementing state policy to address global climate change, however there are state regulations related to global climate change that affect a variety of state agencies. CARB, which is a part of CalEPA, is responsible for the coordination and administration of both the federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets CAAQS, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2008, CARB approved a Climate Change Scoping Plan that proposes a "comprehensive set of actions designed to reduce overall carbon GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (CARB 2008). The Climate Change Scoping Plan has a range of GHG reduction actions which include direct regulations; alternative compliance mechanisms; monetary and non-monetary incentives; voluntary actions; market-based mechanisms such as a cap-and-trade system. In 2014, CARB approved the First Update to the Climate Change Scoping Plan (CARB, 2014) that identifies additional strategies moving beyond the 2020 targets to the year 2050. On December 14, 2017 CARB adopted the California's 2017

Climate Change Scoping Plan, November 2017 (CARB, 2017) that provides specific statewide policies and measures to achieve the 2030 GHG reduction target of 40 percent below 1990 levels by 2030 and the aspirational 2050 GHG reduction target of 80 percent below 1990 levels by 2050. In addition, the State has passed the following laws directing CARB to develop actions to reduce GHG emissions, which are listed below in chronological order, with the most current first.

Executive Order B-55-18 and Assembly Bill 1279

The California Governor issued Executive Order B-55-18 in September 2018 that establishes a new statewide goal to achieve carbon neutrality as soon as possible, but no later than 2045. This executive order directs the CARB to work with relevant state agencies to develop a framework for implementation and accounting that tracks progress toward this goal as well as ensuring future scoping plans identify and recommend measures to achieve this carbon neutrality goal. Assembly Bill 1279 was passed by the legislature in September 2022 that codifies the carbon neutrality targets provided in Executive Order B-55-18. The *2022 Scoping Plan for Achieving Carbon Neutrality,* adopted by CARB on December 16, 2022, was prepared in order to meet the carbon neutrality goal targets developed in Executive Order B-55-18 and codified in Assembly Bill 1279.

Executive Order N-79-20

Executive Order N-79-20 establish targets for when all new vehicles and equipment are zero-emission and is described in more detail above in Section 5.1 under Energy Conservation Management.

California Code of Regulations Title 24, Part 6

The Title 24 Part 6 standards have been developed by the CEC primarily for energy conservation and is described in more detail above in Section 5.1 under Energy Conservation Management. It should be noted that implementation of the Title 24 Part 6 building standards would also reduce GHG emissions since energy use for residential and commercial buildings creates 9.7 percent of the GHG emissions in the State.

California Code of Regulations Title 24, Part 11

The CalGreen building standards have been developed by the CEC primarily for energy conservation and is described in more detail above in Section 5.1 under Energy Conservation Management. It should be noted that implementation of the CalGreen Building standards would also reduce GHG emissions, since as detailed above under Title 24, Part 6, energy usage from buildings creates 9.7 percent of GHG emissions in the State.

Senate Bill 100

SB 100 requires that by December 1, 2045 that 100 percent of retail sales of electricity to be generated from renewable or zero-carbon emission sources of electricity and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order B-48-18 and Assembly Bill 2127

Executive Order B-48-18 and AB 2127 provides measures to put at least five million zero-emission vehicles on California roads by 2030 and to install 200 hydrogen fueling stations and 250,000 electric vehicle chargers by 2025 and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order B-30-15, Senate Bill 32 and Assembly Bill 197

The California Governor issued Executive Order B-30-15 on April 29, 2015 that aims to reduce California's GHG emissions 40 percent below 1990 levels by 2030. This executive order aligns California's GHG reduction targets with those of other international governments, such as the European Union that set the same target for 2030 in October, 2014. This target will make it possible to reach the ultimate goal of reducing GHG emissions 80 percent under 1990 levels by 2050 that is based on scientifically established levels needed in the U.S.A to limit global warming below 2 degrees Celsius – the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels. Assembly Bill 197 (AB 197) (September 8, 2016) and Senate Bill 32 (SB 32) (September 8, 2016) codified into statute the GHG emissions reduction targets of at least 40 percent below 1990 levels by 2030 as detailed in Executive Order B-30-15. AB 197 also requires additional GHG emissions reporting that is broken down to sub-county levels and requires CARB to consider the social costs of emissions impacting disadvantaged communities.

Executive Order B-29-15

The California Governor issued Executive Order B-29-15 on April 1, 2015 and directed the State Water Resources Control Board to impose restrictions to achieve a statewide 25 percent reduction in urban water usage and directed the Department of Water Resources to replace 50 million square feet of lawn with drought tolerant landscaping through an update to the State's Model Water Efficient Landscape Ordinance. The ordinance also requires installation of more efficient irrigation systems, promotion of greywater usage and onsite stormwater capture, and limits the turf planted in new residential landscapes to 25 percent of the total area and restricts turf from being planted in median strips or in parkways unless the parkway is next to a parking strip and a flat surface is required to enter and exit vehicles. Executive Order B-29-15 would reduce GHG emissions associated with the energy used to transport and filter water.

Assembly Bill 341 and Senate Bills 939 and 1374

Senate Bill 939 (SB 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) was adopted in 2011 and builds upon the waste reduction measures of SB 939 and 1374, and sets a new target of a 75 percent reduction in solid waste generated by the year 2020.

Senate Bill 375

Senate Bill 375 (SB 375) was adopted September 2008 in order to support the State's climate action goals to reduce GHG emissions through coordinated regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires CARB to set regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established targets for 2020 and 2035 for each MPO within the State. It was up to each MPO to adopt a sustainable communities strategy (SCS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP) to meet CARB's 2020 and 2035 GHG emission reduction targets. These reduction targets are required to be updated every eight years and the most current targets are detailed at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets, which provides GHG emissions reduction targets for SCAG of 8 percent by 2020 and 19 percent by 2035.

The Connect SoCal 2020 (SCAG, 2020) provides a 2035 GHG emission reduction target of 19 percent reduction over the 2005 per capita emissions levels. The Connect SoCal 2020 include new initiatives of land use, transportation and technology to meet the 2035 new 19 percent GHG emission reduction target for 2035. CARB is also charged with reviewing SCAG's RTP/SCS for consistency with its assigned targets.

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

Assembly Bill 1109

AB 1109 requires reductions in energy usage for lighting and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This executive order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

In 2009 CARB approved the proposed regulation to implement the LCFS. The standard was challenged in the courts, but has been in effect since 2011 and was re-approved by the CARB in 2015. The LCFS is anticipated to reduce GHG emissions by about 16 million metric tons per year by 2020. The LCFS is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet annually. Reformulated gasoline mixed with corn-derived ethanol and low-sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel. Compressed natural gas and liquefied natural gas also may be low-carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles, are also considered as low-carbon fuels.

Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent 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 addresses GHG emissions. The CEQA Guidelines Amendments changed 14 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 GHG 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 GHG 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 GHG 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."
- OPR's 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 must specifically consider a project's energy use and energy efficiency potential.

Assembly Bill 32

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and utilize best management practices that are technologically feasible and cost effective.

In 2007 CARB released the calculated Year 1990 GHG emissions of 431 MMTCO_2e. The 2020 target of 431 MMTCO_2e requires the reduction of 78 MMTCO_2e, or approximately 16 percent from the State's projected 2020 business as usual emissions of 509 MMTCO_2e (CARB, 2014). Under AB 32, CARB was required to adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of CO_2 in a calendar year to submit verification of GHG emissions by December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources, all of which became enforceable on or before January 1, 2010.

CARB's Scoping Plan that was adopted in 2009, proposes a variety of measures including: strengthening energy efficiency and building standards; targeted fees on water and energy use; a market-based cap-and-trade system; achieving a 33 percent renewable energy mix; and a fee regulation to fund the program. The 2014 update to the Scoping Plan identifies strategies moving beyond the 2020 targets to the year 2050.

The Cap and Trade Program established under the Scoping Plan sets a statewide limit on sources responsible for 85 percent of California's GHG emissions, and has established a market for long-term investment in energy efficiency and cleaner fuels since 2012.

Assembly Bill 1493

AB 1493 or the Pavley Bill sets tailpipe GHG emissions limits for passenger vehicles in California as well as fuel economy standards and is described in more detail above in Section 5.1 under Energy Conservation Management.

6.4 Regional – Southern California

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Air Basin. To that end, as a regional agency, the SCAQMD works directly with SCAG, county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. The SCAQMD is also responsible for GHG emissions for projects where it is the lead agency. However, for other projects in the Air Basin where it is not the lead agency, it is limited to providing resources to other lead agencies in order to assist them in determining GHG emission thresholds and GHG reduction measures. In order to assist local agencies with direction on GHG emissions, the SCAQMD organized a working group, which is described below.

<u>SCAQMD Working Group</u>

Since neither CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that includes the following tiers:

- Tier 1: Applicable CEQA Exemptions (e.g., SB 97, categorical and statutory exemptions).
- Tier 2: Consistency with a GHG Reduction Plan (an adopted plan by a local agency).
- Tier 3: Quantitative Screening Values. The following quantitative thresholds were proposed:
    - 3,000 $MTCO_2e$ per year for all land use types; or
    - 3,500 $MTCO_2e$ per year for residential;
    - 1,400 $MTCO_2e$ per year for commercial;
    - 3,000 $MTCO_2e$ per year for mixed-use; and
    - 10,000 $MTCO_2e$ per year for industrial.
- Tier 4: Performance Standards. The following options were proposed as performance standards:

- Option 1: Percent Emission Reduction Target (Provide an undefined percent reduction in GHG emissions over business-as-usual emissions).
- Option 2: Early Implementation of Applicable AB32 Scoping Plan Measures (Require a set of AB32 Scoping Plan measures to be implemented).
- Option 3: SCAQMD Efficiency Targets. The following targets were proposed:
  - Year 2020 Targets
    - 4.8 $MTCO_2e$ per year per service population for project level threshold (land use employment only)
    - 6.6 $MTCO_2e$ per year per service population for plan level threshold
  - Year 2035 Targets
    - 3.0 $MTCO_2e$ per year per service population for project level threshold.
    - 4.1 $MTCO_2e$ per year per service population for plan level threshold

- Tier 5: Mitigation Offsets (either alone or in combination with above tiers to achieve target threshold).

Southern California Association of Governments

As detailed above in Section 4.3, the current applicable RTP/SCS for the project area region is the Connect SoCal 2020 and 2019 FTIP, which have been prepared to meet the GHG emissions reduction targets set by SB 375 for the SCAG region of 19 percent reduction over the 2005 per capita emissions levels. The Connect SoCal 2020 includes new land use, transportation, and technology strategies to meet the new 19 percent GHG emission reduction target for 2035.

Although the Connect SoCal 2020 and 2019 FTIP are primarily planning documents for future transportation projects, a key component of these plans are to integrate land use planning with transportation planning that promotes higher density infill development in close proximity to existing transit service. These plans form the basis for the land use and transportation components of the 2022 AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the 2022 AQMP. The Connect SoCal 2020, 2019 FTIP, and 2022 AQMP are based on projections originating within the City and County General Plans.

5.5 Local – City of Santa Clarita

Local jurisdictions, such as the City of Santa Clarita have the authority and responsibility to reduce GHG emissions through their police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of GHG emissions resulting from its land use decisions. In accordance with CEQA requirements and the CEQA review process, the City assesses the global climate change potential of new development projects, requires mitigation of potentially significant global climate change impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

City of Santa Clarita General Plan

The Conservation and Open Space Element of the City of Santa Clarita General Plan has identified the following goals, objectives and policies aimed at GHG reduction in private development projects in the City (City of Santa Clarita 2011).

Goal CO 8: Development designed to improve energy efficiency, reduce energy and natural resource consumption, and reduce emissions of greenhouse gases.

Objective CO 8.1: Comply with the requirements of State law, including AB 32, SB 375 and implementing regulations, to reach targeted reductions of greenhouse gas (GHG) emissions.

Policy CO 8.1.1: Create and adopt a Climate Action Plan within 18 months of the OVOV adoption date of the City's General Plan Update that meets State requirements and includes the following components:

a. Plans and programs to reduce GHG emissions to State-mandated targets, including enforceable reduction measures;

i. The CAP may establish goals beyond 2020, which are consistent with the applicable laws and regulations referenced in this paragraph and based on current science;

ii. The CAP shall include specific and general tools and strategies to reduce the City's current and projected 2020 inventory and to meet the CAPs target for GHG reductions by 2020;

iii. The CAP shall consider, among other GHG reduction strategies, the feasibility of development fees; incentive and rebate programs; and, voluntary and mandatory reduction strategies in areas of energy efficiency, renewable energy, water conservation and efficiency, solid waste, land use and transportation.

b. Mechanisms to ensure regular review of progress towards the emission reduction targets established by the Climate Action Plan;

c. Procedures for reporting on progress to officials and the public;

d. Procedures for revising the plan as needed to meet GHG emissions reduction targets; and,

e. Allocation of funding and staffing for Plan implementation;

Policy CO 8.1.2: Participate in the preparation of a regional Sustainable Communities Strategy (SCS) Plan to meet regional targets for greenhouse gas emission reductions, as required by SB 375.

Policy CO 8.1.3: Revise codes and ordinances as needed to address energy conservation, including but not limited to the following:

a. Strengthen building codes for new construction and renovation to achieve a higher level of energy efficiency, with a goal of exceeding energy efficiency beyond that required by Title 24;

b. Adopt a Green Building Program to encourage green building practices and materials, along with appropriate ordinances and incentives;

c. Require orientation of buildings to maximize passive solar heating during cool seasons, avoid solar heat gain during hot periods, enhance natural ventilation, promote effective use of daylight, and optimize opportunities for on-site solar generation;

d. Encourage mitigation of the "heat island" effect through use of cool roofs, light-colored paving, and shading to reduce energy consumption for air conditioning.

Policy CO 8.1.4: Provide information and education to the public about energy conservation and local strategies to address climate change.

Policy CO 8.1.5: Coordinate various activities within the community and appropriate agencies related to GHG emissions reduction activities.

Objective CO 8.3: Encourage the following green building and sustainable development practices on private development projects, to the extent reasonable and feasible.

Policy CO 8.3.1: Evaluate site plans proposed for new development based on energy efficiency pursuant to LEED (Leadership in Energy and Environmental Design) standards for New Construction and Neighborhood Development, including the following: a) location efficiency; b) environmental preservation; c) compact, complete, and connected neighborhoods; and d) resource efficiency, including use of recycled materials and water.

Policy CO 8.3.2: Promote construction of energy efficient buildings through requirements for LEED certification or through comparable alternative requirements as adopted by local ordinance.

Policy CO 8.3.3: Promote energy efficiency and water conservation upgrades to existing non-residential buildings at the time of major remodel or additions.

Policy CO 8.3.4: Encourage new residential development to include on-site solar photovoltaic systems, or pre-wiring, in at least 50% of the residential units, in concert with other significant energy conservation efforts.

Policy CO 8.3.5: Encourage on-site solar generation of electricity in new retail and office commercial buildings and associated parking lots, carports, and garages, in concert with other significant energy conservation efforts.

Policy CO 8.3.6: Require new development to use passive solar heating and cooling techniques in building design and construction, which may include but are not be limited to building orientation, clerestory windows, skylights, placement and type of windows, overhangs to shade doors and windows, and use of light colored roofs, shade trees, and paving materials.

Policy CO 8.3.7: Encourage the use of trees and landscaping to reduce heating and cooling energy loads, through shading of buildings and parking lots.

Policy CO 8.3.8: Encourage energy-conserving heating and cooling systems and appliances, and energy-efficiency in windows and insulation, in all new construction.

Policy CO 8.3.9: Limit excessive lighting levels, and encourage a reduction of lighting when businesses are closed to a level required for security.

Policy CO 8.3.10: Provide incentives and technical assistance for installation of energy-efficient improvements in existing and new buildings.

Policy CO 8.3.11: Consider allowing carbon off-sets for large development projects, if appropriate, which may include funding off-site projects or purchase of credits for other forms of mitigation, provided that any such mitigation shall be measurable and enforceable.

Policy CO 8.3.12: Reduce extensive heat gain from paved surfaces through development standards wherever feasible.

7.0 ATMOSPHERIC SETTING

7.1 South Coast Air Basin

The project site is located within western Los Angeles County, which is part of the South Coast Air Basin that includes the non-desert portions of Riverside, San Bernardino, and Los Angeles Counties and all of Orange County. The Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter.

7.2 Local Climate

The climate of the western central portion of Los Angeles County, technically called an interior valley subclimate of the Southern California's Mediterranean-type climate, is characterized by hot dry summers, mild moist winters with infrequent rainfall, moderate afternoon breezes, and generally fair weather. Occasional periods of strong Santa Ana winds and winter storms interrupt the otherwise mild weather pattern. The clouds and fog that form along the area's coastline rarely extend as far inland as central Los Angeles County. When morning clouds and fog form, they typically burn off quickly after sunrise. The most important weather pattern from an air quality perspective is associated with the warm season airflow across the populated areas of the Air Basin. This airflow brings polluted air into central Los Angeles County late in the afternoon. This transport pattern creates unhealthful air quality that may extend to the project site particularly during the summer months.

Winds are an important parameter in characterizing the air quality environment of a project site because they both determine the regional pattern of air pollution transport and control the rate of dispersion near a source. Daytime winds in central Los Angeles County are usually light breezes from off the coast as air moves regionally onshore from the cool Pacific Ocean to the warm Mojave Desert interior of Southern California. These winds allow for good local mixing, but as discussed above, these coastal winds carry significant amounts of industrial and automobile air pollutants from the densely urbanized western portion of the Air Basin into the interior valleys which become trapped by the mountains that border the eastern edge of the Air Basin.

In the summer, strong temperature inversions may occur that limit the vertical depth through which air pollution can be dispersed. Air pollutants concentrate because they cannot rise through the inversion layer and disperse. These inversions are more common and persistent during the summer months. Over time, sunlight produces photochemical reactions within this inversion layer that creates ozone, a particularly harmful air pollutant. Occasionally, strong thermal convections occur which allows the air pollutants to rise high enough to pass over the mountains and ultimately dilute the smog cloud.

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for Newhall Station, which is the nearest weather station to the project site with historical data are shown below in Table E. Table E shows that August is typically the warmest month and January is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table E – Monthly Climate Data for Newhall Station

Month	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Average Total Precipitation (inches)
January	61.6	40.3	5.67
February	65.2	42.7	5.20
March	69.5	43.8	3.94
April	76.5	47.9	0.27
May	79.2	51.0	0.21
June	88.1	56.1	0.11
July	92.2	59.7	0.02
August	82.2	59.3	0.00
September	89.4	57.0	0.06
October	79.4	51.0	0.46
November	69.7	44.6	0.39
December	62.0	40.0	1.85
Annual	**77.1**	**49.5**	**18.19**

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6165

7.3 Monitored Local Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the Air Basin. Improvements in cleaner technology and strict regulations have reduced ozone levels since its peak in the mid-twentieth century. However, ozone levels have remained unacceptably high over the past decade despite significant reductions. This trend is due to the changes in climate and other weather conditions such as the increase in hot, stagnant days that can lead to the formation of ozone that we have experienced in recent years. (SCAQMD, 2022).

SCAQMD has divided the Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in Air Monitoring Area 13, Santa Clarita Valley, which covers the Santa Clarita Valley. The nearest air monitoring station to the project site is Santa Clarita Monitoring Station (Santa Clarita Station), which is located approximately 7.4 miles south of the project site at 22224 Placerita Canyon Road, Santa Clarita. However, it should be noted that due to the air monitoring station's distance from the project site, recorded air pollution levels at the Santa Clarita Station reflect with varying degrees of accuracy, local air quality conditions at the project site. The monitoring data is presented in Table F and shows the most recent three years of monitoring data from CARB.

Table F – Local Area Air Quality Monitoring Summary

Pollutant (Standard)	Year[1] 2020	2021	2022
Ozone:			
Maximum 1-Hour Concentration (ppm)	0.148	0.125	0.129
Days > CAAQS (0.09 ppm)	**44**	**30**	**28**
Maximum 8-Hour Concentration (ppm)	0.122	0.103	0.114
Days > NAAQS (0.070 ppm)	**74**	**61**	**66**
Days > CAAQs (0.070 ppm)	**75**	**63**	**68**
Nitrogen Dioxide:			
Maximum 1-Hour Concentration (ppb)	46.3	56.9	51.5
Days > NAAQS (100 ppb)	0	0	0
Days > CAAQS (180 ppb)	0	0	0
Inhalable Particulates (PM10) :			
Maximum 24-Hour National Measurement (ug/m^3)	67.8	47.1	36.9
Days > NAAQS (150 ug/m^3)	0	0	0
Days > CAAQS (50 ug/m^3)	**1**	0	0
Annual Arithmetic Mean (AAM) (ug/m^3)	21.5	20.3	19.0
Annual > NAAQS (50 ug/m^3)	No	No	No
Annual > CAAQS (20 ug/m^3)	**Yes**	**Yes**	No
Ultra-Fine Particulates (PM2.5):			
Maximum 24-Hour National Measurement (ug/m^3)	43.3	30.1	27.2
Days > NAAQS (35 ug/m^3)	**4**	**0**	**0**
Annual Arithmetic Mean (AAM) (ug/m^3)	9.0	ND	9.2
Annual > NAAQS and CAAQS (12 ug/m^3)	No	ND	No

Notes: Exceedances are listed in **bold.** CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb = parts per billion; ND = no data available.

[1] Data obtained from Santa Clarita Station.

Source: http://www.arb.ca.gov/adam/

Ozone

During the last three years, the state 1-hour concentration standard for ozone has been exceeded between 28 and 44 days each year at the Santa Clarita Station. The state 8-hour ozone standard has been exceeded between 63 and 75 days each year over the last three years at the Santa Clarita Station. The federal 8-hour ozone standard has been exceeded between 61 and 74 days each year over the last three years at the Santa Clarita Station. Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of Southern California contribute to the ozone levels experienced at this monitoring station, with the more significant areas being those directly upwind.

Nitrogen Dioxide

The Santa Clarita Station did not record an exceedance of either the federal or state 1-hour NO_2 standards for the last three years.

Particulate Matter

The state 24-hour concentration standard for PM10 has been exceeded for only one day in 2020 over the past three years at the Santa Clarita Station. Over the past three years the federal 24-hour standard for PM10 has not been exceeded at the Santa Clarita Station. The annual PM10 concentration at the Santa Clarita Station has exceeded the state standard for two of the last three years and has not exceeded the federal standard for the past three years.

The federal 24-hour concentration standard for PM2.5 has been exceeded between 0 and 4 days each year over the past three years at the Santa Clarita Station. The annual PM2.5 concentrations at the Santa Clarita Station has not exceeded either the federal or state standard for the last three years. There does not appear to be a noticeable trend for PM10 or PM2.5 in either maximum particulate concentrations or days of exceedances in the area. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

7.4 Toxic Air Contaminant Levels

In order to determine the Air Basin-wide risks associated with major airborne carcinogens, the SCAQMD conducted the Multiple Air Toxics Exposure Study (MATES) studies. According to the MATES V study (SCAQMD, 2021), the west side of the project site has an estimated cancer risk of 213 per million persons chance of cancer and the east side of the project site has an estimated cancer risk of 208 per million persons chance of cancer from TAC concentrations. In comparison, the average cancer risk for the Air Basin is 455 per million persons. The MATES V study monitored air toxins between May 1, 2018 to April 30, 2019, found that cancer risk from air toxics has declined significantly in the Air Basin with a 40 percent decrease in cancer risk since the monitoring for the MATES IV study that occurred between July 1, 2012 and June 30, 2013 and an 84 percent decrease in cancer risk since the monitoring for the MATES II study that occurred between April 1, 1998 and March 31, 1999.

The MATES V study also analyzed impacts specific to the communities experiencing environmental injustices (EJ communities) that were evaluated using the Senate Bill 535 definition of disadvantaged communities, which found that between MATES IV and MATES V, the cancer risk from air toxics decreased by 57 percent in EJ communities overall, compared to a 53 percent reduction in non-EJ communities.

In order to provide a perspective of risk, it is often estimated that the incidence in cancer over a lifetime for the U.S. population ranges between 1 in 3 to 4 and 1 in 3, or a risk of about 300,000 per million persons. The MATES-III study referenced a Harvard Report on Cancer Prevention, which estimated that of cancers associated with known risk factors, about 30 percent were related to tobacco, about 30 percent were related to diet and obesity, and about 2 percent were associated with environmental pollution related exposures that includes hazardous air pollutants.

8.0 MODELING PARAMETERS AND ASSUMPTIONS

8.1 CalEEMod Model Input Parameters

The criteria air pollution and GHG emissions impacts created by the proposed project have been analyzed through use of the California Emissions Estimator Model (CalEEMod) Version 2022.1.1.21. CalEEMod is a computer model published by the California Air Pollution Control Officers Association (CAPCOA) for estimating air pollutant and GHG emissions. The CalEEMod program uses the EMFAC2021 computer program to calculate the emission rates specific for the South Coast Air Basin portion of Los Angeles County for employee, vendor and haul truck vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy equipment operations. EMFAC2021 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour.

The project characteristics in the CalEEMod model were set to a project location of the South Coast Air Basin portion of Los Angeles County, utility companies of Southern California Edison and Southern California Gas (with 2025 forecast factors) and a project opening year of 2025.

Land Use Parameters

The proposed project is anticipated to disturb approximately 20 acres, would require the import of approximately 4,400 cubic yards of material for road and trail base, would include construction of approximately 3,500 square feet of structures, and would pave approximately 123,000 square feet for parking areas, walkways, trails, and event plaza areas. The proposed project's land use parameters that were entered into the CalEEMod model are shown in Table G.

Table G – CalEEMod Land Use Parameters

Proposed Land Use	Land Use Subtype in CalEEMod	Land Use Size[1]	Lot Acreage[2]	Building[3] (sq ft)	Landscaped Area[4] (sq ft)
Bike Park	City Park	17 AC	17.18	3,500	149,640
Paved Areas (parking, walkways, trails, event plaza)	Other Asphalt Surfaces	2.82 AC	2.82	--	24,600

Notes:
[1] AC = Acre.
[2] Lot acreage calculated based on the total area disturbed of 20 acres.
[3] Building square feet represent area where architectural coatings will be applied
[4] Landscaped area based on a total of 4 acres of irrigated landscaped area, divided proportionally for each land use.

Construction Parameters

Construction of the proposed project is anticipated to start around October 2024 and be completed by December 2025. The Building Construction phase was reduced from the default timing of 370 working days to 239 working days to match the construction schedule provided by the applicant. All other phases were based on the CalEEMod default timing. The construction-related GHG emissions were based on a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The phases of construction activities that have been analyzed are detailed below and include: 1) Site Preparation, 2) Grading, 3) Building construction, 4) Paving, and 5) Application of architectural coatings.

CalEEMod provides the selection of reduction measures to account for project conditions that would result in less emissions than a project without these conditions, however it should be noted that these reduction measures may represent regulatory requirements. This includes the required adherence to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions and was modeled in CalEEMod by selection of the reduction measures of watering all exposed areas three times per day during grading and watering unpaved roads twice daily. In addition, this analysis has utilized the default off-road construction equipment lists from CalEEMod, which provides an overestimation of the off-road equipment emissions created from the project.

Site Preparation

The site preparation phase would consist of removing any vegetation, tree stumps, and stones onsite prior to grading. The site preparation was modeled as starting in October 2024 and occurring over 10 workdays. The site preparation activities would generate an average of 17.5 worker trips per day. In order to account for water truck emissions, three onsite truck trips per day with a one-mile length was added to the site preparation phase. The onsite equipment would consist of three rubber-tired dozers, and four of either tractors, loaders, or backhoes.

Grading

The grading phase was modeled as starting after completion of the site preparation phase and was modeled as occurring over 35 workdays. During the grading phase it is anticipated that 4,400 cubic yards of material will be imported to the project site. The import of material would generate an average of 15.7 haul truck trips per day over the duration of the grading phase. The grading activities would generate an average of 20 automobile trips per day for the workers. In order to account for water truck emissions, three onsite truck trips per day with a one-mile length was added to the grading phase. The onsite equipment would consist of two excavators, one grader, one rubber-tired dozer, two scrapers, and two of either tractors, loaders, or backhoes.

Building Construction

The building construction would occur after the completion of the grading phase and was modeled as occurring over 239 workdays (11 months). The building construction phase would generate an average of 10 worker trips and 2 vendor trips per day. In order to account for water truck emissions, three onsite truck trips per day with a one-mile length was added to the building construction phase. The onsite equipment would consist of the simultaneous operation of one crane, three forklifts, one generator, one welder, and three of either tractors, loaders, or backhoes.

Paving

The paving phase would consist of paving parking areas, walkways, trails, and event plaza area. The paving phase was modeled as occurring after completion of the building construction phase and occurring over 20 workdays. The paving phase would generate 15 worker trips per day. The onsite equipment would consist of the simultaneous operation of two pavers, two paving equipment, and two rollers.

Architectural Coating

The application of architectural coatings was modeled as occurring after completion of the paving phase and occurring over 20 workdays. The architectural coating phase was modeled based on covering 5,250 square feet of non-residential interior area, 1,750 square feet of non-residential exterior area, and 7,380 square feet of paved area. The architectural coating phase would generate an average of 2 worker trips per day. The onsite equipment would consist of one air compressor, which is based on the CalEEMod default equipment mix.

Operational Emissions Modeling

The operations-related criteria air pollutant emissions and GHG emissions created by the proposed project have been analyzed through use of the CalEEMod model. The proposed project was analyzed in the CalEEMod model based on the land use parameters provided above and the parameters entered for each operational source is described below.

Mobile Sources

Mobile sources include emissions from the additional vehicle trips generated by the proposed project. According to the project applicant, operation of the project would generate up to 40 vehicle trips per weekday and up to 200 vehicle trips per weekend day (a vehicle trip is either to or from project site, so one vehicle visit to the project site would generate two trips), which the trip rate in CalEEMod was set to. No other changes were made to the CalEEMod default mobile source parameters.

Area Sources

Area sources include emissions from consumer products, landscape equipment, and architectural coatings. The area source emissions were based on the on-going use of the proposed project in the CalEEMod model. No changes were made to the default area source parameters in the CalEEMod model.

Energy Usage

Energy usage includes emissions from electricity and natural gas used onsite. Since there will be no utility connections to the proposed project, the operational electricity and natural gas usage was set to zero in the CalEEMod Model.

Solid Waste

Waste includes the GHG emissions associated with the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. The analysis was based on the default CalEEMod waste generation rate of 1.48 tons of solid waste per year from the proposed project. No changes were made to the default solid waste parameters or mitigation measures in the CalEEMod model.

Water and Wastewater

No water connections will be provided to the proposed project, however water will be trucked in and stored in tanks for trail and parking lot maintenance, dust suppression, and potentially for limited watering of trees. The CalEEMod model calculates the GHG emissions associated with the energy used to transport and filter the water. The analysis was based on one water truck delivery per week of 3,000 gallons, or 156,000 gallons per year of water use. No changes were made to the default water and wastewater parameters in the CalEEMod model.

Off-Road Equipment and Generators

According to the project applicant, operation of the project would include monthly use of a mini-excavator or a dozer for trail maintenance. In addition, a small generator may be used for music events or food trucks. In order to account for these equipment, a skid steer loader and a generator were added to the CalEEMod model run, based on the skid steer loader operating 8 hours per day and 12 days per year and the generator operating 8 hours per day and 26 days per year. In order to account for water truck deliveries, one off-highway truck operating one hour per day for 52 days per year (one delivery per week) was also added to the CalEEMod model run.

8.2 Energy Use Calculations

The proposed project is anticipated to consume energy during both construction and operation of the proposed project and the parameters utilized to calculate energy use from construction and operation of the proposed project are detailed separately below.

Construction-Related Energy Use

Construction of the proposed project is anticipated to use energy in the forms of petroleum fuel for both off-road equipment as well as from the transport of workers and materials to and from the project site and the calculations for each source are described below.

Off-Road Construction Equipment

The off-road construction equipment fuel usage was calculated through use of the CalEEMod model's default off-road equipment assumptions detailed above in Section 8.1. For each piece of off-road equipment, the fuel usage was calculated through use of the *2017 Off-road Diesel Emission Factors* spreadsheet, prepared by CARB (https://ww3.arb.ca.gov/msei/ordiesel.htm). The Spreadsheet provides the following formula to calculate fuel usage from off-road equipment:

Fuel Used = Load Factor x Horsepower x Total Operational Hours x BSFC / Unit Conversion

Where:

Load Factor – Obtained from CalEEMod default values

Horsepower – Obtained from CalEEMod default values

Total Operational Hours – Calculated by multiplying CalEEMod default daily hours by CalEEMod default number of working days for each phase of construction

BSFC – Brake Specific Fuel Consumption (pounds per horsepower-hour) – If less than 100 Horsepower = 0.408, if greater than 100 Horsepower = 0.367

Unit Conversion – Converts pounds to gallons = 7.109

Table H shows the off-road construction equipment fuel calculations based on the above formula. Table H shows that the off-road equipment utilized during construction of the proposed project would consume 41,236 gallons of diesel fuel.

Table H – Off-Road Equipment and Fuel Consumption from Construction of the Proposed Project

Equipment Type	Equipment Quantity	Horse-power	Load Factor	Operating Hours per Day	Total Operational Hours[1]	Fuel Used (gallons)
Site Preparation						
Rubber Tired Dozers	3	367	0.40	8	240	1,819
Tractors/Loaders/Backhoes	4	84	0.37	8	320	571
Grading						
Excavators	2	36	0.38	8	560	440
Grader	1	148	0.41	8	280	877
Rubber Tired Dozer	1	367	0.40	8	280	2,122
Scrapers	2	423	0.48	8	560	5,870
Tractors/Loaders/Backhoes	2	84	0.37	8	560	999
Building Construction						
Crane	1	367	0.29	7	1,673	9,192
Forklifts	3	82	0.20	8	5,736	5,399
Generator Set	1	14	0.74	8	1,912	1,137
Tractors/Loaders/Backhoes	3	84	0.37	7	5,019	8,953
Welder	1	46	0.45	8	1,912	2,271
Paving						
Pavers	2	81	0.42	8	320	625
Paving Equipment	2	89	0.36	8	320	588
Rollers	2	36	0.38	8	320	251
Architectural Coating						
Air Compressor	1	37	0.48	6	120	122
Total Off-Road Equipment Diesel Fuel Used during Construction (gallons)						**41,236**

Notes:
[1] Based on: 10 days for Site Preparation, 35 days for Grading; 239 days for Building Construction; 20 days for Paving; and 20 days for Architectural Coating.
Source: CalEEMod Version 2022.1 (see Appendix A); CARB, 2017.

<u>On-Road Construction-Related Vehicle Trips</u>

The on-road construction-related vehicle trips fuel usage was calculated through use of the construction vehicle trip assumptions from the CalEEMod model run as detailed above in Section 8.1. The calculated total construction miles was then divided by the fleet average for the South Coast Air Basin portion of Los Angeles County miles per gallon rates for the year 2024 calculated through use of the EMFAC2021 model and the EMFAC2021 model printouts are shown in Appendix B. The worker trips were based on the combined fleet average miles per gallon rates for gasoline powered automobiles, SUVs and pickup trucks and the vendor and haul truck trips were based on the combined T6 and T7 diesel trucks fleet average miles per gallon rate. Table I shows the on-road construction vehicle trips modeled in CalEEMod and the fuel usage calculations.

Table I – On-Road Vehicle Trips and Fuel Consumption from Construction of the Proposed Project

Vehicle Trip Types/ Fuel Type	Daily Trips	Trip Length (miles)	Total Miles per Day	Total Miles per Phase[1]	Fleet Average Miles per Gallon[2]	Fuel Used (gallons)
Site Preparation						
Worker (Gasoline)	17.5	18.5	324	3,238	25.4	127
Water Trucks (Diesel)	3	1.0	3	30	7.3	4
Grading						
Worker (Gasoline)	20	18.5	370	12,950	25.4	509
Haul Trucks (Diesel)	15.7	20	314	10,990	7.3	1,496
Water Trucks (Diesel)	3	1.0	3	105	7.3	14
Building Construction						
Worker (Gasoline)	10	18.5	185	44,215	25.4	1,739
Vendor Truck (Diesel)	2	10.2	20	4,876	7.3	664
Water Trucks (Diesel)	3	1.0	3	717	7.3	98
Paving						
Worker (Gasoline)	15	18.5	278	5,550	25.4	218
Architectural Coatings						
Worker (Gasoline)	2	18.5	37	740	25.4	29
Total Gasoline Fuel Used from On-Road Construction Vehicles (gallons)						**2,623**
Total Diesel Fuel Used from On-Road Construction Vehicles (gallons)						**2,276**

Notes:
[1] Based on: 10 days for Site Preparation, 35 days for Grading; 239 days for Building Construction; 20 days for Paving; and 20 days for Architectural Coating.
[2] From EMFAC 2021 model (see Appendix B). Worker Trips based on entire fleet of gasoline vehicles and Vendor Trips based on only truck fleet of diesel vehicles.
Source: CalEEMod Version 2022.1; EMFAC2021.

Table I shows that the on-road construction-related vehicle trips would consume 2,623 gallons of gasoline and 2,276 gallons of diesel fuel. As detailed above, Table H shows that the off-road construction equipment would consume 41,236 gallons of diesel fuel. This would result in the total consumption of 2,623 gallons of gasoline and 43,512 gallons of diesel fuel from construction of the proposed project.

Operations-Related Energy Use

The operation of the proposed project is anticipated to use energy in the forms of petroleum fuel, electricity, and natural gas, and the calculations for each source are described below.

<u>Operational Petroleum Fuel</u>

Operation of the proposed project is anticipated to use energy in the forms of petroleum fuel for both off-road equipment as well as from vehicle trips to and from the project site and the calculations for each source are described below.

Off-Road Equipment

According to the project applicant, skip loaders, mini-excavators, and/or a trail dozer would be utilized for monthly maintenance of the trails. In addition, a portable generator would be utilized for events for the operation of a food truck and/or for music events and there would be weekly water truck deliveries to the project site. The off-road equipment utilized during operation of the proposed project was modeled based on a skid steer loader, since that is a similar size to a mini excavator or mini dozer, operating 8 hours per day and 12 days per year and a generator operating 8 hours per day and 26 days per year. In addition, an off-highway truck was modeled to account for the weekly water truck deliveries based on 1 hour per day and 52 days per year. The off-road equipment fuel usage was modeled based on the same methodology described above for the off-road construction equipment and the results are shown below in Table J that shows that off-road equipment operational activities would utilize 652 gallons of diesel fuel per year.

Table J – Off-Road Equipment and Fuel Consumption from Operation of the Proposed Project

Equipment Type	Equipment Quantity	Horse-power	Load Factor	Operating Hours per Day	Total Operational Hours[1]	Fuel Used (gallons)
Skid Steer Loader	1	71	0.37	8	96	145
Generator	1	14	0.74	8	208	124
Off-Highway Truck	1	376	0.38	1	52	384
Total Off-Road Equipment Diesel Fuel Used during Operations (gallons)						**652**

Notes:
[1] Based on 12 days per year for the skid steer loader, 26 days for the generator, and 52 days for the off-highway truck.
Source: CalEEMod Version 2022.1 (see Appendix A); CARB, 2017.

On-Road Operations-Related Vehicle Trips

The on-road operations-related vehicle trips fuel usage was calculated through use of the total annual vehicle miles traveled assumptions from the CalEEMod model run as detailed above in Section 8.1, which found that operation of the proposed project would generate 469,265 vehicle miles traveled per year. The calculated total operational miles were then divided by 25.4 miles per gallon, which was calculated through use of the EMFAC2021 model and based on the South Coast Air Basin portion of Los Angeles County miles per gallon rates for the year 2024. The EMFAC2021 model printouts are shown in Appendix B. Based on the above calculation methodology, operational vehicle trips generated from the proposed project would consume 18,458 gallons of gasoline per year.

Operational Electricity Use

The operations-related electricity usage was calculated in the CalEEMod model run that is detailed above in Section 8.1 that found the operation of the proposed project will not utilize any electricity, other than what was detailed above from the occasional generator use.

Operational Natural Gas Use

The operations-related natural gas usage was calculated in the CalEEMod model run that is detailed above in Section 8.1 that found the operation of the proposed project will not utilize any natural gas.

9.0 THRESHOLDS OF SIGNIFICANCE

9.1 Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominant pollution generators in the Air Basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes of this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table K.

Table K – SCAQMD Regional Criteria Pollutant Emission Thresholds of Significance

	Pollutant Emissions (pounds/day)						
	VOC	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**	**Lead**
Construction	75	100	550	150	150	55	3
Operation	55	55	550	150	150	55	3

Source: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2

9.2 Local Air Quality

Project-related construction air emissions may have the potential to exceed the state and federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. SCAQMD has also provided *Final Localized Significance Threshold Methodology* (LST Methodology), July 2008, which details the methodology to analyze local air emission impacts. The LST Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5.

The LST Methodology provides Look-Up Tables with different thresholds based on the location and size of the project site and distance to the nearest sensitive receptors. As detailed above in Section 6.3, the project site is located in Air Monitoring Area 13, Santa Clarita Valley. The Look-Up Tables provided in the LST Methodology include project site acreage sizes of 1-acre, 2-acres and 5-acres. Although the proposed project would disturb up to 20 acres, it is unlikely that more than 5 acres would be disturbed in any day. As such, the 5-acre threshold has been utilized in this analysis.

The nearest sensitive receptors to the project site are homes located within the canine training and boarding facilities to the east that are as near as 800 feet (244 meters) from the proposed areas to be disturbed as part of the project. As such, the 200 meter thresholds were utilized in order to provide a conservative analysis. Table L below shows the LSTs for NO_x, CO, PM10 and PM2.5 for both construction and operational activities.

Table L – SCAQMD Local Air Quality Thresholds of Significance

Activity	Allowable Emissions (pounds/day)[1]			
	NOx	CO	PM10	PM2.5
Construction	275	4,608	79	26
Operation	275	4,608	19	7

Notes:
[1] The nearest sensitive receptor to the project site are homes located as near as 800 feet (244 meters) from the areas to be disturbed. The 200 meter thresholds were utilized to provide a conservative analysis.
Source: Calculated from SCAQMD's Mass Rate Look-up Tables for 5 acres in Air Monitoring Area 13, Santa Clarita Valley.

9.3 Toxic Air Contaminants

According to the SCAQMD CEQA Handbook, any project that has the potential to expose the public to TACs in excess of the following thresholds would be considered to have a significant air quality impact:

- If the Maximum Incremental Cancer Risk is 10 in one million or greater; or
- Toxic air contaminants from the proposed project would result in a Hazard Index increase of 1 or greater.

In order to determine if the proposed project may have a significant impact related to TACs, the *Health Risk Assessment Guidance for analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*, (Diesel Analysis) prepared by SCAQMD, August 2003, recommends that if the proposed project is anticipated to create TACs through stationary sources or regular operations of diesel trucks on the project site, then the proximity of the nearest receptors to the source of the TAC and the toxicity of the HAP should be analyzed through a comprehensive facility-wide health risk assessment (HRA).

9.4 Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

> "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 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.
>
> The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals."

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

9.5 Energy Conservation

The *2022 CEQA California Environmental Quality Act Statutes & Guidelines* (2022 CEQA Guidelines) include an Energy Section that analyzes the proposed project's energy consumption in order to avoid or reduce inefficient, wasteful or unnecessary consumption of energy. Appendix F of the 2022 CEQA Statute and Guidelines, states the following:

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

(1) Decreasing overall per capita energy consumption,

(2) Decreasing reliance on fossil fuels such as coal, natural gas and oil, and

(3) Increasing reliance on renewable energy sources.

Since the Energy Section was recently added, no state or local agencies have adopted specific criteria or thresholds to be utilized in an energy impact analysis. However, Appendix F, Subsection II.C of the 2022 CEQA Guidelines provides the following criteria for determining significance.

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project life cycle including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
2. The effects of the project on local and regional energy supplies and on requirement for additional capacity.
3. The effects of the project on peak and base period demands for electricity and other forms of energy.
4. The degree to which the project complies with existing energy standards.
5. The effects of the project on energy resources.
6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

If the proposed project creates inefficient, wasteful or unnecessary consumption of energy during construction or operation activities or conflicts with a state or local plan for renewable energy or energy efficiency, then the proposed project would create a significant energy impact.

9.6 Greenhouse Gas Emissions

In order to identify significance criteria under CEQA for development projects, SCAQMD initiated a Working Group, which provided detailed methodology for evaluating significance under CEQA. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual threshold of 3,000 $MTCO_2e$ for all land use projects. Although the SCAQMD provided substantial evidence supporting the use of the above threshold, as of November 2017, the SCAQMD Board has not yet considered or approved the Working Group's thresholds. As such, the SCAQMD's 3,000 $MTCO_2e$ annual threshold has been included in this analysis for informational purposes only and determination of significance for GHG emissions has been based on determination of consistency with the applicable GHG emission reduction plans.

The GHG emissions analysis for both construction and operation of the proposed project can be found below in Sections 10.8 and 10.9.

10.0 IMPACT ANALYSIS

10.1 CEQA Thresholds of Significance

Consistent with CEQA and the State CEQA Guidelines, a significant impact related to air quality, energy, and GHG emissions would occur if the proposed project is determined to:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people;
- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation;
- Conflict with or obstruct a state or local plan for renewable energy;
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

10.2 Air Quality Compliance

The proposed project would not conflict with or obstruct implementation of the SCAQMD AQMP. The following section discusses the proposed project's consistency with the SCAQMD AQMP.

SCAQMD Air Quality Management Plan

CEQA requires a discussion of any inconsistencies between a proposed project and applicable general plans and regional plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD AQMP. Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with federal and state air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

(2) Whether the project will exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in this report, short-term regional construction air emissions would not result in significant impacts based on SCAQMD regional thresholds of significance discussed above in Section 9.1 or local thresholds of significance discussed above in Section 9.2. The ongoing operation of the proposed project would generate air pollutant emissions that are inconsequential on a regional basis and would not result in significant impacts based on SCAQMD thresholds of significance discussed above in Section 9.1. The analysis for long-term local air quality impacts showed that local pollutant concentrations would not be projected to exceed the air quality standards. Therefore, a less than significant long-term impact would occur and no mitigation would be required.

Therefore, based on the information provided above, the proposed project would be consistent with the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. A project would not exceed the assumptions in the AQMP if it is consistent with the growth projections utilized in the preparation of the AQMP. The AQMP is developed through use of the planning forecasts provided in SCAG's RTP/SCS (Connect SoCal 2020) and FTIP (2019 FTIP). The RTP/SCS is a major planning document for the regional transportation and land use network within Southern California. The RTP/SCS is a long-range plan that is required by federal and state requirements placed on SCAG and is updated every four years. The FTIP provides long-range planning for future transportation improvement projects that are constructed with state and/or federal funds within Southern California. SCAG's forecasts are based on population, employment, and housing data provided in the general plans of local governments, including the City of Santa Clarita General Plan and the Los Angeles County (County) General Plan. As such, the proposed project would be consistent with AQMP if it is consistent with City and County General Plans.

The western portion of the project site is designated as Open Space (OS) in the City's General Plan and is zoned Open Space (OS). The eastern portion of the project site is designated as Rural Land 10 (RL10) and zoned Heavy Agriculture (A-2-2) in the County's General Plan. The proposed bike park project is an allowed use within the City's OS land use designation and zoning the County's RL10 land use designation and A-2-2 zone. Therefore, the proposed project would be consistent with the current zoning and land use designations and would not require a General Plan Amendment or zone change. Additionally, the proposed bike park use would not increase population or housing and would generate a minimal number of employees to maintain the park. Thus, the proposed project would not exceed the population, housing, or employment forecasts in the City and County General Plans. As such, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed project will not conflict with or obstruct the implementation of the AQMP and impacts would be a less than significant.

Level of Significance

Less than significant impact.

10.3 Cumulative Net Increase in Non-Attainment Pollution

The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. The SCAQMD has published a report on how to address cumulative impacts from air pollution: White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution (http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper.pdf). In this report the AQMD clearly states (Page D-3):

> *"…the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or Environmental Impact Report (EIR). The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for TAC emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility- wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts. Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."*

Therefore, this analysis assumes that individual projects that do not generate operational or construction emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the Air Basin is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable. The following section calculates the potential air emissions associated with the construction and operations of the proposed project and compares the emissions to the SCAQMD standards.

Construction Emissions

The construction activities for the proposed project are anticipated to include construction of a bike park. The CalEEMod model has been utilized to calculate the construction-related emissions from the proposed project and the input parameters utilized in this analysis have been detailed in Section 8.1. The maximum daily construction-related criteria pollutant emissions from the proposed project segmented by season and year are shown below in Table M.

Table M shows that none of the analyzed criteria pollutants would exceed either the regional or local emissions thresholds during construction of the proposed project. Therefore, a less than significant regional or local air quality impact would occur from construction of the proposed project.

Table M – Construction-Related Criteria Pollutant Emissions

Season and Year of Construction	Maximum Daily Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Daily Summer Maximum						
2025	1.17	10.6	13.8	0.02	2.57	0.63
Daily Winter Maximum						
2024	3.72	36.1	34.1	0.07	8.93	4.35
2025	3.47	10.6	13.7	0.02	2.57	0.63
Maximum Daily Construction Emissions	**3.72**	**36.1**	**34.1**	**0.07**	**8.93**	**4.35**
SCQAMD Regional Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
SCAQMD Local Thresholds[1]	**--**	**275**	**4,608**	**--**	**79**	**26**
Exceeds Thresholds?	No	No	No	No	No	No

Notes:
[1] The nearest sensitive receptor to the project site are homes located as near as 800 feet (244 meters) from the areas to be disturbed. The 200 meter thresholds were utilized to provide a conservative analysis. Calculated from SCAQMD's Mass Rate Look-up Tables for 5 acres in Air Monitoring Area 13, Santa Clarita Valley.
Source: CalEEMod Version 2022.1.

Operational Emissions

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips, onsite area source emissions created from the on-going use of the proposed project, and the use of off-road equipment. The operations-related regional criteria air quality impacts created by the proposed project have been analyzed through use of the CalEEMod model and the input parameters utilized in this analysis have been detailed in Section 8.1. The worst-case summer or winter VOC, NOx, CO, SO_2, PM10, and PM2.5 daily emissions created from the proposed project's long-term operations have been calculated and are summarized below in Table N. The CalEEMod daily emissions printouts are provided in Appendix A.

Table N – Operational Criteria Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Mobile Sources[1]	0.79	0.88	9.43	0.02	2.14	0.55
Area Sources[2]	0.19	<0.01	<0.01	<0.01	<0.01	<0.01
Energy Usage[3]	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment[4]	0.22	2.00	2.40	0.01	0.07	0.06
Total Emissions	**1.20**	**2.88**	**11.83**	**0.03**	**2.21**	**0.61**
SCQAMD Regional Operational Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
SCAQM Local Operational Thresholds[5]	**--**	**275**	**4,608**	**--**	**19**	**7**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Mobile sources consist of emissions from vehicles and road dust.
[2] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[3] Energy usage consists of emissions from natural gas usage. No natural gas would be consumed from operation of the proposed project.
[4] Off-road equipment was modeled based on a skid steer loader operating up to 8 hours per day and 12 days per year, a generator operating up to 8 hours per day and 26 days per year, and an off-highway truck making weekly water truck deliveries 1 hour per day and 52 days per year during operation of project.
[5] The nearest sensitive receptor to the project site are homes located as near as 800 feet (244 meters) from the areas to be disturbed. The 200 meter thresholds were utilized to provide a conservative analysis. Calculated from SCAQMD's Mass Rate Look-up Tables for 5 acres in Air Monitoring Area 13, Santa Clarita Valley.
Source: Calculated from CalEEMod Version 2022.1.

The data provided in Table N shows that none of the analyzed criteria pollutants would exceed either the regional or local emissions thresholds. Therefore, less than significant regional and local air quality impacts would occur from operation of the proposed project.

Friant Ranch Case

In *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502 (also referred to as "*Friant Ranch*"), the California Supreme Court held that when an EIR concluded that when a project would have significant impacts to air quality impacts, an EIR should "make a reasonable effort to substantively connect a project's air quality impacts to likely health consequences." In order to determine compliance with this Case, the Court developed a multi-part test that includes the following:

1) The air quality discussion shall describe the specific health risks created from each criteria pollutant, including DPM.

This analysis details the specific health risks created from each criteria pollutant above in Section 4.1 and specifically in Table B. In addition, the specific health risks created from DPM is detailed above in Section 2.2 of this analysis. As such, this analysis meets the part 1 requirements of the Friant Ranch Case.

2) The analysis shall identify the magnitude of the health risks created from the project. The ruling details how to identify the magnitude of the health risks. Specifically, on page 24 of the ruling it states "The Court of Appeal identified several ways in which the EIR could have framed the analysis so as to adequately inform the public and decision makers of possible adverse health effects. The County could have, for example, identified the Project's impact on the days of nonattainment per year."

The Friant Ranch Case found that an EIR's air quality analysis must meaningfully connect the identified air quality impacts to the human health consequences of those impacts, or meaningfully explain why that analysis cannot be provided. As noted in the Brief of Amicus Curiae by the SCAQMD in the Friant Ranch case (https://www.courts.ca.gov/documents/9-s219783-ac-south-coast-air-quality-mgt-dist-041315.pdf) (Brief), SCAQMD has among the most sophisticated air quality modeling and health impact evaluation capability of any of the air districts in the State, and thus it is uniquely situated to express an opinion on how lead agencies should correlate air quality impacts with specific health outcomes. The SCAQMD discusses that it may be infeasible to quantify health risks caused by projects similar to the proposed project, due to many factors. It is necessary to have data regarding the sources and types of air toxic contaminants, location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors (worker and residence). The Brief states that it may not be feasible to perform a health risk assessment for airborne toxics that will be emitted by a generic industrial building that was built on "speculation" (i.e., without knowing the future tenant(s)). Even where a health risk assessment can be prepared, however, the resulting maximum health risk value is only a calculation of risk, it does not necessarily mean anyone will contract cancer as a result of the project. The Brief also cites the author of the CARB methodology, which reported that a PM2.5 methodology is not suited for small projects and may yield unreliable results. Similarly, SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by NO_x or VOC emissions from relatively small projects, due to photochemistry and regional model limitations. The Brief concludes, with respect to the Friant Ranch EIR, that although it may have been technically possible to plug the data into a methodology, the results would not have been reliable or meaningful.

On the other hand, for extremely large regional projects (unlike the proposed project), the SCAQMD states that it has been able to correlate potential health outcomes for very large emissions sources – as part of their rulemaking activity, specifically 6,620 pounds per day of NO_x and 89,180 pounds per day of VOC were expected to result in approximately 20 premature deaths per year and 89,947 school absences due to ozone. As shown above in Table M, project-related construction activities would generate a maximum of 3.72 pounds per day of VOC and 36.1 pounds per day of $NO_{x.}$ In addition, as shown above in Table N, operation of the proposed project would generate 1.20 pounds per day of VOC and 2.88 pounds per day NO_x. The proposed project would not generate anywhere near these levels of 6,620 pounds per day of NO_x or 89,190 pounds per day of VOC emissions. Therefore, the proposed project's emissions are not sufficiently high enough to use a regional modeling program to correlate health effects on a basin-wide level.

Notwithstanding, this analysis does evaluate the proposed project's localized impact to air quality for emissions of CO, NO_x, PM10, and PM2.5 by comparing the proposed project's onsite emissions to the SCAQMD's applicable LST thresholds. As evaluated in this analysis, the proposed project would not result in emissions that exceeded the SCAQMD's LSTs. Therefore, the proposed project would not be expected to exceed the most stringent applicable federal or state ambient air quality standards for emissions of CO, NOx, PM10, and PM2.5.

Local CO Hotspot Impacts from Project-Generated Vehicular Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the state and federal CO standards of 20 ppm over one hour or 9 ppm over eight hours.

At the time of the SCAQMD CEQA Handbook (1993), the Air Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Air Basin and in the state have steadily declined. In 2007, the Air Basin was designated in attainment for CO under both the CAAQS and NAAQS. SCAQMD conducted a CO hot spot analysis for attainment at the busiest intersections in Los Angeles during the peak morning and afternoon periods and did not predict a violation of CO standards[3]. Since the nearby intersections to the proposed project are much smaller with less traffic than what was analyzed by the SCAQMD, no local CO Hotspot are anticipated to be created from the proposed project and no CO Hotspot modeling was performed. Therefore, a less-than-significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant.

Level of Significance

Less than significant impact.

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[3] The four intersections analyzed by the SCAQMD were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning and LOS F in the evening peak hour.

10.4 Sensitive Receptors

The proposed project would not expose sensitive receptors to substantial pollutant concentrations. The local concentrations of criteria pollutant emissions produced in the nearby vicinity of the proposed project, which may expose sensitive receptors to substantial concentrations have been calculated above in Section 10.3 for both construction and operations, which are discussed separately below. The discussion below also includes an analysis of the potential impacts from TAC emissions. The nearest sensitive receptors to the project site are homes located within the canine training and boarding facilities to the east that are as near as 800 feet from the proposed areas to be disturbed as part of the project. There are also single-family homes as near as 1,700 feet west and 1,900 feet to the south of the areas to be disturbed as part of the project.

Construction-Related Sensitive Receptor Impacts

The construction activities for the proposed project are anticipated to include construction of a bike park. Construction activities may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutant emissions and from TAC emissions created from onsite construction equipment, which are described below.

<u>Local Criteria Pollutant Impacts from Construction</u>

The local air quality impacts from construction of the proposed project have been analyzed above in Section 10.3. The analysis found that the construction of the proposed project would not exceed the local NO_x, CO, PM10 and PM2.5 thresholds of significance discussed above in Section 9.2. Therefore, construction of the proposed project would create a less than significant construction-related impact to local air quality and no mitigation would be required.

<u>Toxic Air Contaminants Impacts from Construction</u>

The greatest potential for TAC emissions would be related to DPM emissions associated with heavy equipment operations during construction of the proposed project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of “individual cancer risk”. “Individual Cancer Risk” is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. It should be noted that the most current cancer risk assessment methodology recommends analyzing a 30 year exposure period for the nearby sensitive receptors (OEHHA, 2015).

Given the relatively limited number of heavy-duty construction equipment, the varying distances that construction equipment would operate to the nearby sensitive receptors, and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 30 or 70 years) substantial source of TAC emissions and corresponding individual cancer risk. In addition, CCR Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than five minutes, requires equipment operators to label each piece of equipment and provide annual reports to CARB of their fleet’s usage and emissions. This regulation also requires systematic upgrading of the emission tier level of each fleet, and currently no commercial operator is allowed to purchase Tier 0, Tier 1 or Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between years 2014 and 2023. As of January 2022, 50 percent or more of all contractor’s equipment fleets must by Tier 2 or higher; by January 2026, 75 percent or more of all contractors’ equipment fleets must be Tier 2 or higher and by January 2029, 100 percent of all equipment fleets must be Tier 2 or higher.

Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project. As such, construction of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Operations-Related Sensitive Receptor Impacts

The on-going operations of the proposed project may expose sensitive receptors to substantial pollutant concentrations of local CO emissions from the project-generated vehicular trips and from the potential local criteria pollutant emissions from onsite operations. The following analyzes the vehicular CO emissions, local criteria pollutant emissions from onsite operations, and TAC emissions.

Local CO Hotspot Impacts from Project-Generated Vehicle Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential impacts to sensitive receptors. The analysis provided above in Section 10.3 shows that no local CO Hotspots are anticipated to be created at any nearby intersections from the vehicle traffic generated by the proposed project. Therefore, operation of the proposed project would result in a less than significant exposure of offsite sensitive receptors to substantial pollutant concentrations.

Local Criteria Pollutant Impacts from Onsite Operations

The local air quality impacts from the operation of the proposed project would occur from onsite sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances. The analysis provided above in Section 10.3 found that the operation of the proposed project would not exceed the local NO_x, CO, PM10 and PM2.5 thresholds of significance discussed above in Section 9.2. Therefore, the on-going operations of the proposed project would result in a less-than-significant operations-related impact to local air quality due to on-site emissions and no mitigation would be required.

Operations-Related Toxic Air Contaminant Impacts

Particulate matter from diesel exhaust is the predominant TAC in most areas and according to *The California Almanac of Emissions and Air Quality 2013 Edition*, prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to the distance to the nearest sensitive receptors, the nominal number of diesel truck trips that are anticipated to be generated by the on-going operation of the proposed bike park that would be primarily limited to weekly water truck deliveries, and the occasional use of diesel fuel to operate generators and off-road equipment, a less than significant TAC impact would be created from the on-going operations of the proposed project and no mitigation would be required.

Level of Significance

Less than significant impact.

10.5 Odor Emissions

The proposed project would not create objectionable odors affecting a substantial number of people. Individual responses to odors are highly variable and can result in a variety of effects. Generally, the impact of an odor results from a variety of factors such as frequency, duration, offensiveness, location, and sensory perception. The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. The intensity refers to an individual's or group's perception of the odor strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected person lives, works, or visits; the type of activity in which he or she is engaged; and the sensitivity of the impacted receptor.

Sensory perception has four major components: detectability, intensity, character, and hedonic tone. The detection (or threshold) of an odor is based on a panel of responses to the odor. There are two types of thresholds: the odor detection threshold and the recognition threshold. The detection threshold is the lowest concentration of an odor that will elicit a response in a percentage of the people that live and work in the immediate vicinity of the project site and is typically presented as the mean (or 50 percent of the population). The recognition threshold is the minimum concentration that is recognized as having a characteristic odor quality, this is typically represented by recognition by 50 percent of the population. The intensity refers to the perceived strength of the odor. The odor character is what the substance smells like. The hedonic tone is a judgment of the pleasantness or unpleasantness of the odor. The hedonic tone varies in subjective experience, frequency, odor character, odor intensity, and duration. Potential odor impacts have been analyzed separately for construction and operations below.

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of coatings such as asphalt pavement, paints and solvents and from emissions from diesel equipment. Standard construction requirements that limit the time of day when construction may occur as well as SCAQMD Rule 1108 that limits VOC content in asphalt and Rule 1113 that limits the VOC content in paints and solvents would minimize odor impacts from construction. As such, the objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the project site's boundaries. Through compliance with the applicable regulations that reduce odors and due to the transitory nature of construction odors, a less than significant odor impact would occur and no mitigation would be required.

Operations-Related Odor Impacts

The proposed project would consist of a bike park development. The proposed project would not generate or contain any known sources of odors. Therefore, no significant impact related to odors would occur during the on-going operations of the proposed project.

Level of Significance

Less than significant impact.

10.6 Energy Consumption

The proposed project would impact energy resources during construction and operation. Energy resources that would be potentially impacted include electricity, natural gas, and petroleum based fuel supplies and distribution systems. This analysis includes a discussion of the potential energy impacts of the proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. A general definition of each of these energy resources are provided below.

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands. In 2022, Los Angeles County consumed 68,485 gigawatt-hours per year of electricity[4].

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network and, therefore, resource availability is typically not an issue. Natural gas satisfies almost one-third of the State's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel. Natural gas is measured in terms of cubic feet. In 2022, Los Angeles County consumed 2,820 million therms of natural gas[5].

Petroleum-based fuels currently account for a majority of the California's transportation energy sources and primarily consist of diesel and gasoline types of fuels. However, the State has been working on developing strategies to reduce petroleum use. Over the last decade California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHG emissions from the transportation sector, and reduce vehicle miles traveled (VMT). Accordingly, petroleum-based fuel consumption in California has declined. In 2022, 3,070 million gallons of gasoline and 295 million gallons of diesel was sold in Los Angeles County[6].

The following section calculates the potential energy consumption associated with the construction and operations of the proposed project and provides a determination if any energy utilized by the proposed project is wasteful, inefficient, or unnecessary consumption of energy resources.

Construction Energy

The proposed project would consume energy resources during construction in three (3) general forms:

1. Petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the Project Site, as well as delivery and haul truck trips (e.g. hauling of demolition material to off-site reuse and disposal facilities);
2. Electricity associated with the conveyance of water that would be used during project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power; and,
3. Energy used in the production of construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass.

4 Obtained from: http://www.ecdms.energy.ca.gov/elecbycounty.aspx
5 Obtained from: http://www.ecdms.energy.ca.gov/gasbycounty.aspx
6 Obtained from: https://www.energy.ca.gov/media/3874

Construction-Related Electricity

During construction the proposed project would consume electricity to construct the proposed bike park and infrastructure. Electricity would be supplied to the project site by portable generators that was accounted for in the CalEEMod model. Electricity consumed during project construction would vary throughout the construction period based on the construction activities being performed. Various construction activities include electricity associated with the conveyance of water that would be used during project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power. Such electricity demand would be temporary, nominal, and would cease upon the completion of construction. Therefore, the use of electricity during project construction would not be wasteful, inefficient, or unnecessary.

Construction-Related Natural Gas

Construction of the proposed project typically would not involve the consumption of natural gas. Natural gas would not be supplied to support construction activities, thus there would be no demand generated by construction. Development of the proposed project would not require any natural gas connections and no natural gas lines would be moved as part of the proposed project. Therefore, there would be no construction-related impacts to natural gas supply and infrastructure.

Construction-Related Petroleum Fuel Use

Petroleum-based fuel usage represents the highest amount of transportation energy potentially consumed during construction, which would be utilized by both off-road equipment operating on the project site and on-road automobiles transporting workers to and from the project site and on-road trucks transporting equipment and supplies to the project site.

The off-road construction equipment fuel usage was calculated through use of the off-road equipment assumptions and fuel use assumptions shown above in Section 8.2, which found that construction of the proposed project would consume 2,623 gallons of gasoline and 43,512 gallons of diesel fuel. This equates to 0.0001 percent of the gasoline and 0.01 percent of the diesel used annually in Los Angeles County. As such, the construction-related petroleum use would be nominal, when compared to current county-wide petroleum usage rates.

Construction activities associated with the proposed project would be required to adhere to all state and SCAQMD regulations for off-road equipment and on-road trucks, which provide minimum fuel efficiency standards. As such, construction activities for the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of energy resources. Impacts regarding transportation energy would be less than significant. Development of the project would not result in the need to manufacture construction materials or create new building material facilities specifically to supply the proposed project. It is difficult to measure the energy used in the production of construction materials such as asphalt, steel, and concrete. However, it is reasonable to assume that the production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices in the interest of minimizing the cost of doing business.

Operational Energy

The on-going operation of the proposed project would require the use of energy resources limited to generators for food trucks and music and from off-road equipment used for the maintenance of the trails.

Energy would also be consumed during operations related to water usage, solid waste disposal, landscape equipment and vehicle trips.

Operations-Related Electricity

Operation of the proposed project would project will not utilize any electricity, other than from the occasional generator use that has been analyzed below under off-road equipment.

Operations-Related Natural Gas

Operation of the proposed project would not utilize any natural gas.

Operations-Related Off-Road Equipment

According to the project applicant, skip loaders, mini-excavators, and/or a trail dozer would be utilized for monthly maintenance of the trails. In addition, a portable generator would be utilized for events for the operation of a food truck and/or for music events. The modeling of the operational off-road equipment is detailed above in Section 8.2, which found that the off-road equipment would consume 652 gallons of diesel fuel per year. Operational activities associated with the proposed project would be required to adhere to all state and SCAQMD regulations for off-road equipment. As such, operational activities for the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of diesel fuel. Impacts regarding operational off-road equipment energy usage would be less than significant

Operations-Related Vehicular Petroleum Fuel Usage

Operation of the proposed project would result in increased consumption of petroleum-based fuels related to vehicular travel to and from the project site. As detailed above in Section 8.2 the proposed project would consume 18,458 gallons of gasoline per year from vehicle travel. This equates to 0.0005 percent of the gasoline consumed annually in Los Angeles County. As such, the operations-related petroleum use would be nominal, when compared to current petroleum usage rates.

It should be noted that, the proposed project would comply with all federal, state, and City requirements related to the consumption of transportation energy and the proposed project would be promoting the use of alternative modes of travel (i.e., bicycles). Therefore, impacts with regard transportation energy supply and infrastructure capacity would be less than significant and no mitigation measures would be required.

In conclusion, the proposed project would comply with regulatory compliance measures outlined by the State and City related to air quality (see section 4.0 above, energy (see section 5.0 above, and GHGs (see section 6.0 above). Additionally, the proposed project would be constructed in accordance with all applicable City Building and Fire Codes. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Impacts would be less than significant.

Level of Significance

Less than significant impact.

10.7 Energy Plan Consistency

The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The applicable energy plan for the proposed project is the Conservation and Open Space Element of the Santa Clarita General Plan, June, 2011. The proposed project's consistency with the applicable energy-related policies in the General Plan are shown in Table O.

Table O – Proposed Project Compliance with Applicable General Plan Energy Policies

Policy No.	General Plan Policy	Proposed Project Implementation Actions
Goal CO 8: Development designed to improve energy efficiency, reduce energy and natural resource consumption, and reduce emissions of greenhouse gases.		
CO 8.3.1	Evaluate site plans proposed for new development based on energy efficiency pursuant to LEED (Leadership in Energy and Environmental Design) standards for New Construction and Neighborhood Development, including the following: a) location efficiency; b) environmental preservation; c) compact, complete, and connected neighborhoods; and d) resource efficiency, including use of recycled materials and water	**Consistent.** All proposed structures will be designed to not utilize any energy.
CO 8.3.2	Promote construction of energy efficient buildings through requirements for LEED certification or through comparable alternative requirements as adopted by local ordinance	**Consistent.** All proposed structures will be designed to not utilize any energy.
CO 8.3.6	Require new development to use passive solar heating and cooling techniques in building design and construction, which may include but are not be limited to building orientation, clerestory windows, skylights, placement and type of windows, overhangs to shade doors and windows, and use of light colored roofs, shade trees, and paving materials	**Consistent.** Proposed shade structures vault restrooms will be designed to use passive solar heating and cooling techniques.
CO 8.3.7	Encourage the use of trees and landscaping to reduce heating and cooling energy loads, through shading of buildings and parking lots.	**Consistent.** Where possible, trees will be planted to provide shade to the proposed event and parking areas.
CO 8.3.8	Encourage energy-conserving heating and cooling systems and appliances, and energy-efficiency in windows and insulation, in all new construction.	**Not Applicable.** No heating and cooling systems or appliances will be installed into any of the proposed project's structures.
CO 8.3.9	Limit excessive lighting levels, and encourage a reduction of lighting when businesses are closed to a level required for security.	**Not Applicable.** No permanent lighting would be installed as part of the proposed project.

Source: City of Santa Clarita, 2011.

As shown in Table O, the proposed project would be consistent with all applicable energy-related policies from the General Plan. Therefore, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Impacts would be less than significant.

Level of Significance

Less than significant impact.

10.8 Generation of Greenhouse Gas Emissions

The proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The proposed project would consist of the development of a bike park. The proposed project is anticipated to generate GHG emissions from area sources, mobile sources, waste disposal, water usage, off-road equipment and construction equipment. The proposed project would not include any utility connections, so would not utilize any energy usage as modeled in CalEEMod, however operation of the project would occasionally utilize electricity through generators that was modeled as part of the off-road equipment. The project's GHG emissions have been calculated with the CalEEMod model based on the construction and operational parameters detailed above in Section 8.1. A summary of the results is shown below in Table P and the CalEEMod model run is provided in Appendix A.

Table P – Project Related Greenhouse Gas Annual Emissions

	Greenhouse Gas Emissions (Metric Tons per Year)			
Category	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Mobile Sources[1]	164	0.01	0.01	166
Area Sources[2]	0.00	0.00	0.00	0.00
Energy Usage[3]	0.00	0.00	0.00	0.00
Water and Wastewater[4]	0.13	<0.01	<0.01	0.13
Solid Waste[5]	0.13	0.01	0.00	0.46
Refrigeration[6]	--	--	--	0.00
Operational Off-Road Equipment[7]	22.2	<0.01	<0.01	22.3
Construction[8]	15.03	<0.01	<0.01	15.10
Total GHG Emissions	**201**	**0.02**	**0.01**	**204**
SCAQMD Draft Threshold of Significance				**3,000**
Exceed Thresholds?				**No**

Notes:

[1] Mobile sources consist of GHG emissions from vehicles.

[2] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscaping equipment.

[3] Energy usage consists of GHG emissions from electricity and natural gas usage.

[4] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

[5] Waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.

[6] Refrigeration includes GHG emissions from refrigerants in air conditioning units. No refrigeration would be provided as part of project.

[7] Operational Off-Road Equipment was modeled based on a skid steer loader operating 8 hours per day and 12 days per year, a generator operating up to 8 hours per day and 26 days per year, and an off-highway truck making weekly water truck deliveries 1 hour per day and 52 days per year.

[8] Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.

Source: CalEEMod Version 2022.1 (see Appendix A)

The data provided in Table P shows that the proposed project would create 204 $MTCO_2e$ per year, which has been provided in this analysis for informational purposes only. The determination of significance of GHG emissions impacts is provided in the following Section 10.9, which shows the proposed project would be consistent with all applicable measures and strategies in the applicable reduction plans for the proposed project. For reference purpose only, Table P shows that the proposed project's GHG emissions would be well below the SCAQMD's draft threshold of 3,000 $MTCO_2e$ per year. Therefore, the proposed project would not generate GHG emissions that would have a significant impact on the environment. Impacts would be less than significant.

Level of Significance

Less than significant impact.

10.9 Greenhouse Gas Plan Consistency

The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. The applicable plans for the proposed project include the 2022 CARB Scoping Plan, the Connect SoCal 2020, and the Connect SoCal 2024. The project consistency analysis to each of these plans is detailed below.

Consistency with the 2022 CARB Scoping Plan

The 2022 Scoping Plan identifies additional GHG reduction actions and strategies necessary to achieve the AB 1279 target of 85 percent below 1990 levels by 2045. These actions and strategies build upon those identified in the first update to the Scoping Plan (2013) and in the second update to the Scoping Plan (2017). Although a number of these measures are currently established as statewide regulations, some measures have not yet been formally proposed or adopted. It is expected that these measures or similar actions to reduce GHG emissions will be adopted as required to achieve statewide GHG emissions targets. Provided in Table Q, Consistency with the 2022 Scoping Plan, is an evaluation of applicable reduction actions/strategies by emissions source category to determine how the proposed project would be consistent with or exceed reduction actions/strategies outlined in the 2022 Scoping Plan.

Table Q – Consistency with the 2022 Scoping Plan

AB 32 GHG Inventory Sector (shown in Bold) and Scoping Plan Action	Proposed Project Consistency with Scoping Plan Actions
GHG Emissions Reductions Relative to the SB 32 Target	
40% below 1990 levels by 2030.	**No Conflict.** As shown above in Table P, almost all of the GHG emissions generated by the proposed project would be from vehicle trips. AB 1493 controls GHG emissions from vehicles in California. Through adherence with the AB 1493 tailpipe GHG emissions standards, the proposed project would not conflict with this strategy.
Smart Growth / Vehicle Miles Traveled (VMT)	
VMT per capita reduced 25% below 2019 levels by 2030, and 22% below 2019 levels by 2045.	**No Conflict.** Senate Bill 375 directs each regional MPO (SCAG is MPO for project area) to adopt a SCS/RTP that meet this reduction target. The Connect SoCal 2024 was prepared to meet these reduction targets. Table R, below details how the proposed project would not conflict with the Connect SoCal 2024. As such, the proposed project would not conflict with this strategy.
Light-Duty Vehicle (LDV) Zero-Emission Vehicles (ZEVs)	
100% of LDV sales are ZEV by 2035.	**Not Applicable.** Executive Order N-79-20 requires all new LDVs sold in California to be zero-emission by the year 2035. The proposed project would not include any vehicle sales activities.

AB 32 GHG Inventory Sector (shown in Bold) and Scoping Plan Action	Proposed Project Consistency with Scoping Plan Actions
Truck ZEVs	
100% of medium-duty (MDV)/HDC sales are ZEV by 2040 (AB 74 University of California Institute of Transportation Studies [ITS] report).	**Not Applicable.** Executive Order N-79-20 requires all new LDVs sold in California to be zero-emission by the year 2045. The proposed project would not include any truck sales activities.
Aviation	
10% of aviation fuel demand is met by electricity (batteries) or hydrogen (fuel cells) in 2045. Sustainable aviation fuel meets most or the rest of the aviation fuel demand that has not already transitioned to hydrogen or batteries.	**Not Applicable.** The proposed project would not utilize any aviation fuel.
Ocean-going Vessels (OGV)	
2020 OGV At-Berth regulation fully implemented, with most OGVs utilizing shore power by 2027. 25% of OGVs utilize hydrogen fuel cell electric technology by 2045.	**Not Applicable.** The proposed project would not utilize any OGVs.
Port Operations	
100% of cargo handling equipment is zero-emission by 2037. 100% of drayage trucks are zero emission by 2035.	**Not Applicable.** The proposed project would not impact any operations at any ports.
Freight and Passenger Rail	
100% of passenger and other locomotive sales are ZEV by 2030. 100% of line haul locomotive sales are ZEV by 2035. Line haul and passenger rail rely primarily on hydrogen fuel cell technology, and others primarily utilize electricity.	**Not Applicable.** The proposed project would not impact any freight or passenger rail operations.
Oil and Gas Extraction	
Phase out oil and gas extraction operations by 2045.	**Not Applicable.** The proposed project would not impact any oil and gas extraction activities.
Petroleum Refining	
CCS on majority of petroleum refining operations by 2030. Production reduced in line with petroleum demand.	**Not Applicable.** The proposed project would not impact any petroleum refining activities.
Electricity Generation	
Electric sector GHG target of 38 $MMTCO_2e$ in 2030 and 31 $MMTCO_2e$ in 2045. Retail sales load coverage	**Not Applicable.** Senate Bill 1020 requires that 100 percent of retail sales of electricity be generated by renewable or zero-carbon source of electricity by December 1, 2045. The proposed project would not include any electrical utility connections.
New Residential and Commercial Buildings	
All electric appliances beginning 2026 (residential) and 2029 (commercial).	**Not Applicable.** The proposed project would not include any electrical utility connections and would not include the installation of any appliances.

AB 32 GHG Inventory Sector (shown in Bold) and Scoping Plan Action	Proposed Project Consistency with Scoping Plan Actions
Existing Residential Buildings	
80% of appliance sales are electric by 2030 and 100% of appliance sales are electric by 2035. Appliances are replaced at end of life**.**	**Not Applicable.** The proposed project would not include any existing residential buildings.
Existing Commercial Buildings	
80% of appliance sales are electric by 2030, and 100% of appliance sales are electric by 2045. Appliances are replaced at end of life.	**Not Applicable.** The proposed project would not include any existing commercial buildings.
Food Products	
7.5% of energy demand electrified directly and/or indirectly by 2030; 75% by 2045.	**Not Applicable.** The proposed project would not include any commercial food production activities.
Construction Equipment	
25% of energy demand electrified by 2030 and 75% electrified by 2045.	**No Conflict.** Executive Order N-79-20 requires all off-road vehicles and equipment to transition to 100 percent zero-emission equipment, where feasible, by 2035. All construction equipment fleets utilized during construction of the proposed project are required to be registered with CARB and meet CARB's current emission reductions regulations, which are anticipated to be updated to meet Executive Order N-79-20 requirements. As such, the proposed project would not conflict with this strategy.
Chemicals and Allied Products; Pulp and Paper	
Electrify 0% of boilers by 2030 and 100% of boilers by 2045. Hydrogen for 25% of process heat by 2035 and 100% by 2045. Electrify 100% of other energy demand by 2045.	**Not Applicable.** The proposed project would not include any pulp and paper production activities.
Stone, Clay, Glass, and Cement	
CCS on 40% of operations by 2035 and on all facilities by 2045. Process emissions reduced through alternative materials and CCS.	**Not Applicable.** The proposed project would not include any stone, clay, glass and cement production activities.
Other Industrial Manufacturing	
0% energy demand electrified by 2030 and 50% by 2045.	**Not Applicable.** The proposed project would not include any other industrial manufacturing activities.
Combined Heat and Power	
Facilities retire by 2040.	**Not Applicable.** The proposed project would not include any existing combined heat and power facilities.
Agriculture Energy Use	
25% energy demand electrified by 2030 and 75% by 2045.	**Not Applicable.** The proposed project would not include any commercial agriculture activities.
Low Carbon Fuels for Transportation	
Biomass supply is used to produce conventional and advanced biofuels, as well as hydrogen.	**Not Applicable.** The proposed project would not include any production of fuels for transportation.
Low Carbon Fuels for Buildings and Industry	

AB 32 GHG Inventory Sector (shown in Bold) and Scoping Plan Action	Proposed Project Consistency with Scoping Plan Actions
In 2030s, renewable natural gas (RNG) blended in pipeline Renewable hydrogen blended in natural gas pipeline at 7% energy (~20% by volume), ramping up between 2030 and 2040. In 2030s, dedicated hydrogen pipelines constructed to serve certain industrial clusters.	**Not Applicable.** The proposed project would not include any production of fuels for buildings and industry.
Non-combustion Methane Emissions	
Increase landfill and dairy digester methane capture. Some alternative manure management deployed for smaller dairies. Moderate adoption of enteric strategies by 2030. Divert 75% of organic waste from landfills by 2025. Oil and gas fugitive methane emissions reduced 50% by 2030 and further reductions as infrastructure components retire in line with reduced fossil gas demand.	**Not Applicable.** The proposed project would not include the operation of any landfill or dairy.
High GWP Potential Emissions	
Low GWP refrigerants introduced as building electrification increases, mitigating HFC emissions.	**Not Applicable.** The proposed project would not include the manufacturing of appliances that use low GWP refrigerants.
Compensate for Remaining Emissions	
Carbon Dioxide Removal (CDR) demonstration projects deployed by 2030. CDR scaled to compensate for remaining GHG emissions in 2045	**Not Applicable.** The proposed project would not include any CDR demonstration projects

Source: CARB, 2022.

As shown above in Table Q, the proposed project would not conflict with any applicable proposed action or strategy in the 2022 CARB Scoping Plan. Therefore, the proposed project would be consistent with the 2022 CARB Scoping Plan and potential impacts would be less than significant in this regard.

Consistency with Connect SoCal 2020

SB 375 requires CARB to set regional targets for GHG emissions reductions from passenger vehicle use. It is up to each MPO in the State (SCAG is the MPO for Southern California) to adopt a RTP/SCS to meet the reduction target set by CARB for the Southern California region. The Connect SoCal 2020 was adopted by SCAG that was prepared to meet a 2035 GHG emission reduction target of 19 percent reduction over the 2005 per capita emissions levels through the implementation of new land use, transportation and technology strategies. Provided in Table R, Consistency with the Connect SoCal 2020, is an evaluation of applicable goals and strategies to determine how the proposed project would be consistent with or exceed reduction strategies outlined in the Connect SoCal 2020.

Table R – Consistency with the Connect SoCal 2020

Strategies	Consistency Assessment
Connect SoCal Goals	
Goal 1: Encourage regional economic prosperity and global competitiveness.	**Not Applicable.** This Goal is directed at SCAG and does not apply to the proposed project. This strategy calls on encouraging regional economic prosperity and global competitiveness. The proposed project would not interfere with such policymaking.
Goal 2: Improve mobility, accessibility, reliability, and travel safety for people and goods.	**Consistent.** The project proposes to construct a bike park in an area that is in close proximity to existing commercial and residential uses. The proposed project would promote the enjoyment and use of alternative modes of travel (i.e., bike riding) and would construct new trails that would connect to the existing multi-use trails, thereby improving public accessibility to the trail system in the project area. Therefore, the proposed project is consistent with this goal.
Goal 3: Enhance the preservation, security, and resilience of the regional transportation system.	**Consistent.** The project proposes to construct a bike park with approximately 15 miles of maintained bike and multi-use trails that would connect to the existing trail system. Therefore, the proposed project is consistent with this goal.
Goal 4: Increase person and goods movement and travel choices within the transportation system.	**Not Applicable.** This strategy calls on SCAG to increase person and goods movement and travel choices across the transportation system. The proposed project would not interfere with this goal.
Goal 5: Reduce greenhouse gas emissions and improve air quality.	**Consistent.** The project would result in criteria air pollutant and GHG emissions during construction and operation. However, emissions would be nominal. Moreover, the proposed project would encourage biking as an alternative mode of transportation that would reduce VMTs and associated GHG emissions. Therefore, the project is consistent with this goal.
Goal 6: Support healthy and equitable communities.	**Consistent.** The project would be consistent with this goal by constructing a public bike park that would facilitate athletic activities (i.e., bike riding), which would aid in supporting healthy and equitable communities.
Goal 7: Adapt to a changing climate and support an integrated regional development pattern and transportation network.	**Not Applicable.** This goal is directed towards SCAG and does not apply to individual development projects. Nevertheless, the project would support this goal by expanding the trail network in the project area.
Goal 8: Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	**Not Applicable.** This goal is directed towards SCAG and does not apply to the proposed project. This strategy calls on SCAG to use new transportation technologies and data-driven solutions to increase efficiency. The proposed project would not interfere with this goal.
Goal 9: Encourage development of diverse housing types in areas that are supported by multiple transportation options.	**Not Applicable.** The proposed project would not include the development of housing. However, the proposed project would develop a bike park in close proximity to existing residential uses, which would provide existing residents with an alternative transportation options (i.e., bike riding).

Strategies	Consistency Assessment
Goal 10: Promote conservation of natural and agricultural lands and restoration of habitats.	**Consistent.** The project site is not currently used for any agricultural uses. Except for the proposed 15 miles of trails and the two programming areas, the remainder of the project site would remain undeveloped. Moreover, disturbed areas of the project site would be revegetated upon completion of the project construction. Therefore, the project is consistent with this goal.
Connect SoCal Strategies	
Strategy 1: Focus growth near destinations and mobility options.	**Consistent**. The proposed project would consist of development of a bike park in close proximity to existing commercial and residential uses. The bike park is intended to serve as a recreational destination for residents and would promote biking as an alternative mode of transportation.
Strategy 2: Promote diverse housing choices.	**Not Applicable.** The proposed project would not include any new housing. It should be noted that the project is being constructed on land designated for open space and would not impede on the development of any potential future housing.
Strategy 3: Leverage technology innovations.	**Not Applicable**. This strategy is directed to SCAG and jurisdictions and does not apply to the proposed project. This strategy aims to promote low emission technologies, improve access to services through technology, and identify ways to incorporate micro power grids into communities. The proposed project would not interfere with this strategy.
Strategy 4: Support implementation of sustainability policies.	**Consistent.** The proposed project would not be connected to any utilities and would utilize vault toilets. As such, the project would result in low water and energy consumption.
Strategy 5: Promote a Green Region.	**Consistent.** Development of the proposed bike park within existing open space would not interfere with regional wildlife connectivity or convert agricultural land. Upon completion of project construction, the project would revegetate disturbed areas within the project site. The proposed project would also improve public accessibility to park space and encourage biking as an alternative mode of transportation that would reduce VMT and GHG emissions. Therefore, the project would support this strategy.

Source: SCAG, 2020.

As shown above in Table Q, the proposed project would not conflict with any proposed goal or strategy in the Connect SoCal 2020. Therefore, the proposed project would be consistent with the Connect SoCal 2020 plan and potential impacts would be less than significant in this regard.

Consistency with Connect SoCal 2024

As detailed above in Section 4.3, the Connect SoCal 2024 was adopted by SCAG on April 4, 2024. However, per SB 375, SCAG and CARB are required to work together until CARB staff conclude that the calculations and quantifications provided would yield accurate estimates of GHG emission reductions. Since CARB staff continue to have significant outstanding concerns about the technical methodology utilized in the Connect SoCal 2024, the current approved RTP/SCS is the Connect SoCal 2020. Consistency with the Connect SoCal 2024 has been included in order to provide a comprehensive consistency analysis.

The Connect SoCal 2024 includes over 90 implementation strategies in order to meet the year 2035 GHG emission reduction targets set for the Southern California region as mandated by SB 375. The implementation strategies are directed toward SCAG and other regional agencies to implement and are not directly applicable to individual development projects. Regardless, the proposed project, which consists of development of a bike park in the nearby proximity to existing commercial and residential uses would conform to and promote many of these implementation strategies by encouraging the use of alternative transportation modes (i.e., bike riding) and providing access to an equitable and active recreational activity area. As such, the proposed project would not conflict with any proposed goal or strategy in the Connect SoCal 2024. The proposed project would be consistent with the Connect SoCal 2024 plan and potential impacts would be less than significant in this regard.

Level of Significance

Less than significant impact.

11.0 REFERENCES

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APPENDIX A

CalEEMod Model Printouts

Santa Clarita Blue Cloud Bike Park Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Santa Clarita Blue Cloud Bike Park
Construction Start Date	10/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	19.6
Location	34.46891648717852, -118.5010731109193
County	Los Angeles-South Coast
City	Santa Clarita
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	3606
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.22

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

City Park	17.2	Acre	17.2	0.00	149,640	149,640	—	—
Other Asphalt Surfaces	123	1000sqft	2.82	0.00	24,600	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.17	10.6	13.8	0.02	2.57	0.63	2,615	0.11	0.04	0.70	2,629
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.72	36.1	34.1	0.07	8.93	4.35	7,990	0.34	0.24	0.10	8,071
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.96	6.78	8.84	0.02	1.50	0.41	1,655	0.07	0.03	0.20	1,663
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.17	1.24	1.61	< 0.005	0.27	0.07	274	0.01	< 0.005	0.03	275
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—	—	—	—	—
Unmit.	No	No	No	No	No	No	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—	—	—	—	—

Unmit.	No	No	No	No	No	No	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	1.17	10.6	13.8	0.02	2.57	0.63	2,615	0.11	0.04	0.70	2,629
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
2024	3.72	36.1	34.1	0.07	8.93	4.35	7,990	0.34	0.24	0.10	8,071
2025	3.47	10.6	13.7	0.02	2.57	0.63	2,608	0.11	0.04	0.02	2,621
Average Daily	—	—	—	—	—	—	—	—	—	—	—
2024	0.52	5.08	4.80	0.01	0.99	0.41	1,067	0.05	0.03	0.18	1,076
2025	0.96	6.78	8.84	0.02	1.50	0.39	1,655	0.07	0.02	0.20	1,663
Annual	—	—	—	—	—	—	—	—	—	—	—
2024	0.10	0.93	0.88	< 0.005	0.18	0.07	177	0.01	< 0.005	0.03	178
2025	0.17	1.24	1.61	< 0.005	0.27	0.07	274	0.01	< 0.005	0.03	275

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.20	2.80	11.8	0.03	2.21	0.62	2,899	0.20	0.09	8.87	2,940
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.19	2.88	10.8	0.03	2.21	0.62	2,798	0.20	0.09	0.23	2,831

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.57	0.71	4.09	0.01	0.92	0.25	1,125	0.13	0.04	1.64	1,142
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.13	0.75	< 0.005	0.17	0.04	186	0.02	0.01	0.27	189
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	150	55.0	—	—	—	—	—
Unmit.	No	No	No	No	No	No	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	150	55.0	—	—	—	—	—
Unmit.	No	No	No	No	No	No	—	—	—	—	—
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	3,000
Unmit.	—	—	—	—	—	—	—	—	—	—	No

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.79	0.80	9.43	0.02	2.14	0.55	2,382	0.10	0.09	8.87	2,419
Area	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	0.79	< 0.005	< 0.005	—	0.80
Waste	—	—	—	—	—	—	0.80	0.08	0.00	—	2.79
Refrig.	—	—	—	—	—	—	—	—	—	0.00	0.00

Off-Road	0.22	2.00	2.40	0.01	0.07	0.06	515	0.02	< 0.005	—	517
Total	1.20	2.80	11.8	0.03	2.21	0.62	2,899	0.20	0.09	8.87	2,940
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.78	0.88	8.44	0.02	2.14	0.55	2,281	0.10	0.09	0.23	2,310
Area	0.19	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	0.79	< 0.005	< 0.005	—	0.80
Waste	—	—	—	—	—	—	0.80	0.08	0.00	—	2.79
Refrig.	—	—	—	—	—	—	—	—	—	0.00	0.00
Off-Road	0.22	2.00	2.40	0.01	0.07	0.06	515	0.02	< 0.005	—	517
Total	1.19	2.88	10.8	0.03	2.21	0.62	2,798	0.20	0.09	0.23	2,831
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.33	0.38	3.74	0.01	0.91	0.23	989	0.04	0.04	1.64	1,004
Area	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	0.79	< 0.005	< 0.005	—	0.80
Waste	—	—	—	—	—	—	0.80	0.08	0.00	—	2.79
Refrig.	—	—	—	—	—	—	—	—	—	0.00	0.00
Off-Road	0.05	0.33	0.35	< 0.005	0.01	0.01	134	0.01	< 0.005	—	135
Total	0.57	0.71	4.09	0.01	0.92	0.25	1,125	0.13	0.04	1.64	1,142
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.07	0.68	< 0.005	0.17	0.04	164	0.01	0.01	0.27	166
Area	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	0.13	< 0.005	< 0.005	—	0.13
Waste	—	—	—	—	—	—	0.13	0.01	0.00	—	0.46
Refrig.	—	—	—	—	—	—	—	—	—	0.00	0.00

Off-Road	0.01	0.06	0.06	< 0.005	< 0.005	< 0.005	22.2	< 0.005	< 0.005	—	22.3
Total	0.10	0.13	0.75	< 0.005	0.17	0.04	186	0.02	0.01	0.27	189

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.65	36.0	32.9	0.05	1.60	1.47	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	5.11	2.63	—	—	—	—	—
Onsite truck	< 0.005	0.06	0.04	< 0.005	1.99	0.20	15.6	< 0.005	< 0.005	< 0.005	16.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.99	0.90	< 0.005	0.04	0.04	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	0.14	0.07	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.01	0.43	< 0.005	< 0.005	< 0.005	0.45
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.18	0.16	< 0.005	0.01	0.01	24.0	< 0.005	< 0.005	—	24.1

Dust From Material Movement	—	—	—	—	0.03	0.01	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	0.07	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.10	1.12	0.00	0.23	0.05	234	0.01	0.01	0.03	237
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.01	< 0.005	6.51	< 0.005	< 0.005	0.01	6.60
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	1.08	< 0.005	< 0.005	< 0.005	1.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.52	34.3	30.2	0.06	1.45	1.33	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	2.39	0.95	—	—	—	—	—
Onsite truck	< 0.005	0.06	0.04	< 0.005	1.99	0.20	15.6	< 0.005	< 0.005	< 0.005	16.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	3.29	2.89	0.01	0.14	0.13	633	0.03	0.01	—	635
Dust From Material Movement	—	—	—	—	0.23	0.09	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	0.18	0.02	1.49	< 0.005	< 0.005	< 0.005	1.57
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.60	0.53	< 0.005	0.03	0.02	105	< 0.005	< 0.005	—	105
Dust From Material Movement	—	—	—	—	0.04	0.02	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	0.03	< 0.005	0.25	< 0.005	< 0.005	< 0.005	0.26
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.11	1.28	0.00	0.26	0.06	268	0.01	0.01	0.03	271
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.44	0.53	0.01	0.31	0.09	1,108	0.06	0.18	0.07	1,163
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.02	0.01	26.0	< 0.005	< 0.005	0.05	26.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.14	0.05	< 0.005	0.03	0.01	106	0.01	0.02	0.11	112

Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	< 0.005	< 0.005	4.31	< 0.005	< 0.005	0.01	4.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	0.01	< 0.005	0.01	< 0.005	17.6	< 0.005	< 0.005	0.02	18.5

3.5. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	0.46	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	0.06	0.04	< 0.005	1.99	0.20	15.6	< 0.005	< 0.005	< 0.005	16.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.64	0.74	< 0.005	0.03	0.03	136	0.01	< 0.005	—	137
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.01	0.88	< 0.005	< 0.005	< 0.005	0.93
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.14	< 0.005	0.01	< 0.005	22.5	< 0.005	< 0.005	—	22.6
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	0.02	< 0.005	0.15	< 0.005	< 0.005	< 0.005	0.15
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.06	0.64	0.00	0.13	0.03	134	0.01	< 0.005	0.01	135

Vendor	< 0.005	0.08	0.04	< 0.005	0.02	0.01	64.5	< 0.005	0.01	< 0.005	67.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.01	< 0.005	7.71	< 0.005	< 0.005	0.01	7.81
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.66	< 0.005	< 0.005	< 0.005	3.82
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	1.28	< 0.005	< 0.005	< 0.005	1.29
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.61	< 0.005	< 0.005	< 0.005	0.63
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	0.40	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	0.05	0.04	< 0.005	1.99	0.20	15.2	< 0.005	< 0.005	0.02	16.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	0.40	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	0.06	0.04	< 0.005	1.99	0.20	15.3	< 0.005	< 0.005	< 0.005	16.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	6.21	7.76	0.01	0.26	0.24	1,426	0.06	0.01	—	1,431
Onsite truck	< 0.005	0.03	0.02	< 0.005	1.12	0.11	9.08	< 0.005	< 0.005	0.01	9.56

Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	1.13	1.42	< 0.005	0.05	0.04	236	0.01	< 0.005	—	237
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	0.20	0.02	1.50	< 0.005	< 0.005	< 0.005	1.58
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.70	0.00	0.13	0.03	138	0.01	< 0.005	0.51	140
Vendor	< 0.005	0.07	0.04	< 0.005	0.02	0.01	63.5	< 0.005	0.01	0.17	66.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.05	0.59	0.00	0.13	0.03	131	0.01	< 0.005	0.01	133
Vendor	< 0.005	0.08	0.04	< 0.005	0.02	0.01	63.5	< 0.005	0.01	< 0.005	66.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.37	0.00	0.08	0.02	79.1	< 0.005	< 0.005	0.13	80.2
Vendor	< 0.005	0.05	0.02	< 0.005	0.01	< 0.005	37.8	< 0.005	0.01	0.04	39.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	0.01	0.07	0.00	0.01	< 0.005	13.1	< 0.005	< 0.005	0.02	13.3
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	6.25	< 0.005	< 0.005	0.01	6.53
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	7.45	9.98	0.01	0.35	0.32	1,511	0.06	0.01	—	1,517
Paving	0.37	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.41	0.55	< 0.005	0.02	0.02	82.8	< 0.005	< 0.005	—	83.1
Paving	0.02	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.10	< 0.005	< 0.005	< 0.005	13.7	< 0.005	< 0.005	—	13.8
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.88	0.00	0.20	0.05	197	0.01	0.01	0.02	199
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.01	< 0.005	10.9	< 0.005	< 0.005	0.02	11.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	1.81	< 0.005	< 0.005	< 0.005	1.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	1.14	< 0.005	0.03	0.03	134	0.01	< 0.005	—	134
Architectural Coatings	3.33	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	0.06	< 0.005	< 0.005	< 0.005	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	0.18	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.03	0.01	26.2	< 0.005	< 0.005	< 0.005	26.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	1.46	< 0.005	< 0.005	< 0.005	1.48
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.24	< 0.005	< 0.005	< 0.005	0.24
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
City Park	0.79	0.80	9.43	0.02	2.14	0.55	2,382	0.10	0.09	8.87	2,419
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total	0.79	0.80	9.43	0.02	2.14	0.55	2,382	0.10	0.09	8.87	2,419
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
City Park	0.78	0.88	8.44	0.02	2.14	0.55	2,281	0.10	0.09	0.23	2,310
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.78	0.88	8.44	0.02	2.14	0.55	2,281	0.10	0.09	0.23	2,310
Annual	—	—	—	—	—	—	—	—	—	—	—
City Park	0.06	0.07	0.68	< 0.005	0.17	0.04	164	0.01	0.01	0.27	166
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.06	0.07	0.68	< 0.005	0.17	0.04	164	0.01	0.01	0.27	166

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.17	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.17	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—
Total	0.19	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.03	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	0.79	< 0.005	< 0.005	—	0.80
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	0.79	< 0.005	< 0.005	—	0.80
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	0.79	< 0.005	< 0.005	—	0.80
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	0.79	< 0.005	< 0.005	—	0.80
Annual	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	0.13	< 0.005	< 0.005	—	0.13
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	0.13	< 0.005	< 0.005	—	0.13

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	0.80	0.08	0.00	—	2.79
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	0.80	0.08	0.00	—	2.79
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	0.80	0.08	0.00	—	2.79
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	0.80	0.08	0.00	—	2.79
Annual	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	0.13	0.01	0.00	—	0.46
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	0.13	0.01	0.00	—	0.46

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	0.00	0.00

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Skid Steer Loaders	0.06	0.86	1.51	< 0.005	0.03	0.02	245	0.01	< 0.005	—	246
Generator Sets	0.10	0.79	0.52	< 0.005	0.03	0.03	104	< 0.005	< 0.005	—	104
Off-Highway Trucks	0.06	0.34	0.37	< 0.005	0.01	0.01	167	0.01	< 0.005	—	167
Total	0.22	2.00	2.40	0.01	0.07	0.06	515	0.02	< 0.005	—	517
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Skid Steer Loaders	0.06	0.86	1.51	< 0.005	0.03	0.02	245	0.01	< 0.005	—	246
Generator Sets	0.10	0.79	0.52	< 0.005	0.03	0.03	104	< 0.005	< 0.005	—	104
Off-Highway Trucks	0.06	0.34	0.37	< 0.005	0.01	0.01	167	0.01	< 0.005	—	167
Total	0.22	2.00	2.40	0.01	0.07	0.06	515	0.02	< 0.005	—	517
Annual	—	—	—	—	—	—	—	—	—	—	—
Skid Steer Loaders	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	1.33	< 0.005	< 0.005	—	1.34
Generator Sets	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	1.22	< 0.005	< 0.005	—	1.23
Off-Highway Trucks	0.01	0.04	0.05	< 0.005	< 0.005	< 0.005	19.6	< 0.005	< 0.005	—	19.7
Total	0.01	0.06	0.06	< 0.005	< 0.005	< 0.005	22.2	< 0.005	< 0.005	—	22.3

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	10/1/2024	10/14/2024	5.00	10.0	—
Grading	Grading	10/15/2024	12/2/2024	5.00	35.0	—
Building Construction	Building Construction	12/3/2024	10/31/2025	5.00	239	—
Paving	Paving	11/3/2025	11/28/2025	5.00	20.0	—
Architectural Coating	Architectural Coating	12/1/2025	12/26/2025	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37

Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	3.00	1.00	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	15.7	20.0	HHDT
Grading	Onsite truck	3.00	1.00	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	10.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	2.00	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	3.00	1.00	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2

Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.00	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	5,250	1,750	7,380

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	15.0	0.00	—
Grading	4,400	—	105	0.00	—
Paving	0.00	0.00	0.00	0.00	2.82

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
City Park	0.00	0%
Other Asphalt Surfaces	2.82	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	532	0.03	< 0.005
2025	0.00	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
City Park	40.0	200	200	31,291	600	2,999	2,999	469,265
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	5,250	1,750	7,380

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
City Park	0.00	349	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
City Park	0.00	156,000
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
City Park	1.48	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37
Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Off-Highway Trucks	Diesel	Average	1.00	1.00	376	0.38

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	21.6	annual days of extreme heat
Extreme Precipitation	5.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	21.8	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	93.6

AQ-PM	45.4
AQ-DPM	6.24
Drinking Water	85.7
Lead Risk Housing	17.0
Pesticides	0.00
Toxic Releases	36.7
Traffic	26.9
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	2.11
Haz Waste Facilities/Generators	7.35
Impaired Water Bodies	12.5
Solid Waste	0.00
Sensitive Population	—
Asthma	12.6
Cardio-vascular	33.3
Low Birth Weights	35.0
Socioeconomic Factor Indicators	—
Education	32.6
Housing	27.8
Linguistic	28.8
Poverty	36.5
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract

Economic	—
Above Poverty	80.803285
Employed	46.86256897
Median HI	72.73193892
Education	—
Bachelor's or higher	51.84139612
High school enrollment	18.81175414
Preschool enrollment	17.40023098
Transportation	—
Auto Access	90.86359553
Active commuting	19.06839471
Social	—
2-parent households	97.36943411
Voting	48.71038111
Neighborhood	—
Alcohol availability	69.31861927
Park access	2.194276915
Retail density	84.10111639
Supermarket access	18.11882459
Tree canopy	27.46054151
Housing	—
Homeownership	96.99730527
Housing habitability	83.11305017
Low-inc homeowner severe housing cost burden	39.89477736
Low-inc renter severe housing cost burden	72.47529834
Uncrowded housing	44.45014757
Health Outcomes	—

Insured adults	63.64686257
Arthritis	53.0
Asthma ER Admissions	90.0
High Blood Pressure	79.0
Cancer (excluding skin)	27.6
Asthma	65.7
Coronary Heart Disease	63.8
Chronic Obstructive Pulmonary Disease	59.8
Diagnosed Diabetes	79.4
Life Expectancy at Birth	33.9
Cognitively Disabled	52.2
Physically Disabled	62.2
Heart Attack ER Admissions	36.2
Mental Health Not Good	62.3
Chronic Kidney Disease	79.8
Obesity	59.2
Pedestrian Injuries	19.6
Physical Health Not Good	67.2
Stroke	75.8
Health Risk Behaviors	—
Binge Drinking	9.5
Current Smoker	60.5
No Leisure Time for Physical Activity	81.7
Climate Change Exposures	—
Wildfire Risk	81.4
SLR Inundation Area	0.0
Children	71.1

Elderly	68.4
English Speaking	69.6
Foreign-born	32.8
Outdoor Workers	62.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	73.8
Traffic Density	22.9
Traffic Access	23.0
Other Indices	—
Hardship	40.8
Other Decision Support	—
2016 Voting	57.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	13.0
Healthy Places Index Score for Project Location (b)	59.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	No Demolition required. Building construction reduced from 370 days to 239 days
Operations: Vehicle Data	Trip Rate set to 40 weekday trips and 200 weekend trips
Operations: Off-Road Equipment	A skid steer loader (12 days per year) and a generator (26 days per year) added to operations 8 hours per day. 1 Off-Hwy truck operating 1 hour per day and 52 days per year also added to account for weekly water deliveries.
Construction: Trips and VMT	10 Worker trips and 2 vendor truck trips per day added to Building Construction and 2 worker trips added to Painting
Operations: Water and Waste Water	One water truck delivery per week of 3,000 gallons or 156,000 gallons per year

APPENDIX B

EMFAC2021 Model Printouts

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Los Angeles (SC)
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	**Calendar**	**Vehicle Category**	**Model Year**	**Speed**	**Fuel**	**Population**	**Total VMT**	**Trips**	**Fuel Consumption**
Los Angeles (!	2024	LDA	Aggregate	Aggregate	Gasoline	3312060	130838318	15395682	4512
Los Angeles (!	2024	LDT1	Aggregate	Aggregate	Gasoline	311829	11357947	1373845	469
Los Angeles (!	2024	LDT2	Aggregate	Aggregate	Gasoline	1566130	64695889	7373138	2726
Los Angeles (!	2024	MCY	Aggregate	Aggregate	Gasoline	146992	969261	293984	24
Los Angeles (!	2024	MDV	Aggregate	Aggregate	Gasoline	941105	35897503	4364748	1858
Los Angeles (!	2024	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	3824	129079	54562	15
Los Angeles (!	2024	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	3907	134105	55747	15
Los Angeles (!	2024	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	11998	410120	171216	46
Los Angeles (!	2024	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	2969	164154	42373	18
Los Angeles (!	2024	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	4737	196364	54762	22
Los Angeles (!	2024	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	10509	458727	121479	52
Los Angeles (!	2024	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	9468	406400	109454	46
Los Angeles (!	2024	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	4263	203758	49285	23
Los Angeles (!	2024	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	130	6800	1505	1
Los Angeles (!	2024	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	1624	98742	18776	10
Los Angeles (!	2024	T6 Public Class 5	Aggregate	Aggregate	Diesel	480	16864	2461	2
Los Angeles (!	2024	T7 Single Concrete/Transi	Aggregate	Aggregate	Diesel	712	48780	6706	8
Los Angeles (!	2024	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	1959	113612	18457	19
Los Angeles (!	2024	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	1156	75005	5315	29
Los Angeles (!	2024	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	14354	1100935	208570	179

Worker (Autos) vehicle miles per day	243,758,918	9,588	1,000 gall per day
Workers (Autos) Avg Miles per gallon	**25.4**	9,588,025	gallons per day
Diesel Truck vehicle miles per day	3,563,446	485	1,000 gall per day
Diesel Truck Fleet Avg Miles per gallon	**7.3**	485,140	gallons per day

APPENDIX B:
BIOLOGICAL RESOURCES TECHNICAL REPORT

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Michael Baker
INTERNATIONAL

Biological Resources Technical Report

Haskell Canyon Bike Park

Santa Clarita, California

April 23, 2025

Prepared for:

City of Santa Clarita
23920 Valencia Boulevard, Suite 120
Santa Clarita, California 91355
Tel. (661) 284-1414
Contact: Amber Rodriguez

Prepared by:

Michael Baker International
5 Hutton Centre Drive Suite 500
Santa Ana, CA 92707
949-330-4147
Contact: Stephen Anderson
Stephen.Anderson@mbakerintl.com
JN 195477

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EXECUTIVE SUMMARY

This report contains the findings of Michael Baker International's biological resources assessment for the proposed Haskell Canyon Bike Park Project (project) located in the City of Santa Clarita, California. Michael Baker biologists conducted a field survey/habitat assessment of the project site on February 13 and 14, 2024. The field survey was conducted to characterize existing site conditions and assess the potential for special-status biological resources to occur within the project site that could pose a constraint to implementation of the proposed project.[1] Any areas with steep or unsafe terrain were not accessed and were examined with binoculars from within the project site.

The project site is approximately 380.82 acres in size and comprises mostly natural vegetation communities. Six (6) vegetation communities and land cover types were observed within the project site: black sage scrub, disturbed black sage scrub, scrub oak woodland, chaparral, non-native grassland, and developed/disturbed.

No special-status plant species were observed during the field survey. Based on the results of the literature review and the field survey, Michael Baker determined that the native vegetation communities within the project site have a moderate or high potential to support three (3) special-status plant species: club-haired mariposa-lily (*Calochortus clavatus* var. *clavatus*; California Rare Plant Rank [CRPR] 4.3), slender mariposa-lily (*Calochortus clavatus* var. *gracilis*; CRPR 1B.2), and short-jointed beavertail (*Opuntia basilaris* var. *brachyclada*; CRPR 1B.2). All remaining special-status plant species identified by the California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) either have a low potential to occur or are not expected to occur within the project site based on existing site conditions and a review of specific habitat requirements, occurrence records, and known distributions. Species with a CRPR of 4 or 3 are generally not evaluated for potential significant impacts under the California Environmental Quality Act (CEQA) and generally do not require additional permitting or mitigation for impacts. However, species that can be shown to meet the criteria for endangered, rare, or threatened status under CEQA Section 15380(d) or that can be shown to be regionally rare or unique as defined in CEQA Section 15125(c) must be fully analyzed in a CEQA document. Impacts to any species with a CRPR rank of 1 or 2 would require mitigation.

One (1) special-status wildlife species was observed during the field survey: Lawrence's goldfinch (*Spinus lawrencei*; US Fish and Wildlife Service's [USFWS] Bird of Conservation Concern). Based on the results of the literature review and the field survey and a review of specific habitat requirements, occurrence records, and known distributions of the special-status wildlife species identified in the literature review,

1 As used in this report, "special-status" refers to species that are either federally/State-listed, proposed, or candidates; species that have been designated a California Rare Plant Rank by the California Native Plant Society; species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife; or State/locally rare vegetation communities.

Michael Baker determined that the project site has a moderate or high potential to support four (4) special-status wildlife species: southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*; California Department of Fish and Wildlife's [CDFW] Watch List [WL]), Bell's sparrow (*Artemisiospiza belli belli*; WL), coastal whiptail (*Aspidoscelis tigris stejnegeri*; CDFW species of special concern [SSC]), and coast horned lizard (*Phrynosoma blainvillii*; SSC). All remaining special-status wildlife species identified by the CNDDB either have a low potential to occur or are not expected to occur within the project site based on existing site conditions and a review of specific habitat requirements, occurrence records, and known distributions. Impacts to these species would require mitigation.

Eleven (11) potentially state or federal jurisdictional features were observed within the project site. Impacts to these features may potentially occur from the proposed project.

The project is not located within any area covered by natural community conservation plan or habitat conservation plan documents, including a multiple species conservation plan or multiple species habitat conservation plan. In addition, the project site is not located within any identified Significant Ecological Areas designated within Los Angeles County. The project is also not located within any USFWS designated critical habitat.

1.0 INTRODUCTION

1.1 Background and Purpose

This report contains the findings of Michael Baker International's biological resources assessment for the proposed Haskell Canyon Bike Park Project (project or project site). Michael Baker biologists conducted a field survey/habitat assessment of the project site on February 13 and 14, 2024. The field survey was conducted to characterize existing site conditions and assess the potential for special-status biological resources to occur within the project site, defined as the area within which all project-related disturbances would occur that could pose a constraint to implementation of the proposed project. Special attention was given to assessing the suitability of the habitat within the project site and its potential to support special-status biological resources that were identified as potentially occurring in the vicinity of the project site by the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database RareFind 5 (CNDDB 2024a), the California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Plants of California (CIRP; CNPS 2024), and the US Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) database (USFWS 2024a).

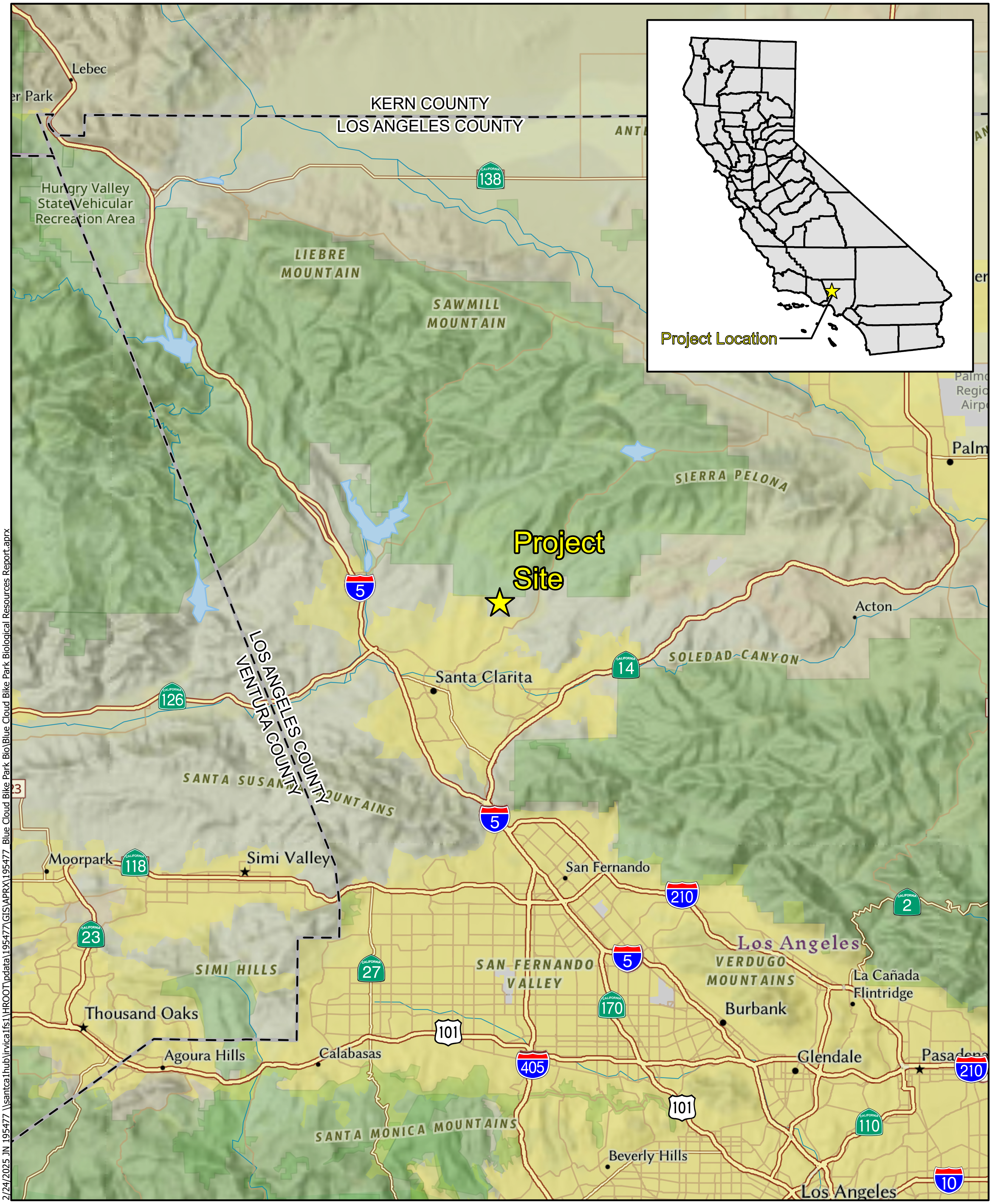
The submittal of this report is intended to satisfy the biological resource needs of California Environmental Quality Act (CEQA) process. The City of Santa Clarita is requesting administrative and discretionary action to approve the implementation of a recreational use project in the City of Santa Clarita (City), Los Angeles County (County), California.

1.2 Project Description

The project would develop a bike park that would consist of approximately 15 miles of trails interspersed throughout the project site and two activity/programming areas – the Haskell Bike Park Core (Haskell Core) and the Blue Cloud Trailhead. Trail types for all skill levels provided within the Haskell Canyon Bike Park include approximately 3.7 miles of perimeter and climbing trails, approximately 5.5 miles of downhill bike trails, and approximately 5 miles of multi-use trails. The proposed trail widths would range 4 to 6 feet wide. The project would also maintain approximately 1.6 miles of existing multi-use trails. The Haskell Core, located on the western portion of the project site, would include an event plaza with picnic tables, pump tracks, a dual slalom course, progressive jumplines, and a progressive skills area. Event/spectator areas would be provided adjacent to the main activity areas. Other amenities within the Haskell Core would include shade structures at the start zones of the dual slalom course and the progressive jumplines, two vault restrooms, a bike repair station, a rest area with benches and shade structure, and cargo containers for storage areas. Parking for the Haskell Core would be provided within a 40-space parking lot, which would include a parking/emergency turnaround, four American Disabilities Act (ADA) parking spaces, and unstructured space for four food trucks. The Blue Cloud Trailhead area would also include space for potential future landscape restoration, a multi-use trailhead, a single vault restroom, a bike repair station, and the Saddle Trail Hub (meeting space for riders with a shade structure). Parking for the Blue Cloud Trailhead would be provided within an unstructured parking area and along Blue Cloud Road.

1.3 Project Site Location

The 380.82-acre project site is generally located roughly 6 miles east of Interstate 5 and roughly 5 miles north of State Route 14 in the City of Santa Clarita, Los Angeles County, California (Figure 1, *Regional Vicinity*). The project site is depicted in Section 31, Township 5 North, Range 15 West on the US Geological Survey (USGS) *Mint Canyon, California* 7.5-minute quadrangle map and Section 36, Township 5 North, Range 16 West on the USGS *Newhall, California* 7.5-minute quadrangle map (Figure 2, *Site Vicinity*). Specifically, the project site is located within the Haskell Canyon Open Space south of the Angeles National Forest, north of Copper Hill Drive, east of City Highline Motorway Fire Road adjacent to Haskell Canyon Wash, and northwest of Blue Cloud Road, which bisects the project site in a northwesterly direction. The project site is primarily located on Assessor's Parcel Numbers 2813-010-273, 2813-010-274, 2813-010-275, 2813-010-276, 2813-010-900, 2813-010-901, 2813-010-902, 2813-025-270, and 3244-031-901 at latitude 34.476908° and longitude -118.499045° (Figure 3, *Project Site*).



0 3 6 Miles

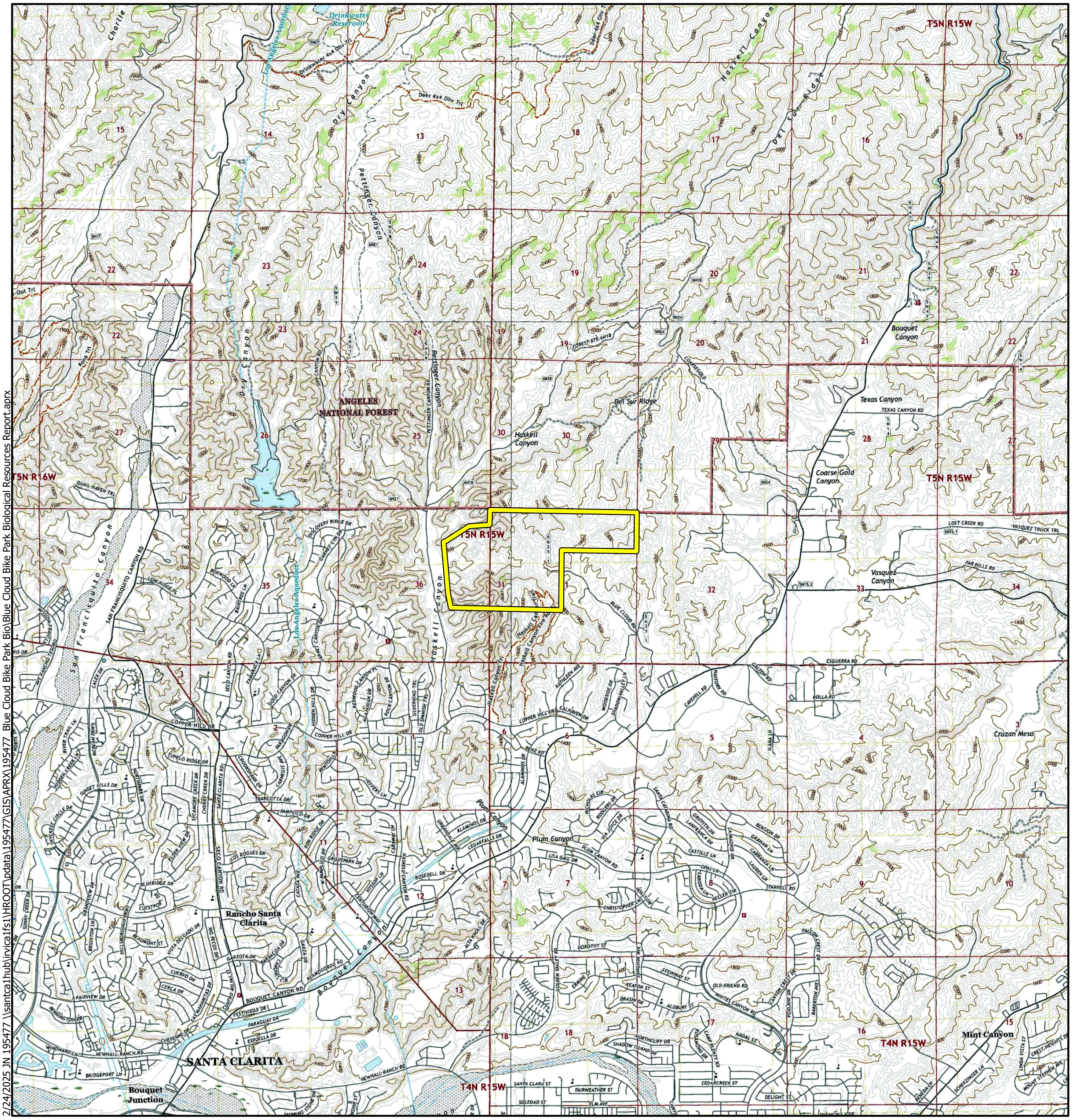
Source: Esri, ArcGIS Online, USGS, Los Angeles County

Michael Baker INTERNATIONAL

HASKELL CANYON BIKE PARK PROJECT
BIOLOGICAL RESOURCES TECHNICAL REPORT

Regional Vicinity

Figure 1



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Legend

Project Site

HASKELL CANYON BIKE PARK PROJECT
BIOLOGICAL RESOURCES TECHNICAL REPORT

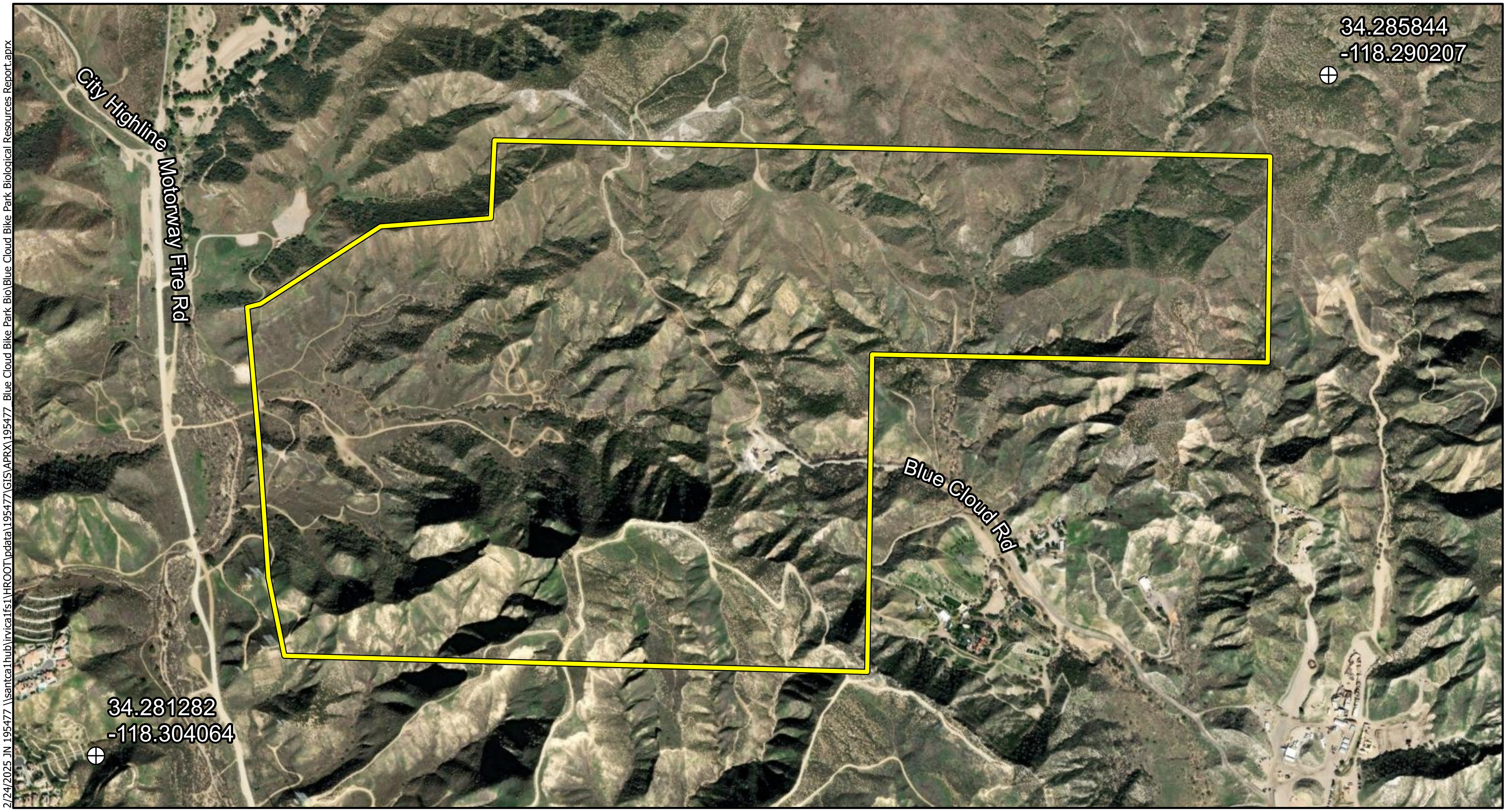
Site Vicinity

Figure 2

Michael Baker INTERNATIONAL

0 0.5 1 Miles

Source: USGS 7.5-Minute topographic quadrangle maps: *Warm Springs Mountain, Green Valley, Newhall, and Mint Canyon, California*



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Reference Point

Project Site

Michael Baker
INTERNATIONAL

0 500 1,000
Feet

Source: Esri, ArcGIS Online, Los Angeles County

HASKELL CANYON BIKE PARK PROJECT
BIOLOGICAL RESOURCES TECHNICAL REPORT

Project Site

Figure 3

2.0 REGULATORY SETTING

2.1 State and/or Federally Listed Plants or Wildlife

2.1.1 State of California Endangered Species Act

In addition to federal laws, the State of California has its own California Endangered Species Act (CESA), enforced by the CDFW. The CESA program maintains a separate listing of species beyond the federal Endangered Species Act (ESA), although the provisions of each act are similar.

State-listed threatened and endangered species are protected under provisions of CESA. Activities that may result in "take" of individuals (defined in CESA as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") are regulated by the CDFW. Habitat degradation or modification is not included in the definition of "take" under CESA. Nonetheless, the CDFW has interpreted "take" to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are fully protected against take, as defined above.

The CDFW has also produced a species of special concern list to serve as a species watch list. Species on this list are either of limited distribution or their habitats have been reduced substantially, such that a threat to their populations may be imminent. Species of special concern may receive special attention during environmental review, but they do not have formal statutory protection.

2.1.2 California Fish and Game Code (Sections 3503, 3503.5, 3511, and 3513)

The CDFW administers the California Fish and Game Code (CFGC). There are particular sections of the CFGC that are applicable to natural resource management. For example, Section 3503 makes it unlawful to destroy any birds' nest or any birds' eggs that are protected under the Migratory Bird Treaty Act (MBTA). Further, any birds in the orders Falconiformes or Strigiformes (birds of prey), such as hawks, eagles, and owls, are protected under Section 3503.5, which makes it unlawful to take, possess, or destroy their nest or eggs. A consultation with the CDFW may be required prior to the removal of any bird of prey nest that may occur in the project site. Section 3511 lists fully protected bird species, where the CDFW is unable to authorize the issuance of permits or licenses to take these species. Pertinent species that are state fully protected include golden eagle (*Aquila chrysaetos*) and white-tailed kite (*Elanus leucurus*). In addition, Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

2.1.3 Native Plant Protection Act

Sections 1900–1913 of the CFGC were developed to preserve, protect, and enhance rare and endangered plants in the State of California. The act requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of the Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use which would adversely impact listed plants. This allows the CDFW to salvage listed plant species that would otherwise be destroyed.

2.1.4 Federal Endangered Species Act

As defined within the federal ESA of 1973, an endangered species is any animal or plant listed by regulation as being in danger of extinction throughout all or a significant portion of its geographical range. A threatened species is any animal or plant that is likely to become endangered within the foreseeable future throughout all or a significant portion of its geographical range. Without a special permit, federal law prohibits the “take” of any individuals or habitat of federally listed species. Under Section 9 of the ESA, take is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” The term “harm” has been clarified to include “any act which actually kills or injures fish or wildlife and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.” ESA enforcement is administered by the USFWS.

Under the ESA definition, “Critical Habitat” refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species’ conservation and if the occupied areas are inadequate to ensure the species’ recovery. If a project may result in take or adverse modification to a species’ designated Critical Habitat and the project has a federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a federal nexus may include projects that occur on federal lands, require federal permits [e.g., Clean Water Act Section 404 permit], or receive any federal oversight or funding. If there is a federal nexus, then the federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the ESA.

Whenever federal agencies authorize, fund, or carry out actions that may adversely modify or destroy Critical Habitat, they must consult with the USFWS under Section 7 of the federal ESA. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing uses federal funds, or requires federal authorization or permits (i.e., funding from the Federal Highway Administration or a permit from the US Army Corps of Engineers [Corps]).

2.1.5 Migratory Bird Treaty Act

Pursuant to the MBTA (16 U.S. Code 703) of 1918, as amended in 1972, federal law prohibits the taking of migratory birds or their nests or eggs (16 U.S. Code 703; 50 Code of Federal Regulations 10, 21). The statute states:

> "Unless and except as permitted by regulations made as hereinafter provided in this subchapter, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill…any migratory bird, any part, nest, or egg of any such bird...included in the terms of the [Migratory Bird] conventions…"

The MBTA covers the taking of any nests or eggs of migratory birds, except as allowed by permit pursuant to 50 Code of Federal Regulations, Part 21. Disturbances causing nest abandonment and/or loss of reproductive effort (i.e., killing or abandonment of eggs or young) may also be considered a "take." This regulation seeks to protect migratory birds and active nests.

In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). Six families of raptors occurring in North America were included in the amendment: Accipitridae (kites, hawks, and eagles); Cathartidae (New World vultures); Falconidae (falcons and caracaras); Pandionidae (ospreys); Strigidae (typical owls); and Tytonidae (barn owls). The provisions of the 1972 amendment to the MBTA protects all species and subspecies of the families listed above. The MBTA protects over 800 species including geese, ducks, shorebirds, raptors, songbirds, and many relatively common species.

2.2 Jurisdictional Waters of the United States/State, Including Wetlands

There are three key agencies that regulate activities within inland lakes, streams, wetlands, and riparian areas in California. The Corps regulates activities that result in the discharge of dredged or fill material into waters of the U.S. (WoUS), including wetlands, pursuant to Section 404 of Clean Water Act and Section 10 of the Rivers and Harbors Act. Of the state agencies, the Regional Water Quality Control Board (Regional Board) regulates discharges to waters of the State, including wetlands, pursuant to Section 401 of the Clean Water Act, Section 13263 of the California Porter-Cologne Water Quality Control Act, and State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State; and, the CDFW regulates alterations to lakes, streambeds, and riparian habitats pursuant to Section 1600 et seq. of the CFGC.

2.3 California Environmental Quality Act

CEQA provides for the protection of the environment within the State of California by establishing state policy to prevent significant, avoidable damage to the environment through the use of alternatives or mitigation measures for projects. It applies to actions directly undertaken, financed, or permitted by state lead agencies. If a project is determined to be subject to CEQA, the lead agency will be required to conduct an initial study; if the initial study determines that the project may have significant impacts on the environment, the lead agency will subsequently be required to prepare an environmental impact report. A finding of non-significant effects will require either a negative declaration or a mitigated negative declaration instead of an environmental impact report.

Section 15380 of the CEQA Guidelines independently defines “endangered” species as those whose survival and reproduction in the wild are in immediate jeopardy, while “rare” species are defined as those who are in such low numbers that they could become endangered if their environment worsens.

3.0 ENVIRONMENTAL SETTING

3.1 Regional Context

The project site is located within an undeveloped plot of land just south of the Angeles National Forest. The topography of the project site is mountainous with generally moderate to steep slopes throughout. The project site is at an elevation range of approximately 1,450 to 1,920 feet above mean sea level (amsl). The topographic high point is within the southern portion of the project site, along Kathleen Avenue. The topographic low point is at the western end of the project site, along Haskell Canyon Wash.

3.2 Climate

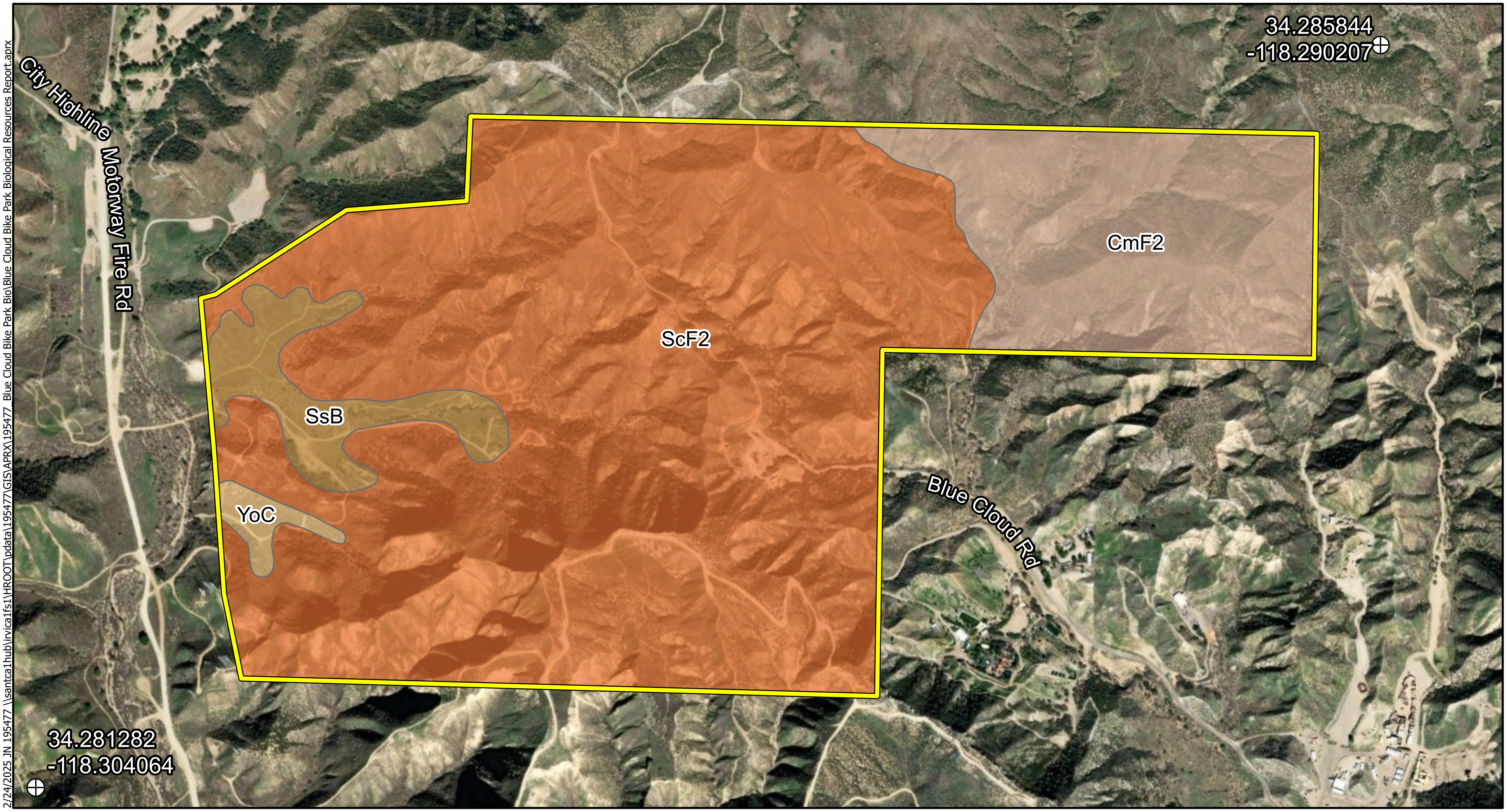
The Santa Clara River Watershed, in which the project site is located, is characterized by a year-round Mediterranean climate, or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Most of the precipitation occurs between November and March in the form of rain. The climatological cycle of the region results in higher surface water flows in the spring and early summer and lower flows during the dry season. Winter and spring floods generated by storms are not uncommon in wet years and generally occur from December to March. Similarly, during the dry season, infrequent summer storms can cause torrential floods in local streams and usually occur from July through September.

3.3 Soils

According to the *Custom Soil Resource Report for Antelope Valley Area, California* (US Department of Agriculture [USDA] 2024a), the project site is underlain by four soil map units: Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded (CmF2); Saugus loam, 30 to 50 percent slopes, eroded (ScF2); Sorrento loam, 2 to 5 percent slopes (SsB); and Yolo loam, 2 to 9 percent slopes (YoC) (refer to Figure 4: *USDA Soils*). Michael Baker also reviewed the *Hydric Soils List for California* (USDA 2024b) to preliminarily verify whether the soil map units listed above were classified as a "hydric soil" in the Antelope Valley and Los Angeles areas. According to the list, the soil map units that overlie the project site are not listed as hydric.

3.4 Land Uses

On-site land uses consist mainly of recreational mountain biking and hiking. A wide range of existing single-track trails and fire roads are present throughout the project site. Outside of the existing trails, the project site is mainly undeveloped, with some evidence of historical mining activities. The surrounding land use consists mainly of commercial and residential development south of the project site, while undeveloped land associated with the Angeles National Forest and the Castaic Lake State Recreation Area is present north, west, and east of the project site.



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Legend

- Reference Point
- Project Site
- CmF2 — Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded
- ScF2 — Saugus loam, 30 to 50 percent slopes, eroded
- SsB — Sorrento loam, 2 to 5 percent slopes
- YoC — Yolo loam, 2 to 9 percent slopes

Michael Baker INTERNATIONAL

0 500 1,000 Feet

Source: Esri, ArcGIS Online, Los Angeles County, USDA

HASKELL CANYON BIKE PARK PROJECT
BIOLOGICAL RESOURCES TECHNICAL REPORT

USDA Soils

Figure 4

3.5 Watersheds and Hydrology

The project site is located within the Lower Bouquet Canyon (HUC 180701020202) portion of the Santa Clara River Watershed (HUC 18070102). The project site occurs approximately 0.06 miles east of Haskell Canyon Wash, which is a tributary to the Santa Clara River. The Santa Clara River is a perennial direct tributary to the Pacific Ocean. The Santa Clara River Watershed comprises approximately 1,040,515 acres in Los Angeles County. The watershed is divided into numerous subwatersheds based on flow direction and landscape, all of which ultimately connect to the Santa Clara River. The Santa Clara River is not a Designated River under the National Wild and Scenic Rivers Act.

4.0 METHODS

Michael Baker conducted a thorough literature review and records search to determine which special-status biological resources have the potential to occur on or within the general vicinity of the project site. Subsequently, a general field survey/habitat assessment was conducted to document existing conditions and determine the potential for special-status plant and wildlife species to occur within the project site. No focused surveys for special-status species were conducted.

4.1 Literature Review

Prior to conducting the field survey, literature reviews and records searches were conducted for special-status biological resources potentially occurring on or within the vicinity of the project site, specifically within a 5-mile radius. Previous special-status plant and wildlife species occurrence records within the USGS *Warm Springs Mountain, Newhall, Mint Canyon, Agua Dulce, Sleepy Valley, Burnt Peak, Lake Hughes, Del Sur, and Green Valley, California* 7.5-minute quadrangle maps were determined through a query of the CNDDB (CNDDB 2024a) and the CIRP (CNPS 2024), and for the project region in IPaC (USFWS n.d.). Current conservation status of species was verified through lists and resources provided by the CDFW, specifically the *Special Animals List* (CNDDB 2024b), *State and Federally Listed Endangered and Threatened Animals of California* (CNDDB 2024d), *Special Vascular Plants, Bryophytes, and Lichens List* (CNDDB 2024c), and *State and Federally Listed Endangered, Threatened, and Rare Plants of California* (CNDDB 2024e).

In addition to the databases and reports referenced above, Michael Baker reviewed available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the project site to understand existing site conditions, confirm previous species observations, and note the extent of any disturbances, if present, that have occurred in or around the project site that would otherwise limit the distribution of special-status biological resources. Standard field guides and texts were reviewed for specific habitat requirements of special-status and common biological resources.

On-site and adjoining soils were identified prior to conducting the field survey using the USDA's *Custom Soil Resource Report for Antelope Valley Area, California* (USDA 2024a). In addition, local geological conditions and historical aerial photographs were reviewed to assess the ecological changes and disturbances that may have occurred within the project site. Aerial photography was reviewed prior to the field survey to locate potential natural corridors and linkages that may support the movement of wildlife through the area using Historic Aerials (Historic Aerials 2024). The literature review provided a baseline from which to inventory the existing biological resources and evaluate the ability of the project site to support special-status biological resources. Additional occurrence records of those species that have been documented on or within the vicinity of the project site were derived from database queries including the Calflora database (Calflora 2024). Additionally, standard field guides, texts, and sources were used, such as species accounts provided by Birds of the World (Billerman et al. 2020) and the USFWS Critical Habitat

Mapper and Environmental Conservation Online System (USFWS 2024b). The CNDDB was used, in conjunction with Geographic Information Systems (GIS) ArcView software, to identify special-status species occurrence records within the USGS *Warm Springs Mountain, Newhall, Mint Canyon, Agua Dulce, Sleepy Valley, Burnt Peak, Lake Hughes, Del Sur, and Green Valley, California* 7.5-minute quadrangle maps. Refer to Section 9 for a complete list of technical references that were reviewed by Michael Baker.

4.2 Field Investigations

Michael Baker biologists John Parent, Anna Jullie, and Stephen Anderson conducted a field survey/habitat assessment on February 13 and 14, 2024, to document the extent and conditions of the vegetation communities occurring within the boundaries of the project site. Vegetation communities preliminarily identified on aerial photographs during the literature review were verified in the field by walking along established single track and fire roads, and off-trail areas when accessible, and noting conditions within the limits of disturbance. Binoculars were used to observe conditions where access was not possible due to steep slopes or other safety concerns. All plant and wildlife species observed during the field survey, as well as dominant plant species within each vegetation community, were recorded in a field notebook.

In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, the overall condition of on-site vegetation, and the presence of potentially regulated jurisdictional features (e.g., streams, flood control channels) were noted within the project site. Michael Baker used GIS ArcView software to digitize the mapped vegetation communities and then transferred these data onto an aerial photograph to further document existing conditions and quantify the acreage of each vegetation community. Table 1 summarizes the field surveys.

TABLE 1. SUMMARY OF SURVEYS AND SURVEY CONDITIONS

Date	Survey Type	Surveyors	Survey Time (start-end)	Weather Conditions (start-end)
02/13/2024	Habitat Assessment	JP, AJ	0800–1345	1-2 mph, 20% cc, 46°F 3-4 mph, 5% cc, 69°F
02/13/2024	Jurisdictional Delineation	AN, MM	N/A	N/A
02/14/2024	Habitat Assessment	JP, AJ, SA	0745–1200	1-2 mph, 20% cc, 47°F 3-5 mph, 50% cc, 68°F
02/14/2024	Jurisdictional Delineation	AN, MM	N/A	N/A
02/15/2024	Jurisdictional Delineation	AN, MM	N/A	N/A

Surveyors: JP – John Parent; AJ – Anna Jullie; SA – Stephen Anderson, AN – April Nakagawa, MM – Megan Minter
Weather Conditions: Temperature (F - Fahrenheit), Skies (cc – cloud cover), Wind (mph – miles per hour)

4.2.1 Vegetation Community and Land Cover Mapping

Vegetation communities occurring within the project site were delineated on a 300-scale (1”=300’) aerial photograph during the field survey and later digitized using the GIS ArcView software to quantify the area of each vegetation community in acres. Vegetation communities occurring within the project site were classified in accordance with vegetation descriptions provided in the *Manual of California Vegetation* (Sawyer, Keeler-Wolf, and Evens 2009) and cross referenced with *Preliminary Descriptions of Terrestrial Natural Communities of California* (Holland 1986).

4.2.2 General Plant Inventory

Plant species observed during the field survey were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unfamiliar plants were photographed in the field and later identified using taxonomic guides. Plant nomenclature used in this report follows the *Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012). In this report, scientific names are provided immediately following common names of plant species (first reference only). All plant species observed are included in Appendix D, Species Observed List. Special-status plant species are discussed below in Section 5.3.1.

4.2.3 General Wildlife Inventory

Wildlife species detected during the field surveys by sight, calls, tracks, scat, or other types of signs were recorded in a field notebook. Field guides used to assist with identification of species during the field surveys included *The Sibley Guide to Birds* (Sibley 2014) for birds, *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2018) for herpetofauna, and *A Field Guide to Mammals of North America* (Reid 2006). Although common names of wildlife species are well standardized, scientific names are provided immediately following common names of wildlife species in this report (first reference only). To the extent possible, nomenclature of birds follows the most recent annual supplement of the American Ornithological Union’s *Checklist of North American Birds* (Chesser et al. 2023); nomenclature of amphibians and reptiles follows *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding* (Crother 2017); and nomenclature of mammals follows the *Bats of the United States and Canada* (Harvey et al. 2011) and *Revised Checklist of North American Mammals North of Mexico* (Bradley et al. 2014).

Amphibian Surveys

General surveys for amphibians were conducted in appropriate habitat only during diurnal activity periods. The intent of these surveys was not to extensively search for individual amphibians, but to ascertain the presence of potential amphibian habitat and the location of amphibians within the project site. The discussions in this document of amphibians potentially present within the project site are based on the habitats used by the species and their geographic ranges. Surveys were conducted on foot in suitable habitat types concurrently with all other surveys within the project site. Habitats were examined for diagnostic amphibian sign such as egg masses, larvae, vocalizations, and direct observations. Surface litter, stones, fallen bark, tree branches, and cracks in mud were examined. Observed amphibian species, as well as diagnostic sign, were recorded in field notes.

Reptile Surveys

General surveys for reptiles were conducted in appropriate habitat only during diurnal activity periods. The intent of these surveys was not to extensively search for individual reptiles, but to ascertain the presence of potential reptile habitat and the location of reptiles within the project site. The discussions in this document of reptiles potentially present within the project site are based on the habitats used by the species and their geographic ranges. Surveys were conducted on foot in suitable habitat types concurrently with all other surveys within the project site. Habitats were examined for diagnostic reptile sign such as eggs, shed skins, scat, tracks, snake prints, lizard tail drag marks, and direct observations. All areas containing potentially suitable habitat were surveyed. While searching for resting reptiles, surface litter, stones, fallen bark, tree branches, and cracks in mud were examined. Observed reptile species, as well as diagnostic sign, were recorded in field notes.

Avian Surveys

General surveys for birds were conducted in appropriate habitat only during diurnal activity periods. The intent of these surveys was not to extensively search for individual birds, but to ascertain the presence of potential bird habitat and the location of birds within the project site. The discussions in this document of birds potentially present within the project site are based on the habitats used by the species and their geographic ranges. Surveys were conducted on foot in suitable habitat types concurrently with all other surveys within the project site. Birds were detected both by direct observations and by vocalizations. All areas containing potentially suitable habitat were surveyed. Bird species observed were recorded in field notes. Special attention was made to identify any bands or markings on avian species. Surveys for the presence of nesting raptors (birds of prey) within and in the vicinity of the project site were conducted simultaneously with other field surveys. Such efforts included directed and incidental observation of raptor nests and owl pellets, and the identification of raptor species flying over the project site. Observed raptor species, as well as diagnostic sign, were recorded in field notes.

Mammal Surveys

General surveys for mammals were conducted in appropriate habitat only during diurnal activity periods. The intent of these surveys was not to extensively search for individual mammals, but to ascertain the presence of potential mammal habitat and the location of mammals within the project site. The discussions in this document of mammals potentially present within the project site are based on the habitats used by the species and their geographic ranges. Surveys were conducted on foot in suitable habitat types concurrently with all other surveys within the project site. Many mammals are nocturnal and secretive, making daytime observations difficult. Therefore, the majority of the information on mammals within the project site comes from diagnostic sign. Habitats were examined for diagnostic mammal sign such as scat, burrows, tracks, dens, browsed vegetation or other feeding sign, hair, nests, bones, vocalizations, and direct observations. All areas containing potentially suitable habitat were surveyed. Methods employed while searching for mammals included searching the ground and adjacent vegetation, locating and following mammal trails, surveying muddy banks of small streams and pools, and noting road kill while traveling to and from the project site. Observed or expected mammal species, as well as diagnostic sign, were recorded in field notes.

4.2.4 Special-Status/Regulated Resources

Special-status resources typically require a more in-depth analysis to determine whether a species has the potential to occur within the project site, and what any potential impacts to that species may be. If a special-status species is determined to have a moderate or high potential to occur within the project site, then additional surveys and/or coordination with the appropriate resource agencies (CDFW, USFWS, etc.) may be required. The determination is done after surveying the project site and identifying all biological resources within the site, and using the literature review results to determine if a species has the potential to occur within the site based on the existing site conditions and known occurrences of a species in the area.

4.2.5 Special-Status Plant Surveys

Special-status plant species surveys are typically done on project sites that have the potential to impact listed plant species, in particular species on the CNPS lists with a California Rare Plant Rank (CRPR) 1A, 1B, 2B, 3, and 4 ranking. CRPR 1A consists of plant species that are presumed extirpated in California and either rare or extinct elsewhere; CRPR 1B consists of plant that are rare, threatened, or endangered in California and elsewhere; and CRPR 2 consists of plants that are rare, threatened, or endangered in California but more common elsewhere. Plants with a CRPR 3 rank require more information to determine their status, while plants with a CRPR 4 rank are determined to have a limited distribution. Based on the results of the literature review and the field surveys, and a review of specific habitat requirements, occurrence records, and known distributions of the special-status plant species identified in the literature review, Michael Baker determined that the project site has a moderate or high potential to support three special-status plant species: club-haired mariposa-lily (*Calochortus clavatus* var. *clavatus*; CRPR 4.3), slender mariposa-lily (*Calochortus clavatus* var. *gracilis*; CRPR 1B.2), and short-jointed beavertail (*Opuntia basilaris* var. *brachyclada*; CRPR 1B.2). Focused surveys were not conducted for these species due to the field surveys being conducted outside of their typical blooming period(s).

4.2.6 Special-Status Wildlife Surveys

As with special-status plant species, some special-status wildlife species require focused surveys to determine if a species is present or absent from the project site. Michael Baker observed one special-status wildlife species during the field survey: Lawrence's goldfinch (*Spinus lawrencei*; USFWS Bird of Conservation Concern [BCC]). Based on the results of the literature review and the field surveys, and a review of specific habitat requirements, occurrence records, and known distributions of the special-status wildlife species identified in the literature review, Michael Baker determined that the project site has a moderate or high potential to support four additional special-status wildlife species: southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*; CDFW Watch List [WL]), Bell's sparrow (*Artemisiospiza belli belli*; WL), coastal whiptail (*Aspidoscelis tigris stejnegeri*; CDFW Species of Special Concern [SSC]), and coast horned lizard (*Phrynosoma blainvillii*; SSC). However, these species do not require focused surveys to be conducted; therefore, special-status species surveys were not conducted for this project.

4.2.7 Jurisdictional Aquatic Resources

Michael Baker certified wetland delineators April Nakagawa and Megan Minter conducted a jurisdictional delineation/field survey of the project site on February 13, 14, and 15, 2024, using the most recent agency-approved methodology, to identify and map the extent of state and federal jurisdictional features (i.e., wetland and non-wetland WoUS, waters of the State, streambed, riparian vegetation) located within the boundaries of the project site. Based on the project's location, potential state and federal wetlands were delineated in accordance with the methods and guidance provided in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Arid West Regional Supplement; USACE 2008), and the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Resources Control Board 2019b).

While in the field, jurisdictional features were recorded on an aerial photograph at a scale of 1"=400' using topographic contours and visible landmarks as guidelines. Data points were recorded in the field using a Garmin Global Positioning System Map 64sx to identify specific widths and length of jurisdictional features and the location of any ordinary high-water mark indicators, photograph points, soil pits, and other pertinent site characteristics. These data were then uploaded as a .shp file and confirmed/refined to ensure accuracy and consistency with hard copy notes and aerial mapping completed in the field. Michael Baker then used Esri ArcGIS Pro software to calculate the total acreage of jurisdictional features and prepare final project figures.

4.2.8 Survey Limitations

Survey limitations consisted mainly of site access limitations due to property rights and steep terrain. A majority of the project site consists of steep slopes and mountainous terrain, which was unsafe to access. In addition, the field survey was conducted late in winter, which is outside of the typical blooming periods for many plant species found in the area.

4.2.9 Regional Connectivity/Wildlife Movement Corridor Assessment

The analysis of wildlife movement corridors associated with the project site and its immediate vicinity is based on information compiled from the literature, analysis of aerial photographs and topographic maps, and direct observations made in the field during survey work. A literature review was conducted that included documents on island biogeography (studies of fragmented and isolated habitat "islands"), reports on wildlife home range sizes and migration patterns, and studies on wildlife dispersal. Wildlife movement studies conducted in Southern California were also reviewed. The relationship of the project site to large open space areas in the immediate vicinity (i.e., Angeles National Forest) was also evaluated in terms of connectivity and habitat linkages. Relative to corridor issues, the discussions in this report are intended to focus on wildlife movement associated with the project site and immediate vicinity.

The focus of this study Is to determine if the alteration of current land use on the subject property will have significant impacts on the regional movement of wildlife. This study did not include the use of track plates, camera stations, scent stations, or snares. Instead, notation was made during all site visits of the locations of animal sign to determine the species potentially utilizing the project site. The results of the literature review and site visits were used to draw conclusions about the wildlife potentially utilizing the project site and vicinity.

5.0 RESULTS

5.1 Vegetation Communities, Land Cover, and Floral Diversity

Six vegetation communities and land cover types were identified on-site during the habitat assessment field surveys. Vegetation communities and land cover types mapped in the project site are depicted on Figure 5: *Vegetation Communities and Other Land Uses* and described in further detail below. Refer to Appendix D for a complete list of plant species that were observed within the project site during the field surveys. Refer to Table 2 below for a summary of vegetation communities within the project site.

TABLE 2. VEGETATION COMMUNITIES/LAND COVER TYPES

Vegetation Community/ Land Cover Type	Acreage
Black Sage Scrub	17.18
Disturbed Black Sage Scrub	2.74
Scrub Oak Woodland	8.23
Chaparral	293.26
Non-native Grassland	50.60
Developed/Disturbed	8.81
Total	**380.82**

5.1.1 Black Sage Scrub (*Salvia mellifera* Shrubland Alliance)

Approximately 17.18 acres of black sage scrub (*Salvia mellifera* Shrubland Alliance) are located within the project site. This community is dominated by black sage (*Salvia mellifera*), with other shrub species occurring in lesser quantities. Associated species observed include white sage (*Salvia apiana*), deerweed (*Acmispon glaber*), and coastal sagebrush (*Artemisia californica*). This vegetation community is concentrated on the western portion of the project site.

5.1.2 Disturbed Black Sage Scrub (disturbed *Salvia mellifera* Shrubland Alliance)

Approximately 2.74 acres of disturbed black sage scrub (disturbed *Salvia mellifera* Shrubland Alliance) are located within the project site. This community has a similar composition of plant species as the undisturbed black sage scrub located within the project site but has a high concentration of non-native species and less dense shrub layer throughout. Non-native species present within this community include big heron bill (*Erodium botrys*), red brome (*Bromus rubens*), and cheese weed (*Malva parviflora*). This

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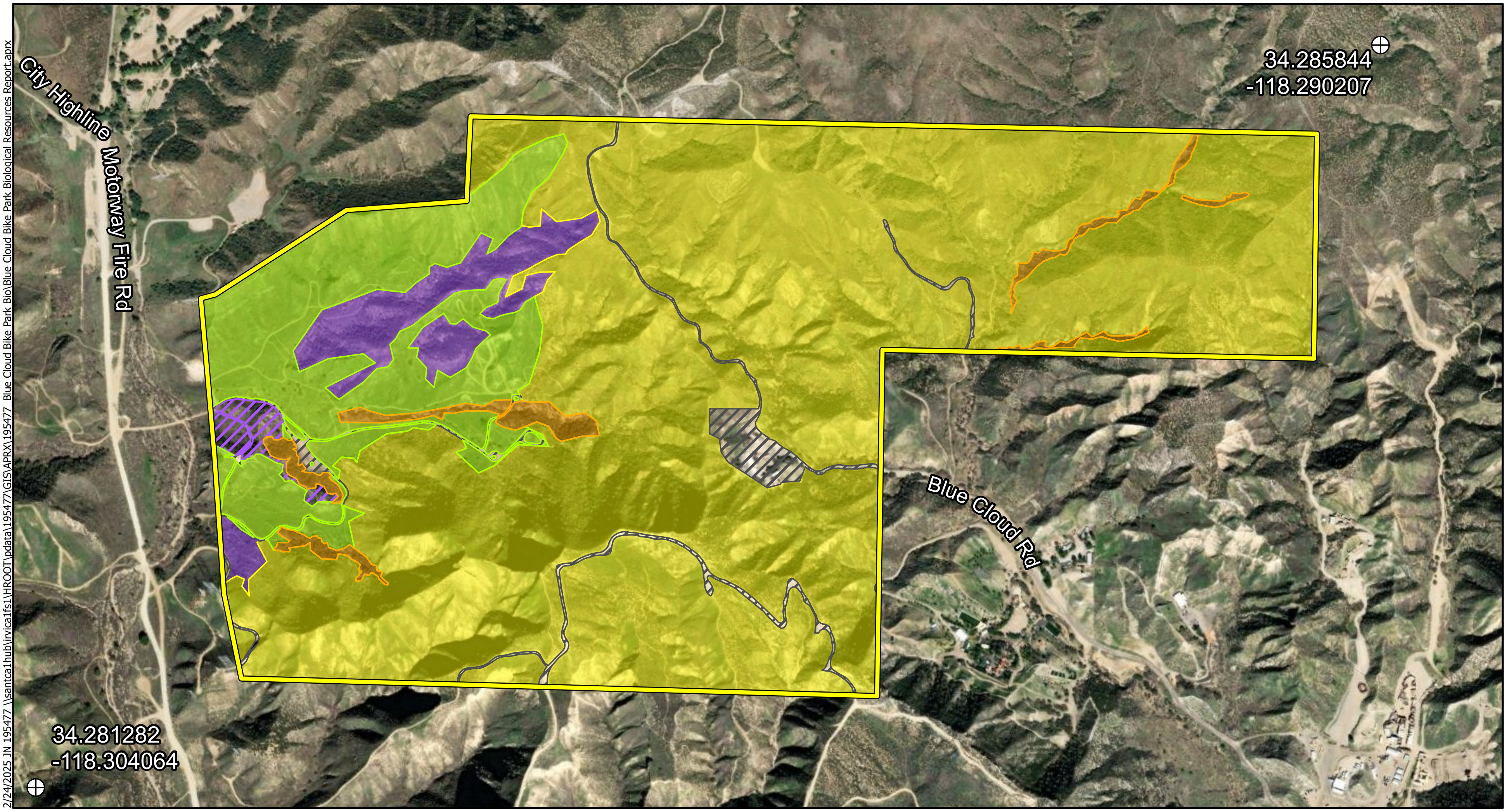


Legend

Reference Point	Black Sage Scrub	Disturbed Black Sage Scrub
Project Site	Chaparral	Non-Native Grassland
	Developed/Disturbed	Scrub Oak Woodland

Michael Baker INTERNATIONAL

0 500 1,000 Feet

Source: Esri, ArcGIS Online, Los Angeles County

HASKELL CANYON BIKE PARK PROJECT
BIOLOGICAL RESOURCES TECHNICAL REPORT

Vegetation Communities and Other Land Uses

Figure 5

disturbance has likely been brought on by human visitation within the project site. Disturbed black sage scrub on-site consists of a small area along the western border of the project site.

5.1.3 Scrub Oak Woodland (*Quercus john-tuckeri* Shrubland Alliance)

Approximately 8.23 acres of scrub oak woodland (*Quercus john-tuckeri* Shrubland Alliance) are located within the project site. This community is dominated by Tucker's oak (*Quercus john-tuckeri*), with other chaparral species occurring in lesser quantities, such as chamise (*Adenostoma fasciculatum*), toyon (*Heteromeles arbutifolia*), and giant wild rye (*Elymus condensatus*). This vegetation community occurs in somewhat moderate sized patches throughout the project site, and mainly occurs within the valley bottom of the steep sloped hillsides within the project site.

5.1.4 Chaparral (*Adenostoma fasciculatum* Shrubland Alliance)

Approximately 293.26 acres of chaparral (*Adenostoma fasciculatum* Shrubland Alliance) are located within the project site. This community is dominated by chamise and toyon, with other shrub species occurring in lesser quantities, including black sage and coastal sagebrush. This vegetation community is found throughout the project site and is the site's most dominant vegetation community.

5.1.5 Non-native Grassland

Approximately 50.60 acres of non-native grassland are located within the project site. This community is dominated by non-native grasses and forbs, including red brome, tocalote (*Centaurea melitensis*), big heron bill, London rocket (*Sisymbrium irio*), prickly sowthistle (*Sonchus asper*), and cheese weed. This vegetation community is located along the flat valley bottom and south-facing hillside within the northwestern portion of the project site.

5.1.6 Developed/Disturbed

Approximately 8.81 acres of disturbed/developed land cover are located within the project site. Disturbed/developed areas include areas with preexisting trails for both recreational use and maintenance/utility access throughout the project site, and areas that have had some disturbance in the past and are devoid of vegetation and/or contain evidence of historical development. Evidence of historical development includes graded areas that contain equipment appearing to be related to old mining activities that had occurred in the area.

5.1.7 Floral Diversity

A total of 26 plant species were recorded in the project site, including 18 native species (69%) and 8 non-native species (31%). The somewhat low number of plant species represented indicates the lower diversity of vegetation communities and floral richness of the project site. In addition, the survey was conducted outside of the blooming period for many plant species, and all species present on-site may not have been able to be detected. The project site is mostly dominated by a single vegetation type (chaparral) with other vegetation types occurring in lesser quantities. The more common plant species observed within the project site were identified in the description of the vegetation communities above. The cumulative list of plant species observed on the project site is provided in Appendix D. Special-status plant species are discussed in Section 5.4.1.

5.2 Wildlife Diversity

The plant communities discussed above provide wildlife habitat. While a few wildlife species are entirely dependent on a single natural community, the entire mosaic of all the natural communities within the project site and adjoining areas constitutes a functional ecosystem for a variety of wildlife species, both within the project site and as part of the regional ecosystem. Natural vegetation communities provide foraging habitat, nesting/denning sites, and shelter from adverse weather or predation. Following are discussions of wildlife populations within the project site, segregated by taxonomic group. This section provides a general discussion of those wildlife species that were observed during the field survey or that are expected to occur based on existing site conditions. The discussion is to be used as a general reference and is limited by the season, time of day, and weather conditions during which the field survey was conducted. Wildlife detections were based on calls, songs, scat, tracks, burrows, and direct observation. Refer to Appendix D for a complete list of wildlife species observed during the field survey. Due to access being limited to the project site boundaries, and the steep terrain within the project site, the only species recorded during the field survey were those that were detectable from within the project site. Special-status wildlife species occurring or potentially occurring are discussed further in Section 5.4.2.

5.2.1 Invertebrates

No directed surveys for common invertebrates were conducted; however, invertebrate species that were observed during all site visits were recorded in field notes. Common invertebrate species observed include honeybee (*Apis mellifera*), darkling beetle (*Eleodes osculans*), and cicada (*Cicada* sp.). Special-status invertebrate species are discussed further in Section 5.4.2. All invertebrate species observed are listed in Appendix D.

5.2.2 Amphibians

The potential presence of amphibians varies greatly between habitats within the project site. Terrestrial species may or may not require standing water for reproduction. Terrestrial species avoid desiccation by burrowing underground; within crevices in trees, rocks, and logs; and under stones and surface litter during the day and dry seasons. Due to their secretive nature, terrestrial amphibians are rarely observed, but may be quite abundant if conditions are favorable. Aquatic amphibians are dependent on standing or flowing water for reproduction. Such habitats include freshwater marshes and open water (reservoirs, permanent and temporary pools and ponds, and perennial streams). Many aquatic amphibians will use temporary pools as nesting sites. These pools are temporary in duration and form following winter and spring rains common to Southern California. The project site has the potential to support amphibians that do not require a permanent water source. No amphibian species were observed during the field surveys. Special-status amphibian species are discussed further in Section 5.4.2. All amphibian species observed are listed in Appendix D.

5.2.3 Reptiles

Reptilian diversity and abundance typically vary with habitat type and character. Some species prefer only one or two natural communities; however, most will forage in a variety of communities. Several reptile species prefer open habitats that allow free movement and high visibility. Most species occurring in open habitats rely on the presence of small mammal burrows for cover and escape from predators and extreme weather.

The project site has many essential reptilian habitat characteristics and possesses the potential to support several species. One reptile species was observed within the project site: western fence lizard (*Sceloporus occidentalis*). A number of additional species have a potential to occur, including San Diego alligator lizard (*Elgaria multicarinata webbii*) and Great Basin gopher snake (*Pituophis catenifer deserticola*). Special-status reptile species are discussed in Section 5.4.2. All reptile species observed are listed in Appendix D.

5.2.4 Birds

Much of the habitat within the project site provides foraging opportunities for avian species, including California scrub jay (*Aphelocoma californica*), turkey vulture (*Cathartes aura*), and common raven (*Corvus corax*), which were observed during field surveys. The project site supports chaparral, which provides additional foraging opportunities for species such as American kestrel (*Falco sparverius*), and provides habitat for small mammals, which has the potential to result in a sizeable rodent population. Collectively, the availability of prey and perches would suggest that the project site is being used by a variety of avian species. All avian species observed are included in Appendix D. Special-status avian species are discussed in Section 5.4.2.

5.2.5 Mammals

Mammals observed within the project site include coyote (*Canis latrans*), bobcat (*Lynx rufus*), and California ground squirrel (*Otospermophilus beecheyi*). A number of other species are expected to be resident within the region and may use the project site to forage or for cover, including mountain lion (*Puma concolor*). All mammals observed within the project site are listed in Appendix D. Special-status mammal species are discussed in Section 5.4.2.

5.3 Special-Status/Regulated Resources

The CNDDB, CIRP, and IPaC were queried for reported locations of special-status plant and wildlife species as well as special-status natural vegetation communities in the USGS *Warm Springs Mountain, Newhall,* *Mint Canyon, Agua Dulce, Sleepy Valley, Burnt Peak, Lake Hughes, Del Sur, and Green Valley, California* 7.5-minute quadrangles. The field survey was conducted to assess and evaluate the existing condition of the habitat(s) within the boundaries of the project site to determine if the existing vegetation communities, at the time of the field survey, have the potential to provide suitable habitat(s) for special-status plant and wildlife species. Additionally, the reported locations of the CNDDB and CIRP species records in relation to the project site were considered. The following categories were used to assign the potential for each species to occur within the project site:

- **Present**: the species was observed or detected within the project site during the field survey.
- **High**: Occurrence records (within 20 years) indicate that the species has been known to occur on or within 1 mile of the project site and the site is within the normal expected range of this species. Intact, suitable habitat preferred by this species occurs within the project site and/or there is viable landscape connectivity to a local known extant population(s) or sighting(s).
- **Moderate**: Occurrence records (within 20 years) indicate that the species has been known to occur within 1 mile of the project site and the site is within the normal expected range of this species. There is suitable habitat within the project site, but the site is ecologically isolated from any local known extant populations or sightings.
- **Low**: Occurrence records (within 20 years) indicate that the species has been known to occur within 5 miles of the project site, but the site is outside of the normal expected range of the species and/or there is poor quality or marginal habitat within the project site.
- **Not Expected**: There are no occurrence records of the species occurring within 5 miles of the project site, there is no suitable habitat within the project site, and/or the project site is outside of the normal expected range for the species.

Special-status plant and wildlife species were evaluated for their potential to occur within the project site based on habitat requirements, availability and quality of suitable habitat, and known distributions. Special-status biological resources identified during the literature review as having the potential to occur within the vicinity of the project site are presented in *Table E: Potentially Occurring Special-Status Biological Resources,* in Appendix E. In addition, potential jurisdictional aquatic features occurring on-site are described in detail below.

5.3.1 Special-Status Plant Species

Michael Baker observed no special-status plant species during the field surveys. Based on the results of the literature review and the field survey, existing site conditions, and a review of specific habitat requirements, occurrence records, and known distributions, Michael Baker determined that the native vegetation communities within the project site have a moderate or high potential to support three special-status plant species: club-haired mariposa-lily (CRPR 4.3), slender mariposa-lily (CRPR 1B.2), and short-jointed beavertail (CRPR 1B.2). Michael Baker determined that these vegetation communities also have a low potential to support three special-status plant species: Nevins barberry (*Berberis nevinii*; FE, SE, CRPR 1B.1), Catalina mariposa lily (*Calochortus catalinae*; CRPR 4.2), and island mountain-mahogany (*Cercocarpus betuloides* var. *blancheae*; CRPR 4.3). All remaining special-status plant species identified by the CNDDB and CNPS are not expected to occur within the project site due to lack of suitable habitat, lack of recent extant occurrences near the project site, and/or the project site is not within the elevation range of those species. Because the field survey occurred outside of the blooming period of these species, special-status plant species were not conducted. Those species that have a moderate or high potential to occur within the project site, or that are state or federally listed or regionally significant, are described in more detail below. All special-status plant species reviewed are included in Appendix E.

TABLE 3. POTENTIALLY OCCURRING SPECIAL-STATUS PLANT SPECIES

Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
SPECIAL-STATUS PLANT SPECIES				
Arenaria paludicola marsh sandwort	FE SE 1B.1 G1 S1	Perennial stoloniferous herb. Found on sandy, openings within marshes and swamps (freshwater or brackish). Found at elevations ranging from 12 to 558 feet amsl. Blooming period is from May to August.	No	**Not Expected:** The project site is not within the elevation range for this species.
Berberis nevinii Nevin's barberry	FE SE 1B.1 G1 S1	Perennial evergreen shrub. Occurs on sandy or gravelly soils in chaparral, cismontane woodland, coastal scrub, and riparian scrub. Found at elevations ranging from 899 to 2,707 feet amsl. Blooming period is March through June.	No	**Low:** Although suitable habitat is present within the project site, there are no occurrence records within 3 miles of the project site.
Calochortus clavatus* var. *clavatus club-haired mariposa-lily	4.3 G4T3 S3	Perennial herb (bulb). Occurs on serpentinite, clay, and rocky soils within chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland habitats. Found at elevations ranging from 246 to 4,265 feet amsl. Blooming period is from May to June.	No	**Moderate:** Suitable habitat is present within the project site. In addition, there is a recent occurrence record (Calflora 2024) roughly 1.5 miles southeast of the project site.
Calochortus clavatus* var. *gracilis slender mariposa-lily	1B.2 G4T2T3 S2S3	Perennial bulbiferous herb. Found in chaparral, coastal scrub, and valley and foothill grassland habitats. Found at elevations ranging from 1,050 to 3,280 feet amsl. Blooming period is March through June (November).	No	**High:** Suitable habitat is present within the project site. In addition, there is a recent occurrence record (CNDDB; Occ. 113) roughly 0.4 miles southwest of the project site.

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
Chorizanthe parryi* var. *fernandina San Fernando Valley spineflower	FPT SE 1B.1 G2T1 S1	Annual herb. Found in sandy soils within coastal scrub habitat and valley and foothill grassland habitats. Found at elevations ranging from 492 to 4,003 feet amsl. Blooming period is from April to July.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Dodecahema leptoceras slender-horned spineflower	FE SE 1B.1 G1 S1	Annual herb. Occurs on flood deposited terraces and washes in chaparral, coastal scrub, and alluvial fan sage scrub habitats. Found at elevations ranging from 1,181 to 2,690 feet amsl. Blooming period is from April to June.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Nasturtium gambelii Gambel's water cress	FE ST 1B.1 G1 S1	Perennial rhizomatous herb. Occurs in marshes and swamps (freshwater or brackish) habitats. Found at elevations ranging from 16 to 1,083 feet amsl. Blooming period is from April to October.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Opuntia basilaris* var. *brachyclada short-jointed beavertail	1B.2 G5T3 S3	Perennial stem succulent. Grows in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland habitats. Found at elevations ranging from 1,394 to 5,906 feet amsl. Blooming period is from April to June.	No	**Moderate:** Suitable habitat preferred by this species is present within the project site. In addition, the nearest extant occurrence (CNDDB; Occ. 108) is roughly 1.3 miles northwest of the project site.
Orcuttia californica California Orcutt grass	FE SE 1B.1 G1 S1	Annual herb. Restricted to vernal pool habitats. Found at elevations ranging from 49 to 2,165 feet amsl. Blooming period is from April to August.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Yucca brevifolia western Joshua tree	SCT	Tree. Found within mesic canyons in chaparral, cismontane woodland, broadleafed upland forest, lower montane coniferous forest, and riparian woodland. Found at elevations ranging from 1000 to 7350 feet amsl. Blooming period is from March through June.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.

*Comprehensive PTO table is in Appendix E: Potentially Occurring Special-Status Biological Resources.

** **U.S. Fish and Wildlife Service (USFWS)**

FE Endangered – any species which is in danger of extinction throughout all or a significant portion of its range.

FCE Proposed Endangered - the classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the USFWS has formally noticed as being under review by the USFWS for addition to the list of endangered species, or a species for which the Service has published a notice of proposed regulation to add the species to the list of endangered species.

FT Threatened – any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

FPT Proposed Threatened – the classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the USFWS has formally noticed as being under review by the USFWS for addition to the list of threatened species, or a species for which the Service has published a notice of proposed regulation to add the species to the list of threatened species.

California Department of Fish and Wildlife (CDFW)

SE Endangered – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

SCE State Candidate for Listing as Endangered – the classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of endangered species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of endangered species.

ST Threatened – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required under the California Endangered Species Act.

SCT State Candidate for Listing as Threatened – the classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of threatened species.

FP Fully Protected – any native species or subspecies of bird, mammal, fish, amphibian, or reptile that were determined by the State of California to be rare or face possible extinction.

SSC Species of Special Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria:

- is extirpated from California or, in the case of birds, in its primary seasonal or breeding role;
- is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed.
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

WL Watch List - taxa that were previously designated as “Species of Special Concern” but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

California Native Plant Society (CNPS) California Rare Plant Rank

1B Plants rare, threatened, or endangered in California and elsewhere.

4 Plants of limited distribution – Watch List.

Threat Ranks

.1 Seriously threatened in California (over 80% of occurrences threatened/high degree any immediacy of threat).

.2 Moderately threatened in California (20 to 80 percent of occurrences threatened/moderate degree and immediacy of threat).

.3 Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

NatureServe Conservation Status Rank

The Global Rank (G#) reflects the overall condition and imperilment of a species throughout its global range. The Infraspecific Taxon Rank (T#) reflects the global situation of just the subspecies or variety. The State Rank (S#) reflects the condition and imperilment of an element throughout its range within California. (G#Q) reflects that the element is very rare but there are taxonomic questions associated with it; the calculated G rank is qualified by adding a Q after the G#). Adding a ? to a rank expresses uncertainty about the rank.

G1/T1	Critically Imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2/T2	Imperiled— At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
G3/T3	Vulnerable— At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
G4/T4	Apparently Secure— Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S1	Critically Imperiled – Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the State.
S2	Imperiled – Imperiled in the State because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or State.
S3	Vulnerable – Vulnerable in the State due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

5.3.2 Special-Status Wildlife Species

Michael Baker observed one special-status wildlife species during the field survey: Lawrence's goldfinch (BCC). Based on the results of the literature review and the field surveys, and a review of specific habitat requirements, occurrence records, and known distributions of the special-status wildlife species identified in the literature review, Michael Baker determined that the project site has a moderate or high potential to support four additional special-status wildlife species: southern California rufous-crowned sparrow (WL), Bell's sparrow (WL), coastal whiptail (SSC), and coast horned lizard (SSC). In addition, Michael Baker determined that the project site has a low potential to support nine special-status wildlife species: grasshopper sparrow (*Ammodramus savannarum*; SSC), California legless lizard (*Anniella* spp.; SSC), California glossy snake (*Arizona elegans occidentalis*; SSC), Crotch's bumble bee (*Bombus crotchii*; Candidate State Endangered [CSE]), Swainson's hawk (*Buteo swainsoni*; State Threatened [ST]), Townsend's big-eared bat (*Corynorhinus townsendii*; SSC), white-tailed kite (*Elanus leucurus*; Fully Protected [FP]), spotted bat (*Euderma maculatum*; SSC), and western spadefoot (*Spea hammondii*; SSC). All remaining special-status wildlife species identified by the CNDDB are not expected to occur within the project site based on existing site conditions and a review of specific habitat requirements, occurrence records, and known distributions. Those species that have a moderate or high potential to occur within the project site, or that are state or federally listed or regionally significant, are described in more detail below. The complete list of special-status wildlife species reviewed is attached in Appendix E.

TABLE 4. POTENTIALLY OCCURRING SPECIAL-STATUS WILDLIFE SPECIES

Scientific Name **Common Name**	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
		SPECIAL-STATUS WILDLIFE SPECIES		
Agelaius tricolor tricolored blackbird	FT SSC G1G2 S2	Range is limited to the coastal areas of the Pacific coast of North America, from Northern California to upper Baja California. Can be found in a wide variety of habitat including annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields, cattle feedlots, and dairies. Occasionally forages in riparian scrub habitats along marsh borders. Basic habitat requirements for breeding include open accessible water, protected nesting substrate freshwater marsh dominated by cattails (*Typha* spp.), willows (*Salix* spp.), and bulrushes (*Schoenoplectus* spp.), and either flooded or thorny/spiny vegetation and suitable foraging space providing adequate insect prey.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
Aimophila ruficeps canescens southern California rufous-crowned sparrow	WL G5T3 S4	Yearlong resident that is typically found between 2,000 and 6,000 feet amsl, and can occur in lower elevations during winter months. Breeds in sparsely vegetated scrubland on hillsides and canyons. Prefers coastal sage scrub dominated by California sagebrush (*Artemisia californica*), but can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.	No	**High:** Suitable foraging and nesting habitat is present within the project site. In addition, the closest extant occurrence (CNDDB; Occ. 178) is roughly 0.6 miles east of the project site.
Anaxyrus californicus arroyo toad	FE SSC G2G3 S2	Occurs in semi-arid regions near washes or intermittent streams, including valley-foothill grasslands, desert riparian, desert washes, and oak woodlands. Breeding habitat consists of shallow streams with a mixture of sandy and gravelly substrate and sandy terraces. Generally, requires mulefat (*Baccharis salicifolia*) and willow (*Salix* spp.) in the streambed for vegetative canopy for breeding areas and forages for insects primarily under oak (*Quercus* spp.), Fremont cottonwood (*Populus fremontii*), and California sycamore (*Platanus racemosa*) trees. Occurs at elevations from near sea level to about 4,600 feet amsl.	No	**Not Expected:** Suitable habitats preferred by this species are not present within the project site.

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
Artemisiospiza belli belli Bell's sparrow	WL G5T2T3 S3	Yearlong resident on the coastal side of southern California mountains. Breeds in coastal sage scrub and chaparral habitats from February to August. Requires semi-open habitats with evenly spaced shrubs one to two meters high. Occurs in chaparral dominated by fairly dense stands of chamise (*Adenostoma fasciculatum*).	No	**High:** Suitable foraging and nesting habitats preferred by this species are present within the project site. In addition, the nearest extant occurrence (CNDDB; Occ. 57) is roughly 0.6 miles east of the project site.
Aspidoscelis tigris stejnegeri coastal whiptail	SSC G5T5 S3	This subspecies is found in coastal southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, and north into Ventura County. Ranges south into Baja California. Found in a variety of ecosystems, primarily hot and dry open areas with sparse vegetation in chaparral, woodland, and riparian areas. Associated with rocky areas with little vegetation or sunny microhabitats within shrub or grassland associations.	No	**High:** Suitable habitat is located within the project site, and there are known occurrences within 0.6 miles of the project site.
Bombus crotchii Crotch's bumble bee	SCE G2 S2	Found from coastal California east to the Sierra-Cascade crest and south into Mexico. Primarily occurs in California, including the Mediterranean region, Pacific coast, western desert, great valley, and adjacent foothills through most of southwestern California. Has also been recorded in Baja California, Baja California Sur, and in southwest Nevada. Inhabits open grassland and scrub habitats. Primarily nests underground. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	No	**Low:** Marginally suitable foraging habitat available on site; additionally, there are no occurrences within 3 miles of the project site.
Branchinecta lynchi vernal pool fairy shrimp	FT G3 S3	Endemic to California and only found in vernal pools. Vernal pool habitats form in depressions above an impervious substrate layer, or claypan/duripan. This species does not occur in riverine, marine, or other permanent bodies of water. When the temporary pools dry, offspring persist in suspended development as desiccation-resistant embryos (commonly called cysts) in the pool substrate until the return of winter rains and appropriate temperatures allow some of the cysts to hatch.	No	**Not Expected:** Suitable vernal pool habitat preferred by this species are not present within the project site.

Scientific Name **Common Name**	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
Buteo swainsoni Swainson's hawk	ST G5 S4	Typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.	No	**Low (foraging):** Potential to occur within the site as a transient during migration.
Catostomus santaanae Santa Ana sucker	FT G1 S1	Occur in the watersheds draining the San Gabriel and San Bernardino Mountains of southern California. Streams that Santa Ana sucker inhabit are generally perennial streams with water ranging in depth from a few inches to several feet and with currents ranging from slight to swift.	No	**Not Expected:** Suitable habitat preferred by this species are not present within the project site.
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT SE G5T2T3 S1	Uncommon summer resident where its breeding distribution is restricted to isolated sites in the Sacramento, Armargosa, Kern, Santa Ana, and Colorado River valleys. The species requires large patches of multi-layered riparian forest, with cottonwoods and willows. The presence of standing or flowing surface water under the riparian canopy is also preferred. Mesquite (Prosopis spp.) groves may also be used, but usually only when cottonwood-willow habitat is unavailable.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
Danaus plexippus monarch butterfly	FCE G4T1T2Q S2	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts are located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	No	**Not Expected (overwintering):** Suitable habitat preferred by this species is not present within the project site.
Empidonax traillii extimus southwestern willow flycatcher	FE SE G5T2 S3	Uncommon summer resident in Southern California primarily found in lower elevation riparian habitats occurring along streams or in meadows. The structure of suitable breeding habitat typically consists of a dense mid-story and understory and can also include a dense canopy. Nest sites are generally located near surface water or saturated soils. The presence of surface water, swampy conditions, standing or flowing water under the riparian canopy are preferred.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
Gasterosteus aculeatus williamsoni unarmored threespine stickleback	FE SE FP G5T1 S1	Small, scaleless freshwater fish of up to 2 inches in length inhabiting slow-moving reaches or quiet-water microhabitats in streams and rivers. Restricted to three areas: the upper Santa Clara River and its tributaries in Los Angeles County, San Antonio Creek on Vandenberg Air Force Base in Santa Barbara County, and the Shay Creek vicinity (Shay Pond, Sugarloaf Pond, Juniper Springs, Motorcycle Pond, Shay Creek, Wiebe Pond, and Baldwin Lake) in San Bernardino County. Favorable habitats are shaded by dense and abundant vegetation. In open reaches, algal mats or barriers (e.g., sand bars, floating vegetation, low-flow road crossings) provide refuge.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Gymnogyps californianus California condor	FE SE FP G1 S1	Current distribution of California condor is considered to be all of the Los Padres National Forest and western half of the Angeles National Forest (USDA Forest Service 2000), with some occasionally found in the Sequoia National Forest. Nest sites are typically located in chaparral, conifer forest, or oak woodland habitats. Nest sites are in cliff caves in the mountains. Some have nested in large cavities within sequoias *(Sequoiadendron giganteum*).	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
Haliaeetus leucocephalus bald eagle	SE FP G5 S3	Locally common yearlong resident of Southern California. Typically prefers areas near large water bodies such as sea coasts, coastal estuaries and inland lakes and rivers; in many areas, these birds are found within two miles of a water source. Most populations, specifically those in northern regions, migrate to southern, milder climates annually. Generally, these birds nest in the canopy of tall, coniferous trees, surrounded by smaller trees. They have been reported nesting on the ground, on cliffs, on cellular phone towers, on electrical poles and in artificial nesting towers.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.

Scientific Name **Common Name**	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
Phrynosoma blainvillii coast horned lizard	SSC G4 S4	Occurs in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland, and coniferous forest. Its elevational range extends up to 4,000 feet in the Sierra Nevada foothills and up to 6,000 feet in the mountains of Southern California. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (e.g., fire, floods, unimproved roads, grazing lands, and fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	**Moderate:** Suitable habitat is located within the project site, and there are known occurrences within 3 miles of the project site.
Polioptila californica coastal California gnatcatcher	FT SSC G4G5T3Q S2	Yearlong resident of sage scrub habitats that are dominated by California sagebrush. This species generally occurs below 750 feet amsl in coastal regions and below 1,500 feet amsl inland. Ranges from Ventura County, south to San Diego County and northern Baja California and it is less common in sage scrub with a high percentage of tall shrubs. Prefers habitat with more low-growing vegetation.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
***Rana boylii* pop. 6** foothill yellow-legged frog – south coast DPS	FT ST G3T1 S1	Isolated populations are also known from the mountains of Los Angeles County. Occurs in streams flowing through a variety of vegetation types, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, yellow pine (*Pinus ponderosa*), mixed conifer, mixed chaparral, and wet meadows. Rarely occurs in areas with greater than 90 percent canopy closure. Breeding and rearing habitat is generally located in gently flowing, low-gradient stream sections with variable substrates predominated by cobble and boulder.	No	**Not Expected:** Suitable habitat preferred by the species is not present within the project site.

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
Rana draytonii California red-legged frog	FT SSC G2G3 S2S3	The species historically occurred in the San Gabriel Wilderness Area of the Angeles National Forest; there were no post-1970 observations in this area or nearby parts of the Angeles National Forest. In 1999, a population (estimated between 15 and 25 adults) was located on the Angeles National Forest in the San Francisquito drainage. Breeding sites are in a variety of aquatic habitats including streams, deep pools, backwaters within streams and creeks, ponds, marshes, sag ponds, dune ponds, lagoons, and artificial impoundments (i.e., stock ponds). Breeding adults are often associated with deep (greater than 2 feet) still or slow-moving water and dense shrubby riparian or emergent vegetation.	No	**Not Expected:** Suitable habitat preferred by the species is not present within the project site.
Spea hammondii western spadefoot	SSC FPT G2G3 S3S4	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rain pools that do not contain American bullfrogs (*Lithobates catesbeianus*), predatory fish, or crayfish are necessary for breeding. Estivates in upland habitats adjacent to potential breeding sites in burrows approximating 3 feet in depth.	No	**Low**: Suitable breeding habitat is not located within the project site, and the most recent extant occurrence is located within 2.3 miles of the project site.
Spinus lawrencei Lawrence's goldfinch	BCC G3G4 S4	Nests in open oak or other arid woodland and chaparral, near water. Nearby herbaceous habitats are also used for feeding. This species can also be found in broadleaved upland forest and pinon and juniper woodlands. This species is closely associated with oaks (*Quercus* sp.).	Yes	**Present:** This species was observed on-site during the field surveys.

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
Streptocephalus woottoni Riverside fairy shrimp	FE G1G2 S1S2	Restricted to deep seasonal vernal pools, vernal pool like ephemeral ponds, and stock ponds and other human modified depressions. Basins that support Riverside fairy shrimp are typically dry a portion of the year, but usually are filled by late fall, winter, or spring rains, and may persist through May. Endemic to western Riverside, Orange, and San Diego Counties in tectonic swales/earth slump basins in grassland and coastal sage scrub. In Riverside County, the species been found in pools formed over the following soils: Murrieta stony clay loams, Las Posas series, Wyman clay loam, and Willows soils. All known habitat lies within annual grasslands, which may be interspersed through chaparral or coastal sage scrub vegetation.	No	**Not Expected:** Vernal pool habitat required by the species is not present within the project site.
Vireo bellii pusillus least Bell's vireo	FE SE G5T2 S3	Summer resident in Southern California. Breeding habitat generally consists of dense, low, shrubby vegetation in riparian areas, and mesquite brushlands, often near water in arid regions. Early successional cottonwood-willow riparian groves are preferred for nesting. The most critical structural component of nesting habitat in California is a dense shrub layer that is 2 to 10 feet (0.6 to 3.0 meters) aboveground. The presence of water, including ponded surface water or moist soil conditions, may also be a key component for nesting habitat.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.

*Comprehensive PTO table is in Appendix E: Potentially Occurring Special-Status Biological Resources.

5.3.3 Sensitive Natural Communities

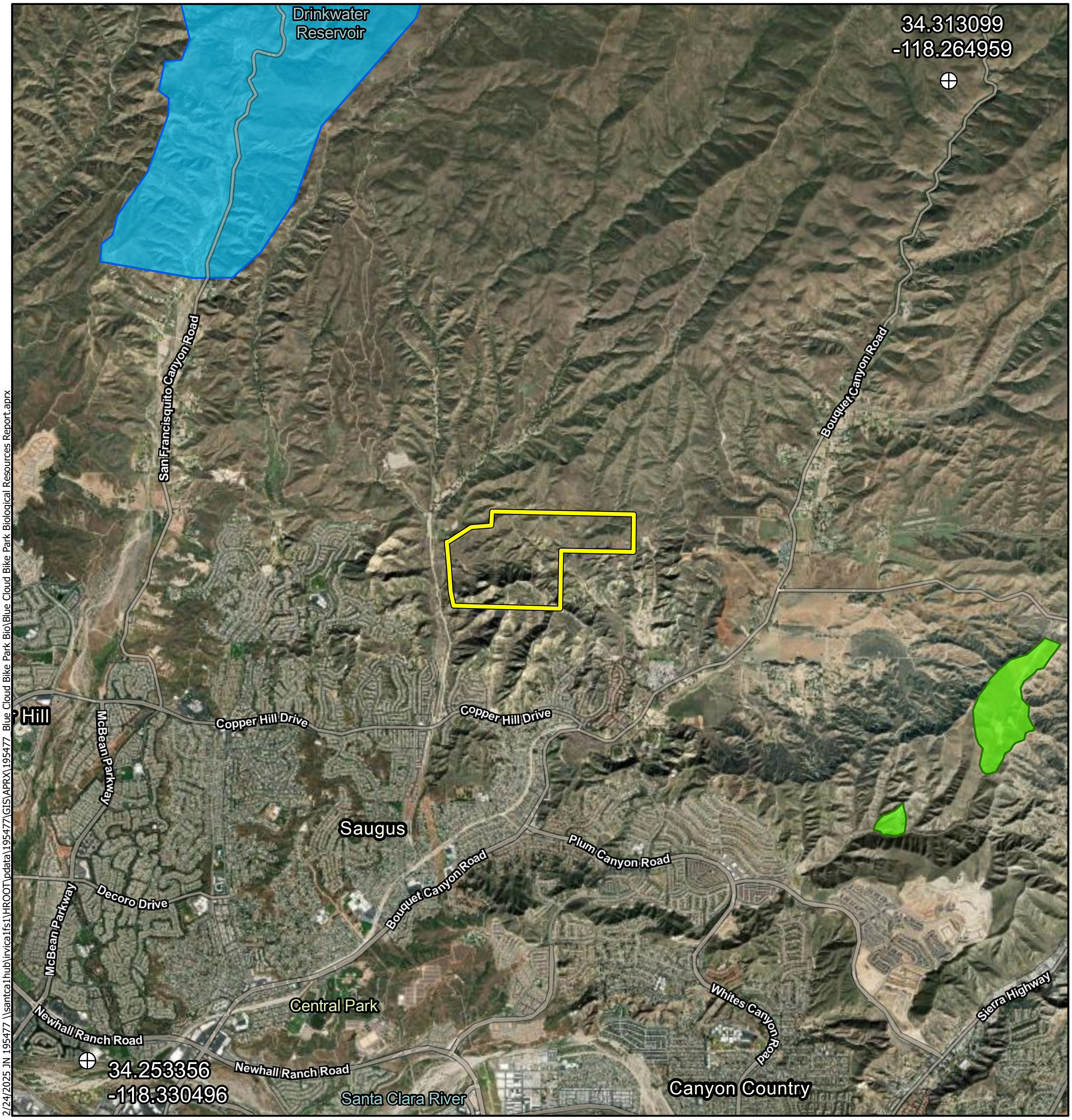
Thirteen special-status vegetation communities have been reported in the CNDDB within the USGS *Warm Springs Mountain, Newhall, Mint Canyon, Agua Dulce, Sleepy Valley, Burnt Peak, Lake Hughes, Del Sur, and Green Valley, California* 7.5-minute quadrangles: California walnut woodland, mainland cherry forest, Riversidian alluvial fan sage scrub, southern California three-spine stickleback stream, southern coast live oak riparian forest, southern cottonwood willow riparian forest, southern mixed riparian forest, southern riparian forest, southern riparian scrub, southern sycamore alder riparian woodland, southern willow scrub, valley needlegrass grassland, and valley oak woodland. None of these special-status vegetation communities were identified within the project site during the field surveys.

5.3.4 Critical Habitat

Critical habitat for California red-legged frog is located approximately 2.5 miles northwest of the project site. In addition, critical habitat for spreading navarretia (*Navarretia fossalis*; FT, CRPR 1B.1) is located approximately 2 miles southeast of the project site. However, no critical habitat is present within the project site (refer to Figure 6: *Critical Habitat*).

5.3.5 Jurisdictional Aquatic Resources

Eleven potentially state or federal jurisdictional features were observed within the project site. All of the mapped aquatic features are tributaries to the Santa Clara River. These features exhibit an ephemeral flow regime based on the results of the Streamflow Duration Assessment Method assessment, are not relatively permanent waters, and do not exhibit a continuous surface connection to a downstream traditional navigable water. Accordingly, these features would not be considered subject to Corps jurisdiction pursuant to Section 404 of the Clean Water Act. However, these features will likely be subject to jurisdiction by the CDFW and the Regional Board. Due to the dominance of upland plant species and ephemeral flow regime of all drainages within the project site, it was determined that no potential wetland conditions or wetland features were present within the project site. Therefore, no soil pits were investigated within the project site. Table 5 below shows potential jurisdictional resources present within the project site.



Legend

- Reference Point
- Project Site
- California Red-Legged Frog (*Rana draytonii*)
- Spreading Navarretia (*Navarretia fossalis*)

Michael Baker INTERNATIONAL

0 0.5 1 Miles

Source: Esri, ArcGIS Online, USFWS, Los Angeles County

HASKELL CANYON BIKE PARK PROJECT
BIOLOGICAL RESOURCES TECHNICAL REPORT

Critical Habitat

Figure 6

Table 5: State and Federal Jurisdictional Resources

Feature Name	Location Lat/Long	Cowardin Type	Linear Feet	Acreage within Project Site			
				Regional Board		CDFW	
				Non-Wetland WotS	Wetland WotS	Vegetated Streambed	Riparian
Aquatic Feature 1	34.478566° -118.505720°	Riverine	174	0.01	-	0.04	-
Aquatic Feature 2	34.476463° -118.504156°	Riverine	1,724	0.14	-	0.43	-
Aquatic Feature 3	34.476294° -118.502707°	Riverine	288	0.03	-	0.10	-
Aquatic Feature 4	34.477001° -118.496221°	Riverine	952	0.04	-	0.17	-
Aquatic Feature 5	34.472952° -118.496707°	Riverine	493	0.01	-	0.03	-
Aquatic Feature 6	34.472277° -118.495826°	Riverine	258	0.02	-	0.06	-
Aquatic Feature 7	34.479145° -118.494172°	Riverine	732	0.03	-	0.34	-
Aquatic Feature 8	34.479166° -118.491190°	Riverine	1,891	0.07	-	0.49	-
Aquatic Feature 9	34.479576° -118.491490°	Riverine	400	0.01	-	0.11	-
Aquatic Feature 10	34.479316° -118.492216°	Riverine	208	0.01	-	0.07	-
Aquatic Feature 11	34.475834° -118.495172°	Riverine	450	0.02	-	0.21	-
TOTAL			**7,570**	**0.39**	**-**	**2.05**	**-**
WotS = Waters of the State							

5.4 Regional Connectivity, Wildlife Movement Corridors, and Habitat Linkages

5.4.1 Overview

Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic material (MacArthur and Wilson 1967; Soulé 1987; Harris and Gallagher 1989; Bennet 1990). Corridors effectively act as links between different populations of a species. A group of smaller populations (termed "demes") linked together via a system of corridors is termed a "metapopulation." The long-term health of each deme within the metapopulation is dependent upon its size and the frequency of interchange of individuals (immigration versus emigration). The smaller the deme, the more important immigration becomes, because prolonged inbreeding with the same individuals can reduce genetic variability. Immigrant individuals that move into the deme from adjoining demes mate with individuals and supply that deme with new genes and gene combinations that increases overall genetic diversity. An increase in a population's genetic variability is generally associated with an increase in a population's health.

Corridors mitigate the effects of habitat fragmentation by: (1) allowing animals to move between remaining habitats, which allows depleted populations to be replenished and promotes genetic diversity; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fires or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs (Noss 1983, Fahrig and Merriam 1985, Simberloff and Cox 1987).

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). A number of terms have been used in various wildlife movement studies, such as "travel route," "wildlife corridor," and "wildlife crossing," to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this study, these terms are defined as follows:

- **Travel Route:** A landscape feature (such as a ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another; contains adequate food, water, and/or cover while moving between habitat areas; and provides a relatively direct link between target habitat areas.
- **Wildlife Corridor:** A piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as "habitat or landscape linkages") can provide both transitory and resident habitat for a variety of species.
- **Wildlife Crossing:** A small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are man-made and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles.

It is important to note that, within a large open space area in which there are few or no man-made or naturally occurring physical constraints to wildlife movement, wildlife corridors as defined above may not yet exist. Given an open space area that is both large enough to maintain viable populations of species and provide a variety of travel routes (canyons, ridgelines, trails, riverbeds, and others), wildlife will use these “local” routes while searching for food, water, shelter, and mates, and will not need to cross into other large open space areas. Based on their size, location, vegetative composition, and availability of food, some of these movement areas (e.g., large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water, and cover, particularly for small- and medium-sized mammals. This is especially true if the travel route is within a larger open space area. However, once open space areas become constrained and/or fragmented as a result of urban development or construction of physical obstacles such as roads and highways, remaining landscape features or travel routes that connect the larger open space areas can “become” corridors as long as they provide adequate space, cover, food, and water, and do not contain obstacles or distractions (man-made noise, lighting) that would generally hinder wildlife movement.

5.4.2 Wildlife Movement within the Project Site

As described in the previous section, wildlife movement activities usually fall into one of three movement categories: dispersal, seasonal migration, and movements related to home range activities. Although the nature of these movements are species specific, large open spaces will generally support a diverse wildlife community representing all types of movement. Each type of movement may also be represented at a variety of scales from non-migratory movement of amphibians, reptiles, and some birds on a “local” level to many square mile home ranges of large mammals moving at a “regional” level. The location of the project site supports all types of wildlife movement on some scale.

Movement on a smaller or “local” scale occurs throughout the surrounding vicinity as well as the project site. Data gathered from biological surveys indicate that the project site contains habitat that supports a variety of species of invertebrates, amphibians, reptiles, birds, and mammals. The home range and average dispersal distance of many of these species may be entirely contained within the project site and immediate vicinity. Populations of animals such as insects, amphibians, reptiles, small mammals, and a few bird species may find all their resource requirements without moving far or outside of the project site at all. Occasionally, individuals expanding their home range or dispersing from their parental range will attempt to move outside of the project site. Mammals known to occur within the project site either by direct observation or by the presence of sign include the California ground squirrel, coyote, and bobcat.

Movement on a larger, “regional” scale is likely to occur to and from the project site due to the availability of resources within the project site and in the surrounding area. The project site is within a large open space area of the San Gabriel Mountains. The undisturbed nature of the area, in addition to the resources provided within the unnamed drainages (e.g., prey, water, and vegetative cover), ridgelines, and dirt roads, facilitate wildlife movement in the form of travel routes (as defined above).

5.5 Regional Resource Planning Context

The project is not located within any natural community conservation plan (NCCP) or habitat conservation plan (HCP) documents, including a multiple species conservation plan or multiple species habitat conservation plan. In addition, the project site is not located within any identified Significant Ecological Areas designated within Los Angeles County.

6.0 PROJECT IMPACTS

6.1 Definition of Impacts

6.1.1 Project Description

The proposed project includes the creation of multiple mountain bike trails and associated development, including a new roadway and parking lot, staging areas, and restrooms and other associated facilities.

6.1.2 Direct Impacts

Direct permanent impacts typically refer to 100 percent permanent loss of a biological resource. It is also often referred to as the "project footprint" and refers to the area where vegetation clearing, grubbing, and mass grading occurs. It may include brush management zones or fuel modification zones. Essentially, wherever the existing vegetation or land cover would be permanently affected, it is considered to be a permanent direct impact.

Direct temporary impacts typically refer to short-term removal of a biological resource where the resource is expected to fully recover its function upon completion of the project. Areas subject to temporary disturbance may include slope remediation sites, construction access roads, staging areas, stockpiles, mowing, and dredging. Such sites would not have permanent structures.

6.1.3 Indirect Impacts

Indirect impacts are reasonably foreseeable effects caused by project implementation on remaining or adjacent biological resources outside the direct construction disturbance zone. Indirect impacts may affect areas within the defined project area but outside the construction disturbance zone, including open space and areas outside the project area, such as downstream effects. Indirect impacts include short-term effects immediately related to construction activities and long-term or chronic effects related to the human occupation of developed areas (i.e., development-related long-term effects). In most cases, indirect effects are not quantified, but in some cases, quantification might be included, such as total dissolved solids released to downstream areas or using a noise contour to quantify indirect impacts to nesting birds.

6.2 Impacts to Vegetation Communities and Land Covers

Impacts to vegetation communities and land cover types within the project site are limited to active construction or staging areas and areas of proposed trail alignments. Table 6 below shows the acreage of impacts to each vegetation community and land cover type by the proposed project.

TABLE 6. IMPACTS TO VEGETATION COMMUNITIES/LAND COVER TYPES

Vegetation Community/ Land Cover Type	Acreage
Black Sage Scrub	3.16
Disturbed Black Sage Scrub	0.35
Scrub Oak Woodland	0.74
Chaparral	18.88
Non-native Grassland	9.97
Developed/Disturbed	2.48
Total	**35.58**

6.3 Impacts to Special-Status Plant Species

6.3.1 Direct Impacts

Permanent direct impacts to special-status plant species may occur during implementation of the proposed project. As described in Section 5.4.1 above, there is a moderate and high potential for three special-status plant species to occur on the project site: club-haired mariposa-lily (CRPR] 4.3), slender mariposa-lily (CRPR 1B.2), and short-jointed beavertail (CRPR 1B.2). In addition, Michael Baker determined that the native vegetation communities within the project site have a low potential to support three special-status plant species: Nevins barberry (FE, SE, CRPR 1B.1), Catalina mariposa lily (CRPR 4.2), and island mountain-mahogany (CRPR 4.3). Impacts to these species can occur through the loss of counted or estimated individuals, loss of occurrence, loss of occupied habitat, and/or loss of suitable habitat. To determine if the project will directly impact any special-status plant species, a rare plant survey will need to be conducted to document any special-status plants that may potentially occur within the project site.

6.3.2 Indirect Impacts

Indirect impacts to special-status plants may be short-term construction-related impacts or long-term development-related impacts. These impacts could include the accumulation of construction-related dust on plants, which may affect their ability to photosynthesize, or the alteration of waterways that may affect plant species that require a source of surface or groundwater to survive. In addition, the introduction of invasive species, pollutants, or hazardous materials may occur during construction and have an indirect impact on any special-status plant species near any active construction zone. As previously mentioned, a rare plant survey will need to be conducted to document any special-status plant species that may be indirectly affected by the proposed project.

6.4 Impacts to Special-Status Wildlife Species

6.4.1 Direct Impacts

Permanent direct impacts to special-status wildlife species may occur during implementation of the proposed project. As mentioned in Section 5.4.2 above, one special-status wildlife species was observed during the field survey: Lawrence's goldfinch (BCC). There is also a moderate and high potential for four special-status wildlife species to occur within the project site: southern California rufous-crowned sparrow (WL), Bell's sparrow (WL), coastal whiptail (SSC), and coast horned lizard (SSC). In addition, Michael Baker determined that the project site has a low potential to support nine special-status wildlife species: grasshopper sparrow (SSC), California legless lizard (SSC), California glossy snake (SSC), Crotch's bumble bee (CSE), Swainson's hawk (ST), Townsend's big-eared bat (SSC), white-tailed kite (FP), spotted bat (SSC), and western spadefoot (SSC). Impacts to these species, which include both bird and reptile species, include the loss of individuals, loss of important resources, and/or the loss of suitable habitat. Although most adult birds are mobile and can escape direct injury or mortality by fleeing from a construction site, a displaced animal may be more vulnerable to injury or mortality if its territory has been impacted. Most reptiles are unable to escape direct impacts and may be crushed or entombed by construction equipment.

6.4.2 Indirect Impacts

Indirect impacts to special-status wildlife species may occur during implementation of the proposed project. These impacts include construction noise that may temporarily affect a bird attempting to nest in the area, or with an active nest. Construction-related noise has been documented to cause birds to abandon their nests and young, ultimately having an impact on that species' survival. Reptilian species have the potential to nest and burrow underground and ground vibration from construction can cause premature emergence due to vibrations mimicking rain, or burrow abandonment. Increased lighting due to night work may also potentially affect nearby sensitive species or attract predators to that area.

6.5 Impacts to Critical Habitat

Critical habitat for California red-legged frog (FT) is located approximately 2.5 miles northwest of the project site. In addition, critical habitat for spreading navarretia (FT, CRPR 1B.1) is located approximately 2 miles southeast of the project site. However, no critical habitat is present within the project site. Therefore, impacts to critical habitat are not anticipated and no further discussion is warranted.

6.6 Impacts to Jurisdictional Waters/Wetlands

Impacts to potentially jurisdictional waters may occur as a result of the proposed project. As noted above, the project site is estimated to include approximately 0.39 acre (7,570 linear feet) of non-wetland waters of the State that may potentially be under Regional Board jurisdiction. In addition, there are approximately

2.05 acres (7,570 linear feet) of vegetated streambed potentially under CDFW jurisdiction. However, final jurisdictional limits can only be determined by the respective regulatory agencies.

6.7 Impacts to Wildlife Corridors and Habitat Connectivity

6.7.1 Direct Impacts

The project site consists mostly of undeveloped land and open space with natural vegetation communities. A small portion of the project site consists of developed/disturbed land that is devoid of vegetation or has current or historical development. The project site is not identified as a wildlife corridor within any NCCP, HCP, or subarea plan. The proposed project consists of the establishment of recreational mountain bike trails and associated development. Although the establishment of these trails and amenities will decrease the amount of native vegetation within the project site, the project is not anticipated to cause any impacts to wildlife movement or connectivity within the project site or to the surrounding area.

6.7.2 Indirect Impacts

The project is not anticipated to result in any impacts to wildlife corridors or connectivity within the project site or surrounding area.

6.8 Impacts to Regional Resource Planning

The project site is not located within any NCCP, HCP, associated subarea plan, Significant Ecological Areas of Los Angeles County, or any other regional resources planning effort. Therefore, the project is not anticipated to impact any regional resource planning effort.

7.0 SIGNIFICANT IMPACTS

7.1 Explanation of Findings of Significance

Impacts to sensitive natural communities or riparian habitat, special-status plant species, special-status wildlife species, wildlife corridors and habitat connectivity, and regional resource planning must be analyzed to determine whether such impacts are significant. CEQA Guidelines Section 15064(b) states that an ironclad definition of “significant” effect is not possible because the significance of an activity may vary with the setting. However, CEQA Guidelines Section 15065(a) lists impacts that are helpful in defining whether a project may have a significant effect on the environment. Mandatory findings of significance, which require preparation of an environmental impact report, occur when there is substantial evidence that a project could (1) substantially degrade the quality of the environment, (2) substantially reduce the habitat of a fish or wildlife species, (3) cause a fish or wildlife population to drop below self-sustaining levels, (4) threaten to eliminate a plant or animal community, or (5) reduce the number or restrict the range of a rare or endangered plant or animal.

The following are the significance thresholds for biological resources provided in the CEQA Appendix G environmental checklist, which states that a project could potentially have a significant effect if it:

- Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Has a substantial adverse effect on state or federally protected wetlands (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interferes substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites.
- Conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

The evaluation of whether an impact to a particular biological resource is significant must consider both the resource itself and the role of that resource in a regional context. Substantial impacts are those that contribute to, or result in, permanent loss of an important resource, such as a population of a rare plant or animal. Impacts may be important locally because they result in an adverse alteration of existing site conditions but considered not significant because they do not contribute substantially to the permanent loss of that resource regionally. The severity of an impact is the primary determinant of whether that impact can be mitigated to a less-than-significant level.

7.2 Federal and State Regulations and Protections

Impacts to federally and state-listed threatened or endangered plant and animal species and their habitats or species otherwise protected by state or federal regulations, such as state Fully Protected species or the federal Bald and Golden Eagle Protection Act, would usually have low thresholds for significance. However, unless a lead agency requires a mandatory finding of significance for impacts to listed species, not all direct, indirect, or cumulative impacts to a listed species are necessarily significant.

Other federal and state statutes that may need to be considered in the significance determination include the National Environmental Policy Act; the Clean Water Act, Section 404 (for protection of wetlands); the MBTA; Executive Order 11990 (wetlands protection); Rivers and Harbors Act, Section 10; Marine Protection, Sanctuary, and Research Act; Marine Mammal Protection Act; and Sections 1601 and 1603 Streambed Alteration Agreements.

7.3 Special-Status Plant Species

7.3.1 Significant Impacts

Impact BIO-1
Project construction may result in direct impacts to special-status plant species considered rare, threatened, or endangered by the CNPS: slender mariposa-lily (CRPR 1B.2), Catalina mariposa lily (CRPR 4.2), club-haired mariposa-lily (CRPR 4.3), short-jointed beavertail (CRPR 1B.2), Nevins barberry (FE, SE, CRPR 1B.1), and island mountain-mahogany (CRPR 4.3). Construction activities related to the establishment of recreational mountain bike trails and the associated development may result in direct mortality of individuals of this species. Without the results of focused special-status plant species surveys, impacts are considered potentially significant.

7.3.2 Less than Significant Impacts

The proposed project is not anticipated to result in any less than significant impacts to special-status plant species.

7.4 Sensitive Natural Communities

7.4.1 Significant Impacts

The proposed project is not anticipated to result in any significant impacts to sensitive natural communities because no sensitive natural communities occur within the project site.

7.4.2 Less than Significant Impacts

The proposed project is not anticipated to result in any less than significant impacts to sensitive natural communities because no sensitive natural communities occur within the project site.

7.5 Special-Status Wildlife Species

7.5.1 Significant Impacts

Impact BIO-2
Project construction could result in direct impacts to nesting birds, causing injury or mortality. Nesting birds are protected under the MBTA; therefore, impacts are considered potentially significant.

For special-status bird species with potential to nest in the project area, direct impacts could include the loss of nests, eggs, and fledglings if vegetation clearing and ground-disturbing activities occur during the nesting season (generally between February 15 and August 31). These species include southern California rufous-crowned sparrow (WL), Bell's sparrow (WL), and Lawrence's goldfinch (BCC).

This impact would be potentially significant because substantial direct impacts to individuals of designated special-status species would occur during a critical period of these species' life cycles and would result in reduced reproductive success during the construction period.

Impact BIO-3
Project construction could result in direct impacts to special-status reptiles such as coastal whiptail (SSC) and coast horned lizard (SSC), causing injury or mortality. Impacts could include the loss of burrows, eggs, and adult and juvenile individuals during vegetation clearing and ground-disturbing activities.

This impact would be potentially significant because substantial direct impacts to individuals of designated special-status species would occur during a critical period of these species' life cycles and would result in reduced reproductive success during the construction period.

7.5.2 Less than Significant Impacts

The proposed project is not anticipated to result in any less than significant impacts to special-status wildlife.

7.6 Jurisdictional Waters/Wetlands

7.6.1 Significant Impacts

Impact BIO-4
The project may result in impacts to aquatic features that are potentially under jurisdiction by the Regional Board and CDFW. These potential impacts would include any permanent impacts made by the establishment of trails and/or the associated development, and any temporary impacts during

construction. These impacts may potentially decrease the amount of jurisdictional waters within the project site and would be considered a significant impact without mitigation.

7.6.2 Less Than Significant Impacts

The proposed project is not anticipated to result in any less than significant impacts to jurisdictional waters/wetlands.

7.7 Wildlife Corridors and Linkages

7.7.1 Significant Impacts

The proposed project is not anticipated to result in any significant impacts to wildlife corridors or linkages.

7.7.2 Less than Significant Impacts

The proposed project is not anticipated to result in any less than significant impacts to wildlife corridors or linkages.

7.8 Regional Resource Planning/Local Policies and Ordinances

7.8.1 Significant Impacts

The proposed project is not anticipated to result in any significant impacts to regional resource planning or any local policies or ordinances.

7.8.2 Less than Significant Impacts

The proposed project is not anticipated to result in any less than significant impacts to regional resource planning or any local policies or ordinances.

8.0 MITIGATION

The purpose of this section is to identify mitigation measures that would reduce the significant impacts to less than significant.

Impact BIO-1: (Impacts to special-status plant species)

BIO-1.1: Prior to the construction of the proposed project, a preconstruction survey will be conducted by qualified botanists within the appropriate blooming period(s) to ensure no special-status plant species are present or will be impacted within the proposed impact areas. If no special-status plant species are found during the preconstruction survey, no further mitigation is required and there will be no impact to special-status plant species.

If populations of special-status plants are found during the preconstruction survey and they are located within permanent or temporary impact areas, avoidance and minimization measures will be explored to protect the special-status plant population(s). If avoidance is not possible, consultation with CDFW will be required prior to project initiation to identify suitable compensatory mitigation for the unavoidable loss of these species. Preparation of a Habitat Mitigation and Monitoring Plan (HMMP) detailing relocation, salvage, and/or restoration of impacted species and subsequent maintenance and monitoring; payment of an in-lieu fee to an agency approved mitigation bank; or acquisition of off-site lands to be held in a restrictive deed for perpetuity would be required to compensate for the loss of habitat occupied by any non-listed special-status plant species found on-site. In the unlikely event a State or federally-listed plant species is present and avoidance is not feasible, consultation with CDFW and/or USFWS would be required prior to initiating any on-site project activities to coordinate any take permits pursuant to State and/or federal regulations and requisite compensatory mitigation. With implementation of these actions, impacts to special-status plant species would be reduced to less than significant.

Implementation of this mitigation measure will reduce potentially significant impacts to special-status plant species to less than significant because they will identify any potential special-status plants that may be impacted by the project site and develop a plan to mitigate impacts or avoid those species if present.

Impact BIO-2 and BIO-3: (Impacts to special-status wildlife species)

BIO-3.1: Prior to the start of construction, every individual working on the project must attend a Worker's Environmental Awareness Program training session delivered by the project biologist. The biological awareness training would include a description of special-status species and sensitive habitats, species identification characteristics, best management practices to be implemented, project-specific avoidance measures that must be followed, and the steps necessary if special-status species are encountered at any time.

BIO-3.2: A qualified biologist shall be present during vegetation clearing and ground disturbance activities to conduct daily clearance surveys of work areas for special-status reptile species. If any wildlife species are found, the project biologist shall relocate the animal(s) to appropriate habitat off-site. Daily monitoring logs will be prepared to document work activities and any relocations that were conducted.

BIO-3.3: All construction pipes, culverts, or similar structures that are stored in the project area during construction for one or more overnight periods shall be either securely capped prior to storage or thoroughly inspected by the contractor and/or the biological monitor for special-status wildlife species or other animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way.

BIO-3.4: To prevent inadvertent entrapment of special-status wildlife species or other animals during construction, the project biologist and/or construction foreman/manager shall ensure all excavated, steep-walled holes or trenches more than 6 inches deep are provided with one or more escape ramps constructed of earthen fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals by the project biologist and/or construction foreman/manager.

BIO-3.5: If vegetation removal is required during the migratory bird nesting season (February 15 to August 31), a preconstruction nesting bird survey must be conducted within one week prior to vegetation removal.

A minimum 300-foot no-disturbance buffer will be established around any active nest of migratory birds and a minimum 500-foot no-disturbance buffer will be established around any nesting raptor or CESA/ESA listed species. A reduced buffer can be established if determined appropriate by the project biologist. The contractor must immediately stop work until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds until a qualified biologist determines the young have fledged or the nest is inactive. In the unlikely event that a State and/or federally listed species is detected, the buffer shall not be reduced and CDFW and/or USFWS shall be notified immediately to coordinate any further measures to avoid impacts to a listed species. The project biologist will monitor any known identified nest site(s) within or adjacent to the project site to confirm buffers are sufficient to avoid impacts to nesting birds and track nesting status.

BIO-3.6: During construction and operation, project materials will not be cast from the project site into nearby habitats; further, project-related trash will be contained and removed to a proper disposal facility. Any excess soil unearthed during construction will be used to create the proposed trail alignments.

BIO-3.7: All construction equipment shall be cleaned prior to use in the project footprint and inspected by the project biologist to confirm it is free of non-native plant material in order to minimize the importation of such material into the project site. All mulch, topsoil, and seed mixes used during post-construction landscaping activities and erosion control BMPs will be free of invasive plant species propagules. A weed abatement program will be implemented should invasive plant species colonize the area within the project footprint post-construction.

Implementation of these mitigation measures will reduce potentially significant impacts to special-status wildlife species to less than significant because they will identify any potential special-status wildlife that may be impacted by the project site and develop a plan to mitigate impacts or avoid those species if present.

Impact BIO-4: (Impacts to jurisdictional waters)

BIO-4.1: Temporary and/or permanent impacts resulting from the proposed project would require a Water Discharge Requirement from the Regional Water Quality Control Board (Regional Board) pursuant to the California Porter-Cologne Water Quality Control Act prior to impacts occurring within jurisdictional areas. The Regional Board also requires that CEQA compliance be obtained prior to obtaining authorization. Compensatory mitigation for impacts would be determined during the formal notification process and must be approved by the Regional Board prior to work occurring. Mitigation is anticipated to include one or more of the following: restoration of impacted features and/or preservation of unaffected features on-site; payment of an in-lieu fee to an agency approved mitigation bank; or acquisition of off-site lands that contain similar jurisdictional features that would be held in a restrictive deed for perpetuity. impacts.

The CDFW regulates alterations to lakes, streambeds, and riparian habitats pursuant to Section 1600 et seq. of the CFGC. Therefore, formal notification to and subsequent authorization from the CDFW would be required prior to commencement of any construction activities within the CDFW jurisdictional areas. The CDFW also requires that CEQA compliance be obtained prior to issuing the final Lake and Streambed Alteration Agreement. Compensatory mitigation for impacts would be determined during the formal notification process and must be approved by CDFW prior to work occurring. Mitigation is anticipated to include one or more of the following: restoration of impacted features and /or preservation of unaffected features on-site; payment of an in-lieu fee to an agency approved mitigation bank; or acquisition of off-site lands that contain similar jurisdictional features that would be held in a restrictive deed for perpetuity.

BIO-4.2: During construction and operation, project materials will not be cast from the project site into nearby habitats; further, project-related debris, excess spoils, and trash will be contained and removed to a proper disposal facility.

BIO-4.3: All construction equipment shall be cleaned prior to use in the project footprint and inspected by the project biologist to confirm it is free of non-native plant material in order to minimize the importation of such material into the project site. All mulch, topsoil, and seed mixes used during post-construction landscaping activities and erosion control BMPs will be free of invasive plant species propagules. A weed abatement program will be implemented should invasive plant species colonize the area within the project footprint post-construction.

Implementation of these mitigation measures will reduce potentially significant impacts to jurisdictional waters/wetlands to less than significant because they will identify any potential waters/wetlands that may be impacted by the project site and develop a plan to mitigate impacts or avoid these resources.

8.1 Unavoidable Significant Impacts

The proposed project, inclusive of mitigation measures, will mitigate all significant adverse impacts to any special-status plant and wildlife species and jurisdictional areas.

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APPENDIX A

SITE PHOTOGRAPHS

Photograph 1: Looking east from the western side of the project site.

Photograph 2: Looking east from the western side of the project site

Photograph 3: Looking north from the western side of the project site.

Photograph 4: Looking west from the western side of the project site.

Photograph 5: Looking north near the middle of the project site.

Photograph 6: Looking west near the middle of the project site.

Photograph 7: Looking southwest from Blue Cloud Road near the northern end of the project site.

Photograph 8: Looking southeast along Blue Cloud near the middle of the project site.

Photograph 9: Looking west along Blue Cloud near the middle of the project site.

Photograph 10: Looking northeast from the south end of the project site.

APPENDIX B

LITERATURE REVIEW RESULTS

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Warm Springs Mountain (3411855) OR Newhall (3411845) OR Mint Canyon (3411844) OR Agua Dulce (3411843) OR Sleepy Valley (3411853) OR Burnt Peak (3411865) OR Lake Hughes (3411864) OR Del Sur (3411863) OR Green Valley (3411854))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S4	WL
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2	SSC
Anniella pulchra Northern California legless lizard	ARACC01020	None	None	G3	S2S3	SSC
Anniella spp. California legless lizard	ARACC01070	None	None	G3G4	S3S4	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Artemisiospiza belli belli Bell's sparrow	ABPBX97021	None	None	G5T2T3	S3	WL
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Berberis nevinii Nevin's barberry	PDBER060A0	Endangered	Endangered	G1	S1	1B.1
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Bombus pensylvanicus American bumble bee	IIHYM24260	None	None	G3G4	S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
California Walnut Woodland California Walnut Woodland	CTT71210CA	None	None	G2	S2.1	
Calochortus clavatus var. gracilis slender mariposa-lily	PMLIL0D096	None	None	G4T2T3	S2S3	1B.2
Calochortus palmeri var. palmeri Palmer's mariposa-lily	PMLIL0D122	None	None	G3T2	S2	1B.2
Calochortus plummerae Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
Calystegia peirsonii Peirson's morning-glory	PDCON040A0	None	None	G4	S4	4.2
Catostomus santaanae Santa Ana sucker	AFCJC02190	Threatened	None	G1	S1	
Charadrius montanus mountain plover	ABNNB03100	None	None	G3	S2	SSC
Chorizanthe parryi var. fernandina San Fernando Valley spineflower	PDPGN040J1	None	Endangered	G2T1	S1	1B.1
Chorizanthe parryi var. parryi Parry's spineflower	PDPGN040J2	None	None	G3T2	S2	1B.1
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Cryptantha clokeyi Clokey's cryptantha	PDBOR0A3M0	None	None	G3	S3	1B.2
Dodecahema leptoceras slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S3	
Emys marmorata western pond turtle	ARAAD02030	Proposed Threatened	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Euderma maculatum spotted bat	AMACC07010	None	None	G4	S3	SSC
Euphydryas editha quino quino checkerspot butterfly	IILEPK405L	Endangered	None	G4G5T1T2	S1S2	
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Gasterosteus aculeatus williamsoni unarmored threespine stickleback	AFCPA03011	Endangered	Endangered	G5T1	S1	FP
Gila orcuttii arroyo chub	AFCJB13120	None	None	G2	S2	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
Harpagonella palmeri Palmer's grapplinghook	PDBOR0H010	None	None	G4	S3	4.2
Helianthus inexpectatus Newhall sunflower	PDAST4N250	None	None	G1	S1	1B.1
Helminthoglypta fontiphila Soledad shoulderband	IMGASC2250	None	None	G1	S1	
Helminthoglypta traskii pacoimensis Pacoima shoulderband	IMGASC2472	None	None	G1G2T1	S1	
Helminthoglypta vasquezi Vasquez shoulderband	IMGASC2660	None	None	G1	S1	
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus cinereus hoary bat	AMACC05032	None	None	G3G4	S4	
Lepechinia rossii Ross' pitcher sage	PDLAM0V060	None	None	G1	S1	1B.2
Lepus californicus bennettii San Diego black-tailed jackrabbit	AMAEB03051	None	None	G5T3T4	S3S4	
Mainland Cherry Forest Mainland Cherry Forest	CTT81820CA	None	None	G1	S1.1	
Navarretia fossalis spreading navarretia	PDPLM0C080	Threatened	None	G2	S2	1B.1
Navarretia setiloba Piute Mountains navarretia	PDPLM0C0S0	None	None	G2	S2	1B.1
Neotamias speciosus speciosus lodgepole chipmunk	AMAFB02172	None	None	G4T3T4	S2	
Onychomys torridus ramona southern grasshopper mouse	AMAFF06022	None	None	G5T3	S3	SSC
Opuntia basilaris var. brachyclada short-joint beavertail	PDCAC0D053	None	None	G5T3	S3	1B.2
Orcuttia californica California Orcutt grass	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
Perognathus alticola inexpectatus Tehachapi pocket mouse	AMAFD01082	None	None	G2T1T2	S1S2	SSC
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G4	S4	SSC
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
Pseudognaphalium leucocephalum white rabbit-tobacco	PDAST440C0	None	None	G4	S2	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rana boylii pop. 6 foothill yellow-legged frog - south coast DPS	AAABH01056	Endangered	Endangered	G3T1	S1	
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Riversidian Alluvial Fan Sage Scrub Riversidian Alluvial Fan Sage Scrub	CTT32720CA	None	None	G1	S1.1	
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Sidalcea neomexicana salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
Southern California Threespine Stickleback Stream Southern California Threespine Stickleback Stream	CARE2320CA	None	None	GNR	SNR	
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Mixed Riparian Forest Southern Mixed Riparian Forest	CTT61340CA	None	None	G2	S2.1	
Southern Riparian Forest Southern Riparian Forest	CTT61300CA	None	None	G4	S4	
Southern Riparian Scrub Southern Riparian Scrub	CTT63300CA	None	None	G3	S3.2	
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Southern Willow Scrub Southern Willow Scrub	CTT63320CA	None	None	G3	S2.1	
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
Streptanthus campestris southern jewelflower	PDBRA2G0B0	None	None	G3	S3	1B.3
Symphyotrichum greatae Greata's aster	PDASTE80U0	None	None	G2	S2	1B.3
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis hammondii two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
Valley Needlegrass Grassland Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
Valley Oak Woodland Valley Oak Woodland	CTT71130CA	None	None	G3	S2.1	
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Wildflower Field	CTT42300CA	None	None	G2	S2.2	
Wildflower Field						

Record Count: 82

California Native Plant Society

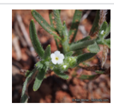
CNPS Rare Plant Inventory

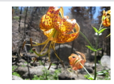
Search Results

41 matches found. Click on scientific name for details

Search Criteria: Quad is one of [**3411855:3411845:3411844:3411843:3411853:3411865:3411864:3411863:3411854**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	None	None	G5? T3T4	S3S4	4.2		1994-01-01	 © 2008 Aaron Schusteff
Berberis nevinii	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar-Jun	FE	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	None	None	G3G4	S3S4	4.2	Yes	1974-01-01	No Photo Available
Calochortus clavatus var. avius	Pleasant Valley mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G4T2	S2	1B.2	Yes	1980-01-01	No Photo Available
Calochortus clavatus var. clavatus	club-haired mariposa lily	Liliaceae	perennial bulbiferous herb	(Mar)May-Jun	None	None	G4T3	S3	4.3	Yes	1974-01-01	No Photo Available
Calochortus clavatus var. gracilis	slender mariposa-lily	Liliaceae	perennial bulbiferous herb	Mar-Jun(Nov)	None	None	G4T2T3	S2S3	1B.2	Yes	1994-01-01	No Photo Available
Calochortus palmeri var. palmeri	Palmer's mariposa-lily	Liliaceae	perennial bulbiferous herb	Apr-Jul	None	None	G3T2	S2	1B.2	Yes	1994-01-01	No Photo Available
Calochortus plummerae	Plummer's mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G4	S4	4.2	Yes	1994-01-01	No Photo Available
Calystegia peirsonii	Peirson's morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	None	None	G4	S4	4.2	Yes	1974-01-01	No Photo Available
Cercocarpus betuloides var. blancheae	island mountain-mahogany	Rosaceae	perennial evergreen shrub	Feb-May	None	None	G5T4	S4	4.3	Yes	1974-01-01	No Photo Available

Chorizanthe parryi var. fernandina	San Fernando Valley spineflower	Polygonaceae	annual herb	Apr-Jul	None	CE	G2T1	S1	1B.1	Yes	1974-01-01	No Photo Available
Chorizanthe parryi var. parryi	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	None	None	G3T2	S2	1B.1	Yes	1994-01-01	 © 2012 Keir Morse
Cryptantha clokeyi	Clokey's cryptantha	Boraginaceae	annual herb	Apr	None	None	G3	S3	1B.2	Yes	1994-01-01	No Photo Available
Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov	None	None	G4	S4	4.2		2001-01-01	No Photo Available
Delphinium parryi ssp. purpureum	Mt. Pinos larkspur	Ranunculaceae	perennial herb	May-Jun	None	None	G4T4	S4	4.3	Yes	1974-01-01	No Photo Available
Dodecahema leptoceras	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available
Gilia latiflora ssp. cuyamensis	Cuyama gilia	Polemoniaceae	annual herb	Apr-Jun	None	None	G5?T4	S4	4.3	Yes	1974-01-01	 © 2012 Michael Charters
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	None	None	G4	S3	4.2		1980-01-01	 © 2015 Keir Morse
Helianthus inexpectatus	Newhall sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	None	None	G1	S1	1B.1	Yes	2010-08-16	 © 2012 Anuja Parikh and Nathan Gale
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2		1994-01-01	No Photo Available
Hulsea vestita ssp. gabrielensis	San Gabriel Mountains sunflower	Asteraceae	perennial herb	May-Jul	None	None	G5T3	S3	4.3	Yes	1994-01-01	 © 2013 Anuja Parikh and Nathan Gale

Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	Yes	1994-01-01	 © 2020 Zoya Akulova
Juncus acutus ssp. leopoldii	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	None	None	G5T5	S4	4.2		1988-01-01	 © 2019 Belinda Lo
Lepechinia fragrans	fragrant pitcher sage	Lamiaceae	perennial shrub	Mar-Oct	None	None	G3	S3	4.2	Yes	1974-01-01	 © 2014 Debra L. Cook
Lepechinia rossii	Ross' pitcher sage	Lamiaceae	perennial shrub	May-Sep	None	None	G1	S1	1B.2	Yes	2006-10-26	No Photo Available
Lilium humboldtii ssp. ocellatum	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4T4?	S4?	4.2	Yes	1980-01-01	 © 2008 Thomas Stoughton
Lupinus elatus	silky lupine	Fabaceae	perennial herb	Jun-Aug	None	None	G4	S4	4.3	Yes	1974-01-01	No Photo Available
Monardella exilis	Mojave monardella	Lamiaceae	annual herb	Apr-Sep	None	None	G3?	S3	4.2		2022-08-04	No Photo Available
Navarretia fossalis	spreading navarretia	Polemoniaceae	annual herb	Apr-Jun	FT	None	G2	S2	1B.1		1980-01-01	No Photo Available
Navarretia setiloba	Piute Mountains navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Opuntia basilaris var. brachyclada	short-joint beavertail	Cactaceae	perennial stem	Apr-Jun(Aug)	None	None	G5T3	S3	1B.2	Yes	1980-01-01	No Photo Available
Orcuttia californica	California Orcutt grass	Poaceae	annual herb	Apr-Aug	FE	CE	G1	S1	1B.1		1974-01-01	No Photo Available
Perideridia pringlei	adobe yampah	Apiaceae	perennial herb	Apr-Jun(Jul)	None	None	G4	S4	4.3	Yes	1974-01-01	No Photo Available
Phacelia mohavensis	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	None	None	G4Q	S4	4.3	Yes	1994-01-01	No Photo Available
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	None	None	G4	S2	2B.2		2006-11-03	No Photo Available

Quercus durata var. gabrielensis	San Gabriel oak	Fagaceae	perennial evergreen shrub	Apr-May	None	None	G4T3	S3	4.2	Yes	2001-01-01	No Photo Available
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2		1994-01-01	No Photo Available
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	None	None	G4	S2	2B.2		1994-01-01	No Photo Available
Streptanthus campestris	southern jewelflower	Brassicaceae	perennial herb	(Apr)May-Jul	None	None	G3	S3	1B.3		1994-01-01	No Photo Available
Symphyotrichum greatae	Greata's aster	Asteraceae	perennial rhizomatous herb	Jun-Oct	None	None	G2	S2	1B.3	Yes	1974-01-01	 © 2006 Michael Charters
Yucca brevifolia						CC			CBR		2011-12-13	No Photo Available

Showing 1 to 41 of 41 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 1 April 2024].

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Los Angeles County, California

Local office

Ventura Fish And Wildlife Office

(805) 644-1766
(805) 644-3958
FW8VenturaSection7@FWS.Gov

2493 Portola Road, Suite B
Ventura, CA 93003-7726

https://www.fws.gov/Ventura

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
California Condor *Gymnogyps californianus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
Coastal California Gnatcatcher *Polioptila californica californica* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo *Vireo bellii pusillus* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS

Arroyo (=arroyo Southwestern) Toad Anaxyrus californicus — Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/3762

California Red-legged Frog Rana draytonii — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2891

Fishes

NAME	STATUS
Unarmored Threespine Stickleback Gasterosteus aculeatus williamsoni Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7002	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

NAME	STATUS
Riverside Fairy Shrimp Streptocephalus woottoni Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8148	Endangered

Vernal Pool Fairy Shrimp Branchinecta lynchi | Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/498

Flowering Plants

NAME	STATUS
California Orcutt Grass Orcuttia californica Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4923	Endangered
Gambel's Watercress Rorippa gambellii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4201	Endangered
Marsh Sandwort Arenaria paludicola Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2229	Endangered
Nevin's Barberry Berberis nevinii Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8025	Endangered
Slender-horned Spineflower Dodecahema leptoceras Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4007	Endangered
Spreading Navarretia Navarretia fossalis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1334	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season ( )

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

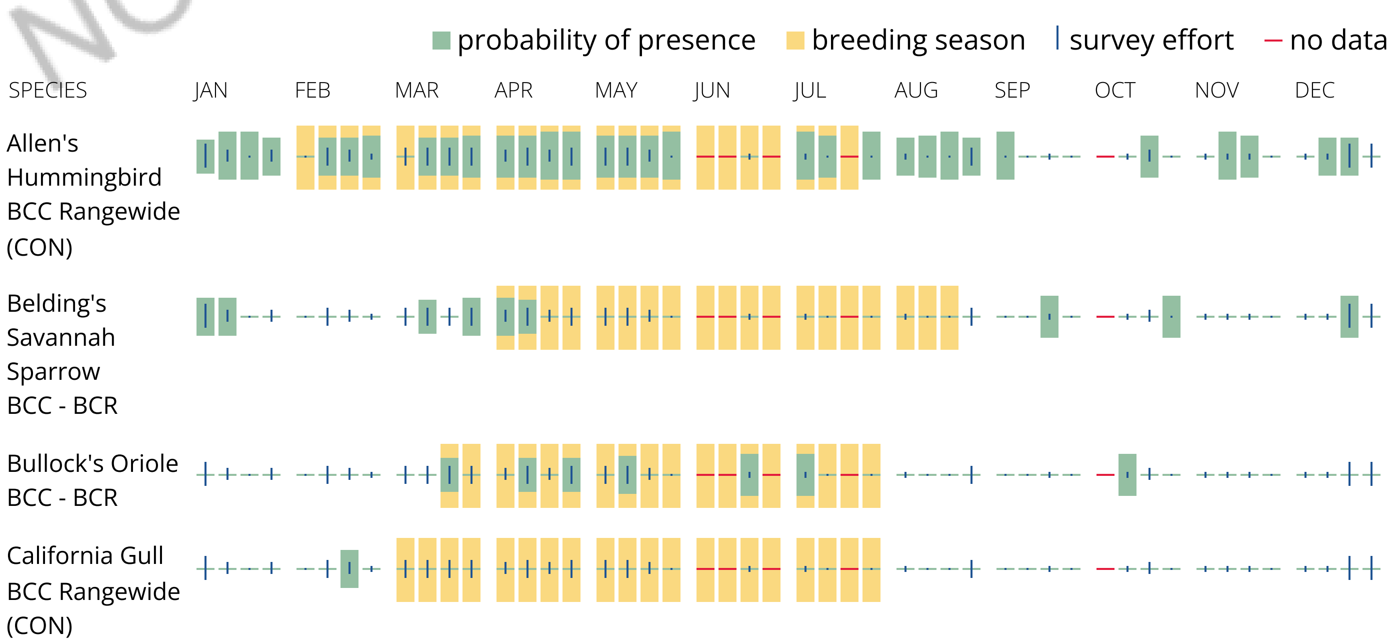
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

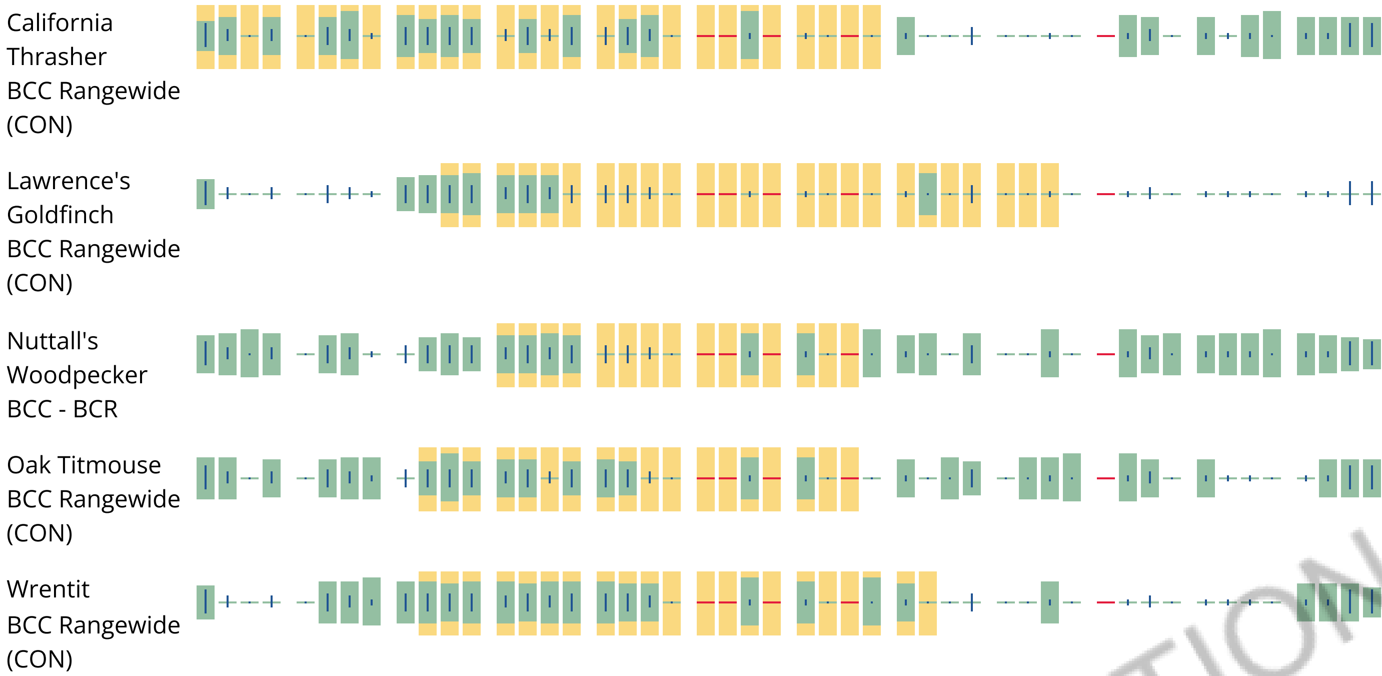
No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE
- R4SBA
- R4SBC

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX C

USFWS NATIONAL WETLANDS INVENTORY

U.S. Fish and Wildlife Service

National Wetlands Inventory

Blue Cloud Bike Park

February 12, 2024

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

APPENDIX D

SPECIES OBSERVED LIST

Table D-1: Wildlife Species Observed List

*Scientific Name**	Common Name	Special-Status Rank**
Reptiles		
Sceloporus occidentalis	western fence lizard	
Birds		
Aeronautes saxatalis	white-throated swift	
Aphelocoma californica	California scrub jay	
Calypte anna	Anna's hummingbird	
Cathartes aura	turkey vulture	
Chamaea fasciata	wrentit	
Colaptes auratus	northern flicker	
Corvus brachyrhynchos	American crow	
Corvus corax	common raven	
Falco sparverius	American kestrel	
Haemorhous mexicanus	house finch	
Melospiza melodia	song sparrow	
Melozone crissalis	California towhee	
Mimus polyglottos	northern mockingbird	
Phainopepla nitens	phainopepla	
Spinus lawrencei*	Lawrence's goldfinch	BCC
Spinus psaltria	lesser goldfinch	
Sturnella neglecta	western meadowlark	
Thryomanes bewickii	Bewick's wren	
Toxostoma redivivum	California thrasher	
Troglodytes aedon	house wren	
Zonotrichia leucophrys	white-crowned sparrow	
Mammals		
Canis latrans	coyote	
Lynx rufus	bobcat	
Otospermophilus beecheyi	California ground squirrel	
Sylvilagus audubonii	desert cottontail	
Thomomys bottae	Botta's pocket gopher	
Invertebrates		
Apis mellifera*	*honeybee*	
Eleodes osculans	*darkling beetle*	
***Cicada* sp.**	*cicada*	

* Non-native species

** **Special-Status Rank**

U.S. Fish and Wildlife Service

BCC Bird of Conservation Concern – migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent highest conservation priorities. The list is based on an assessment of several factors, including population abundance and trends, threats on breeding and nonbreeding grounds and size of breeding and nonbreeding ranges. Bird species considered for the BCC include: nongame birds gamebirds without hunting seasons subsistence-hunted nongame birds in Alaska ESA candidate, proposed, and recently delisted species

Table D-2: Plant Species Observed List

*Scientific Name**	Common Name	Cal-IPC Rank**	Special-Status Rank***
Acmispon glaber	deerweed		
Adenostoma fasciculatum	chamise		
Amsinckia intermedia	common fiddleneck		
Astragalus trichopodus	Santa Barbara milk vetch		
Artemisia californica	coastal sage brush		
Atriplex canescens	fourwing saltbush		
Bromus rubens*	red brome	High	
Centaurea melitensis*	tocalote	Moderate	
Elymus condensatus	giant wild rye		
Eriogonum fasciculatum	California buckwheat		
Erodium botrys*	big heron bill		
Gutierrezia californica	California matchweed		
Heteromeles arbutifolia	toyon		
Hirschfeldia incana*	short-podded mustard	Moderate	
Lonicera subspicata	southern honeysuckle		
Malva parviflora*	chesseweed		
***Opuntia* sp.**	cactus sp.		
Phoradendron leucarpum	American mistletoe		
Quercus john-tuckeri	Tucker's oak		
Salvia apiana	white sage		
Salvia mellifera	black sage		
Sambucus mexicana	blue elderberry		
Schinus molle*	Peruvian peppertree	Limited	
Sisymbrium irio*	London rocket	Moderate	
Sonchus asper*	prickly sowthistle		
Stipa lepida	foothill needle grass		

* Non-native species

** **California Invasive Plant Council (Cal-IPC) Ratings**

High — These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate — These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited — These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

APPENDIX E

POTENTIALLY OCCURRING SPECIAL-STATUS BIOLOGICAL RESOURCES

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
SPECIAL-STATUS WILDLIFE SPECIES				
Accipiter cooperii Cooper's hawk	WL G5 S4	Yearlong resident of California. Generally, found in forested areas up to 3,000 feet above mean sea level (amsl) in elevation, especially near edges and rivers. Prefers hardwood stands and mature forests, but can be found in urban and suburban areas where there are tall trees (25 to 50 feet high) for nesting. Prefers pines, oaks, Douglas-firs, beeches, spruces for nesting. Common in open areas during nesting season.	No	**Not Expected**: Suitable foraging and nesting habitats preferred by this species are not present within the project site.
Agelaius tricolor tricolored blackbird	FT SSC G1G2 S2	Range is limited to the coastal areas of the Pacific coast of North America, from Northern California to upper Baja California. Can be found in a wide variety of habitat including annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields, cattle feedlots, and dairies. Occasionally forage in riparian scrub habitats along marsh borders. Basic habitat requirements for breeding include open accessible water, protected nesting substrate freshwater marsh dominated by cattails (*Typha* spp.), willows (*Salix* spp.), and bulrushes (*Schoenoplectus* spp.), and either flooded or thorny/spiny vegetation and suitable foraging space providing adequate insect prey.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
Aimophila ruficeps canescens southern California rufous-crowned sparrow	WL G5T3 S4	Yearlong resident that is typically found between 3,000 and 6,000 feet amsl. Breed in sparsely vegetated scrubland on hillsides and canyons. Prefers coastal sage scrub dominated by California sagebrush (*Artemisia californica*), but they can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.	No	**High:** Suitable foraging and nesting habitat is present within the project site. In addition, the closest extant occurrence (CNDDB; Occ. 178) is roughly 0.6 mile east of the project site.
Ammodramus savannarum grasshopper sparrow	SSC G5 S3	Yearlong resident along the coast of southern California. Occurs in grassland, upland meadow, pasture, hayfield, and old field habitats. Optimal habitat contains short- to medium-height bunch grasses interspersed with patches of bare ground, a shallow litter layer, scattered forbs, and few shrubs. May inhabit thickets, weedy lawns, vegetated landfills, fence rows, open fields, or grasslands.	No	**Low:** Marginally suitable foraging and nesting habitats preferred by this species are present within the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
Anaxyrus californicus arroyo toad	FE SSC G2G3 S2	Occurs in semi-arid regions near washes or intermittent streams, including valley-foothill grasslands, desert riparian, desert washes, and oak woodlands. Breeding habitat consists of shallow streams with a mixture of sandy and gravelly substrate and sandy terraces. Generally, requires mulefat (*Baccharis salicifolia*) and willow (*Salix* spp.) in the streambed for vegetative canopy for breeding areas and forages for insects primarily under oak (*Quercus* spp.), Fremont cottonwood (*Populus fremontii*), and California sycamore (*Platanus racemosa*) trees. Occurs at elevations from near sea level to about 4,600 feet amsl.	No	**Not Expected:** Suitable habitats preferred by this species are not present within the project site.
Anniella pulchra Northern California legless lizard	SSC G3 S2S3	Occurs from the southern edge of the San Joaquin River in northern Contra Costa County south to the Ventura County, south of which there is a wide area where the species of *Anniella* is or are unknown. Occurs in moist warm loose soil with plant cover. Moisture is essential. Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with California sycamores (*Platanus racemosa*), Fremont cottonwoods (*Populus fremontii*), or oaks (*Quercus* spp.). Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine *(Lupinus* sp.) and mock heather (*Ericameria ericoides*) often indicate suitable habitat. Often can be found under surface objects such as rocks, boards, driftwood, and logs. Can also be found by gently raking leaf litter under bushes and trees. Sometimes found in suburban gardens in southern California.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site. Additionally, the project is located outside the known range for this species.
Anniella pulchra California legless lizard	SSC G3G4 S3S4	Resemble small snakes. Rarely found crawling in the open, except at night. Typically found under objects or leaves, often in gardens in southern California. Not commonly seen.	No	**Low:** Suitable soils and preferred by this species are not present within the project site.
Antrozous pallidus pallid bat	SSC G4 S3	Locally common species locally common in the Great Basin, Mojave, and Sonoran deserts (specifically Sonoran life zone) and grasslands throughout the western U.S. Also occurs in shrublands, woodlands, and forests from sea level to 8,000 ft amsl. Prefers rocky outcrops, cliffs, and crevices for roosting with access to open habitats for foraging. May also roost in caves, mines, bridges, barns, porches, and bat boxes, and even on the ground under burlap sacks, stone piles, rags, baseboards, and rocks.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.
Arizona elegans occidentalis California glossy snake	SSC G5T2 S2	Inhabits arid scrub, rocky washes, grasslands, and chaparral habitats. Appears to prefer microhabitats of open areas and areas with soil loose enough for easy burrowing.	No	**Low**: Suitable soils preferred by this species are not present within the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
Artemisiospiza belli belli Bell's sparrow	WL G5T2T3 S3	This species has a wide, but sparse distribution in western Riverside County, specifically within the "Riverside lowlands, San Jacinto Foothills, Santa Ana Mountains, and Desert Transition Bioregions. Yearlong resident on the coastal side of southern California mountains. Breeds in coastal sage scrub and chaparral habitats from February to August. They require semi-open habitats with evenly spaced shrubs one to two meters high. Occurs in chaparral dominated by fairly dense stands of chamise (*Adenostoma fasciculatum*).	No	**High:** Suitable foraging and nesting habitats preferred by this species are present within the project site. In addition, the nearest extant occurrence (CNDDB; Occ. 57) is roughly 0.6 mile east of the project site.
Aspidoscelis tigris stejnegeri coastal whiptail	SSC G5T5 S3	This subspecies is found in coastal southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, and north into Ventura County. Ranges south into Baja California. Found in a variety of ecosystems, primarily hot and dry open areas with sparse vegetation in chaparral, woodland, and riparian areas. Associated with rocky areas with little vegetation or sunny microhabitats within shrub or grassland associations.	No	**High:** Suitable habitat is located within the project site, and there are known occurrences within 0.60 miles of the project site.
Athene cunicularia burrowing owl	SSC G4 S2	Yearlong resident of California. Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	**Not Expected:** Marginally suitable habitat is located within the project, however due to frequent anthropogenic disturbances, the species is not expected.
Bombus crotchii Crotch's bumble bee	SCE G2 S2	Found from coastal California east to the Sierra-Cascade crest and south into Mexico. Primarily occurs in California, including the Mediterranean region, Pacific coast, western desert, great valley, and adjacent foothills through most of southwestern California. Has also been recorded in Baja California, Baja California Sur, and in southwest Nevada. Inhabits open grassland and scrub habitats. Primarily nests underground. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	No	**Low:** Marginally suitable foraging habitat available on site, additionally there are no occurrences within 3 miles of the project site.
Branchinecta lynchi vernal pool fairy shrimp	FT G3 S3	Endemic to California and only found in vernal pools. Vernal pool habitats form in depressions above an impervious substrate layer, or claypan/duripan. This species does not occur in riverine, marine, or other permanent bodies of water. When the temporary pools dry, offspring persist in suspended development as desiccation-resistant embryos (commonly called cysts) in the pool substrate until the return of winter rains and appropriate temperatures allow some of the cysts to hatch.	No	**Not Expected:** Suitable vernal pool habitat preferred by this species are not present within the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
Buteo regalis ferruginous hawk	WL G4 S3S4	Endemic to California and only found in vernal pools. Vernal pool habitats form in depressions above an impervious substrate layer, or claypan/duripan. This species does not occur in riverine, marine, or other permanent bodies of water. When the temporary pools dry, offspring persist in suspended development as desiccation-resistant embryos (commonly called cysts) in the pool substrate until the return of winter rains and appropriate temperatures allow some of the cysts to hatch.	No	**Not Expected:** Suitable habitat is not present within the project site.
Buteo swainsoni Swainson's hawk	ST G5 S4	Typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.	No	**Low (foraging):** Potential to occur within the site as a transient during migration.
Catostomus santaanae Santa Ana sucker	FT G1 S1	Occur in the watersheds draining the San Gabriel and San Bernardino Mountains of southern California. Streams that Santa Ana Sucker inhabit are generally perennial streams with water ranging in depth from a few inches to several feet and with currents ranging from slight to swift.	No	**Not Expected:** Suitable habitat preferred by this species are not present within the project site.
Charadrius montanus mountain plover	SSC G3 S2	Uncommon winter resident in southern California, primarily from September to mid-March, with peak numbers from December through February. At all seasons, mountain plovers are strongly associated with short-grass prairie habitats, or their equivalents, that are flat and nearly devoid of vegetation. Overall, it avoids high and dense cover. Within southern California, the largest numbers occur in grasslands and agricultural areas in the interior. Does not nest in California.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT SE G5T2T3 S1	Uncommon summer resident where its breeding distribution is restricted to isolated sites in the Sacramento, Armargosa, Kern, Santa Ana, and Colorado River valleys. The species requires large patches of multi-layered riparian forest, with cottonwoods and willows. The presence of standing or flowing surface water under the riparian canopy is also preferred. Mesquite (Prosopis spp.) groves may also be used, but usually only when cottonwood-willow habitat is unavailable.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
Corynorhinus townsendii Townsend's big-eared bat	SSC G4 S2	Found throughout California, but the details of its distribution area not well known. Now considered uncommon in California. Details of its distribution are not well known. This species is found in all but subalpine and alpine habitats and may be found at any season throughout its range. Most abundant in mesic habitats. Requires caves, mines, tunnels, buildings, or other human-made structures for roosting.	No	**Low (foraging)**: Suitable roosting habitat preferred by the species is not present within the project site.

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Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
Danaus plexippus Monarch butterfly	FCE G4T1T2Q S2	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts are located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	No	**Not Expected: S**uitable habitat preferred by this species is not present within the project site
Elanus leucurus white-tailed kite	FP G5 S3S4	Yearlong resident along the coastal ranges and valleys of California. Occurs in low elevation, open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Uses trees with dense canopies for cover. Important prey item is the California vole (*Microtus californicus*). Nests in tall (20 to 50 feet) coast live oaks (*Quercus agrifolia*).	No	**Low (foraging):** Suitable nesting habitats preferred by this species are not present within the project site.
Empidonax traillii extimus southwestern willow flycatcher	FE SE G5T2 S3	Uncommon summer resident in southern California primarily found in lower elevation riparian habitats occurring along streams or in meadows. The structure of suitable breeding habitat typically consists of a dense mid-story and understory and can also include a dense canopy. Nest sites are generally located near surface water or saturated soils. The presence of surface water, swampy conditions, standing or flowing water under the riparian canopy are preferred.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
Emys marmorata western pond turtle	FPT SSC G3G4 S3	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater. Found at elevations from sea level to over 5,900 feet amsl.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Eremophila alpestris actia California horned lark	WL G5T4Q S4	Yearlong resident of California. This subspecies is typically found in coastal regions. Breed in level or gently sloping shortgrass prairie, montane meadows, "bald" hills, open coastal plains, fallow grain fields, and alkali flats. Within southern California, California horned larks breed primarily in open fields, (short) grasslands, and rangelands. Nests on the open ground.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
Euderma maculatum spotted bat	SSC G4 S3	Found in a small number of localities, mostly in the foothills, mountains, and desert regions of southern California. Preferred habitats include arid deserts, grasslands and mixed conifer forests from sea level to 10,000 feet amsl. Forages over water and near the ground. Roosts in rock crevices on cliffs, occasionally found in caves and buildings.	No	**Low:** Marginally suitable foraging habitat preferred by the species present within the project site

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Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
Euphydryas editha quino quino checkerspot butterfly	FE G4G5T1T2 S1S2	Occupies a variety of habitat types that support California plantain (*Plantago erecta*), the species primary larval host plant, including grasslands, coastal sage scrub, chamise chaparral, red shank chaparral, juniper woodland, and semi-desert scrub. Can also be found in desert canyons and washes at the lower edge of chaparral habitats.	No	**Not Expected:** Although marginally suitable foraging habitat preferred by the species present within the project site, today, the Quino checkerspot butterfly is only known from western Riverside County, southern San Diego County, and northern Baja California, Mexico.
Falco mexicanus prairie falcon	WL G5 S4	The prairie falcon is associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields during the winter season, and desert scrub areas, all typically dry environments of western North American where there are cliffs or bluffs for nest sites. The species requires sheltered cliff ledges for cover and nesting which may range in height from low rock outcrops of 30 feet to vertical, 400 feet high (or more) cliffs and typically overlook some treeless country for hunting. Open terrain is used for foraging.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
Gasterosteus aculeatus williamsoni unarmored threespine stickleback	FE SE FP G5T1 S1	Small, scale less freshwater fish of up to 2 inches in length inhabiting slow-moving reaches or quiet-water microhabitats in streams and rivers. Restricted to three areas: the upper Santa Clara River and its tributaries in Los Angeles County, San Antonio Creek on Vandenberg Air Force Base in Santa Barbara County, and the Shay Creek vicinity (Shay Pond, Sugarloaf Pond, Juniper Springs, Motorcycle Pond, Shay Creek, Wiebe Pond, and Baldwin Lake) in San Bernardino County. Favorable habitats are shaded by dense and abundant vegetation. In open reaches, algal mats or barriers (e.g. sand bars, floating vegetation, low-flow road crossings) provide refuge.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Gila orcuttii arroyo chub	SSC G2 S2	Warm streams of the Los Angeles Plain, which are typically muddy torrents during the winter, and clear quiet brooks in the summer, possibly drying up in places. They are found both in slow-moving and fast-moving sections, but generally deeper than 16 inches.	No	**Not Expected:** Suitable habitat preferred by the species is not present within the project site
Gymnogyps californianus California condor	FE SE FP G1 S1	Current distribution of California condor is considered to be all of the Los Padres National Forest and western half of the Angeles National Forest (USDA Forest Service 2000), with some occasionally found in the Sequoia National Forest. Nest sites are typically located in chaparral, conifer forest, or oak woodland habitats. Nest sites are in cliff caves in the mountains. Some have nested in large cavities within sequoias *(Sequoiadendron giganteum*).	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.

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Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
Haliaeetus leucocephalus bald eagle	SE FP G5 S3	Locally common yearlong resident of southern California. Typically prefer areas near large water bodies such as sea coasts, coastal estuaries and inland lakes and rivers, in many areas, these birds are found within two miles of a water source. Most populations, specifically those in northern regions, migrate to southern, milder climates annually. Generally, these birds nest in the canopy of tall, coniferous trees, surrounded by smaller trees. They have been reported nesting on the ground, on cliffs, on cellular phone towers, on electrical poles and in artificial nesting towers.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
Lanius ludovicianus loggerhead shrike	SSC G4 S4	Yearlong resident of California. Prefers open habitats with bare ground, scattered shrubs, and areas with low or sparse herbaceous cover including open-canopied valley foothill hardwood, riparian, pinyon-juniper desert riparian, creosote bush scrub, and Joshua tree woodland. Requires suitable perches including trees, posts, fences, utility lines, or other perches. Nests in branches up to 14 feet above the ground frequently in a shrub with thorns or with tangled branching habitats.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
Onychomys torridus ramona southern grasshopper mouse	SSC G5T3 S3	Common in arid desert habitats of the Mojave and southern Central Valley of California. Known elevation range is generally below 3,000 feet amsl. Little is known about habitat requirements; however, it is commonly found in scrub habitats with friable soils for digging in desert areas. It is believed that alkali desert scrub and desert scrub habitats are preferred, with somewhat lower densities expected in other desert habitats, including succulent shrub, wash, and riparian areas. Also occurs in coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitats.	No	**Not Expected**: Suitable habitat preferred by the species is not present within the project site.
Perognathus alticola inexpectatus Tehachapi pocket mouse	SSC G2T1T2 S1S2	Found in arid annual grassland and desert shrub communities, but also in fallow grain fields and within Russian thistle. This small mammal burrows for cover and nesting and aestivates and hibernates during extreme weather. Forages on open ground and under shrubs.	No	**Not Expected:** Suitable habitat preferred by the species is not present within the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
Phrynosoma blainvillii coast horned lizard	SSC G4 S4	Occurs in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. Its elevational range extends up to 4,000 feet in the Sierra Nevada foothills and up to 6,000 feet in the mountains of southern California. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (e.g. fire, floods, unimproved roads, grazing lands, and fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	**Moderate:** Suitable habitat is located within the project site, and there are known occurrences within 3 miles of the project site.
Polioptila californica coastal California gnatcatcher	FT SSC G4G5T3Q S2	Yearlong resident of sage scrub habitats that are dominated by California sagebrush. This species generally occurs below 750 feet amsl in coastal regions and below 1,500 feet amsl inland. Ranges from Ventura County, south to San Diego County and northern Baja California and it is less common in sage scrub with a high percentage of tall shrubs. Prefers habitat with more low-growing vegetation.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.
***Rana boylii* pop. 6** foothill yellow-legged frog – south coast DPS	FT ST G3T1 S1	Isolated populations are also known from the mountains of Los Angeles County. Occur in streams flowing through a variety of vegetation types, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, yellow pine (*Pinus ponderosa*), mixed conifer, mixed chaparral, and wet meadows. Rarely occur in areas with greater than 90% canopy closure. Breeding and rearing habitat is generally located in gently flowing, low-gradient stream sections with variable substrates predominated by cobble and boulder.	No	**Not Expected:** Suitable habitat preferred by the species is not present within the project site
Rana draytonii California red-legged frog	FT SSC G2G3 S2S3	The species historically occurred in the San Gabriel Wilderness Area of the Angeles National Forest; there were no post-1970 observations in this area or nearby parts of the Angeles National Forest. In 1999, a population (estimated between 15 and 25 adults) was located on the Angeles National Forest in the San Francisquito drainage. Breeding sites are in a variety of aquatic habitats including streams, deep pools, backwaters within streams and creeks, ponds, marshes, sag ponds, dune ponds, lagoons, and artificial impoundments (i.e., stock ponds). Breeding adults are often associated with deep (greater than 2 feet) still or slow-moving water and dense shrubby riparian or emergent vegetation.	No	**Not Expected:** Suitable habitat preferred by the species is not present within the project site

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
Spea hammondii western spadefoot	SSC FPT G2G3 S3S4	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rain pools which do not contain American bullfrogs (*Lithobates catesbeianus*), predatory fish, or crayfish are necessary for breeding. Estivates in upland habitats adjacent to potential breeding sites in burrows approximating 3 feet in depth.	No	**Low**: Marginally suitable habitat is located within the project site, and there are known occurrences within 2.3 miles of the project site.
Spinus lawrencei Lawrence's goldfinch	BCC G3G4 S4	Nests in open oak or other arid woodland and chaparral, near water. Nearby herbaceous habitats are also used for feeding. This species can also be found in broadleaved upland forest and pinon and juniper woodlands. This species is closely associated with oaks (*Quercus* sp.).	Yes	**Present:** This species was observed on-site during the field surveys.
Streptocephalus woottoni Riverside fairy shrimp	FE G1G2 S1S2	Restricted to deep seasonal vernal pools, vernal pool like ephemeral ponds, and stock ponds and other human modified depressions. Basins that support Riverside fairy shrimp are typically dry a portion of the year, but usually are filled by late fall, winter, or spring rains, and may persist through May. Endemic to western Riverside, Orange, and San Diego Counties in tectonic swales/earth slump basins in grassland and coastal sage scrub. In Riverside County, the species been found in pools formed over the following soils: Murrieta stony clay loams, Las Posas series, Wyman clay loam, and Willows soils. All known habitat lies within annual grasslands, which may be interspersed through chaparral or coastal sage scrub vegetation.	No	**Not Expected:** Vernal pool habitat required by the species is not present within the project site
Taxidea taxus American badger	SSC G5 S3	Occupies a wide variety of habitats including dry, open grassland, sagebrush, and woodland habitats. Require dry, friable, often sandy soil to dig burrows for cover, food storage, and giving birth. Occasionally found in riparian zones and open chaparral with less than 50% plant cover.	No	**Not Expected:** Due to the highlight disturbed nature of the project site, this species is not expected to occur.
Thamnophis hammondii two-striped garter snake	SSC G4 S3S4	Occurs in or near permanent fresh water, often along streams with rocky beds and riparian growth up to 7,000 feet amsl.	No	**Not Expected:** Suitable habitat preferred by the species is not present within the project site
Vireo bellii pusillus least Bell's vireo	FE SE G5T2 S3	Summer resident in southern California. Breeding habitat generally consists of dense, low, shrubby vegetation in riparian areas, and mesquite brushlands, often near water in arid regions. Early successional cottonwood-willow riparian groves are preferred for nesting. The most critical structural component of nesting habitat in California is a dense shrub layer that is 2 to 10 feet (0.6 to 3.0 meters) above ground. The presence of water, including ponded surface water or moist soil conditions, may also be a key component for nesting habitat.	No	**Not Expected:** Suitable foraging and nesting habitats preferred by this species are not present within the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
SPECIAL-STATUS PLANT SPECIES				
Arenaria paludicola marsh sandwort	FE SE 1B.1 G1 S1	Perennial stoloniferous herb. Found on sandy, openings within marshes and swamps (freshwater or brackish). Found at elevations ranging from 12 to 558 feet amsl. Blooming period is from May to August.	No	**Not Expected:** The project site is not within the elevation range for this species.
Androsace elongate* ssp. *acuta California androsace	4.2 G5?T3T4 S3S4	Annual herb. Occurs in chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland habitats. Found at elevations ranging from 492 to 4,281 feet amsl. Blooming period is from March to June.	No	**Not Expected:** There are no occurrence records within 5 miles of the project site.
Berberis nevinii Nevin's barberry	FE SE 1B.1 G1 S1	Perennial evergreen shrub. Occurs on sandy or gravelly soils in chaparral, cismontane woodland, coastal scrub, and riparian scrub. Found at elevations ranging from 899 to 2,707 feet amsl. Blooming period is (February) March through June.	No	**Low:** Although suitable habitat is present within the project site, **t**here are no occurrence records within 3 miles of the project site.
Calochortus catalinae Catalina mariposa-lily	4.2 G3G4 S3S4	Perennial herb (bulb). Habitats include chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Found at elevations ranging from 49 to 2,297 feet amsl. Blooming period is from February to June.	No	**Low:** Although suitable habitat is present within the project site, **t**here are no occurrence records within 3 miles of the project site.
Calochortus clavatus* var. *avius Pleasant Valley mariposa-lily	1B.2 G4T2 S2	Perennial bulbiferous herb. Occurs in lower montane coniferous forest (Josephine silt loam and volcanic). Found at elevations ranging from 1,000 to 5,906 feet amsl. Blooming period is May through July.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Calochortus clavatus* var. *clavatus club-haired mariposa-lily	4.3 G4T3 S3	Perennial herb (bulb). Occurs on serpentinite, clay, and rocky soils within chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland habitats. Found at elevations ranging from 246 to 4,265 feet amsl. Blooming period is from May to June.	No	**Moderate: S**uitable habitat is present within the project site, In addition, there is a recent occurrence record (Calflora 2024) roughly 1.5 miles southeast of the project site.
Calochortus clavatus* var. *gracilis slender mariposa-lily	1B.2 G4T2T3 S2S3	Perennial bulbiferous herb. Found in chaparral, coastal scrub, and valley and foothill grassland habitats. Found at elevations ranging from 1,050 to 3,280 feet amsl. Blooming period is March through June (November).	No	**High: S**uitable habitat is present within the project site, In addition, there is a recent occurrence record (CNDDB; Occ. 113) roughly 0.4 miles southwest of the project site
Calochortus palmeri* var. *palmeri Palmer's mariposa-lily	1B.2 G3T2 S2	Perennial bulbiferous herb. Occurs in mesic soils within chaparral, lower montane coniferous forest, and meadows and seeps. Grows in elevations ranging from 2,329 to 7,841 feet amsl. Blooming period is from April to July.	No	**Not Expected:** The project site is not within the elevation range for this species.
Calochortus plummerae Plummer's mariposa-lily	4.2 G4 S4	Perennial bulbiferous herb. Occurs on granitic and rocky soils within chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley/foothill grassland. Grows in elevations ranging from 328 to 5,577 feet amsl. Blooming period is from May to July.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
Calystegia peirsonii Peirson's morning-glory	4.2 G4 S4	Perennial rhizomatous herb. Habitats include chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland. Found at elevations ranging from 98 to 4,921 feet. Blooming period is from April to June.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.
Cercocarpus betuloides* var. *blancheae island mountain-mahogany	4.3 G5T4 S4	Perennial evergreen shrub. Found in closed-cone coniferous forest and chaparral habitats. Grows in elevation from 98 to 1,970 feet amsl. Blooming period is from February to May.	No	**Low:** Although suitable habitat is present within the project site, the closest extant occurrence (CNPS) is roughly 4 miles southeast of the project site.
Chorizanthe parryi* var. *fernandina San Fernando Valley spineflower	FPT SE 1B.1 G2T1 S1	Annual herb. Found in sandy soils within coastal scrub habitat and valley and foothill grassland habitats. Found at elevations ranging from 492 to 4,003 feet amsl. Blooming period is from April to July.	No	**Not Expected: S**uitable habitat preferred by this species is not present within the project site.
Chorizanthe parryi var. parryi Parry's spineflower	1B.1 G3T2 S2	Annual herb. Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. Found at elevations ranging from 951 to 3,773 feet amsl. Blooming period is April through June.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.
Cryptantha clokeyi Clokey's cryptantha	1B.2 G3 S3	Annual herb. Occurs in Mojavean desert scrub. Found at elevations ranging from 2,379 to 4,478 feet amsl. Blooming month is April.	No	**Not Expected:** The project site is not within the elevation range for this species.
Deinandra paniculate paniculate tarplant	4.2 G4 S4	Annual herb. Occurs in coastal scrub, vernal pools, and valley/foothill grassland habitats. Found at elevations ranging from 82 to 3,084 feet amsl. Blooming period is from April to November.	No	**Not Expected: S**uitable habitat preferred by this species is not present within the project site.
Delphinium parryi* ssp. *purpureum Mt. Pinos larkspur	4.3 G4T4 S4	Perennial herb. Habitats include chaparral, Mojavean desert scrub, and pinyon and juniper woodland. Found at elevations ranging from 3,281 to 8,530 feet amsl. Blooming period is from May to June.	No	**Not Expected:** The project site is not within the elevation range for this species.
Dodecahema leptoceras slender-horned spineflower	FE SE 1B.1 G1 S1	Annual herb. Occurs on flood deposited terraces and washes in chaparral, coastal scrub, and alluvial fan sage scrub habitats. Found at elevations ranging from 1,181 to 2,690 feet amsl. Blooming period is from April to June.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Gilia latiflora ssp. cuyamensis Cuyama gilia	4.3 G5?T4 S4	Annual herb. Occurs in sandy flats and river valleys in pinyon and juniper woodland. Found at elevations ranging from 0 to 7500 feet amsl. Blooming period is from April to June.	No	**Not Expected: S**uitable habitat preferred by this species is not present within the project site.
Harpagonella palmeri Palmer's grapplinghook	4.2 G4 S3	Annual herb. Occurs on clay soils within open grassy areas within chaparral, coastal scrub, and valley and foothill grassland habitats. Found at elevations ranging from 66 to 3,133 feet amsl. Blooming period is from March to May.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.
Helianthus inexpectatus Newhall sunflower	1B.1 G1 S1	Perennial rhizomatous herb. Occurs in freshwater, seeps within marshes and swamps and riparian woodland habitats. This species does not have an elevation range. Blooming period is from August to October.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
Hordeum intercedens vernal barley	3.2 G3G4 S3S4	Annual herb. Habitat includes coastal dunes, coastal scrub, vernal pools, and valley/foothill grassland. Grows in elevations ranging from 16 to 3,281 feet amsl. Blooming period is from March to June.	No	**Not Expected: S**uitable habitat preferred by this species is not present within the project site.
Hulsea vestita ssp. gabrielensis San Gabriel Mountains sunflower	4.3 G5T3 S3	Perennial herb. Grows on rocky soils in lower montane coniferous forest and upper montane coniferous forest. Found at elevations ranging from 4,921 to 8,202 feet amsl. Blooming period is from May to July.	No	**Not Expected:** The project site is not within the elevation range for this species.
Juglans californica Southern California black walnut	4.2 G4 S4	Perennial deciduous tree. Found in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Found at elevations ranging from 164 to 2,953 feet amsl. Blooming period is from March to August.	No	**Not Expected:** Although suitable habitat is present within the project site, this species would have been identified during the field survey if present.
Juncus acutus ssp. leopoldii southwestern spiny rush	4.2 G5T5 S4	Perennial rhizomatous herb. Occurs within coastal dunes (mesic), meadows and seeps (alkaline seeps), and marshes and swamps (coastal salt). Found at elevations ranging from 9 to 2,955 feet amsl. Blooming period is (March) May through June.	No	**Not Expected: S**uitable habitat preferred by this species is not present within the project site.
Lepechinia fragrans fragrant pitcher sage	4.2 G3 S3	Perennial shrub. Occurs in chaparral habitats. Found at elevations ranging from 66 to 4,298 feet amsl. Blooming period is March through October.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.
Lepechinia rossii Ross' pitcher sage	1B.2 G1 S1	Shrub. Occurs in soil derived from fine-grained, reddish sedimentary rock in chaparral. Found at elevations ranging from 0 to 7480 feet amsl. Blooming period is May through September.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.
Lilium humboldtii* ssp. *ocellatum ocellated Humboldt lily	4.2 G4T4? S4?	Perennial bulbiferous herb. Found in openings within chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland habitats. Found at elevations ranging from 98 to 5,906 feet amsl. Blooming period is from March to August.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.
Lupinus elatus silky lupine	4.3 G4 S4	Perennial herb. Habitats include lower montane coniferous forest and upper montane coniferous forest. Found at elevations ranging from 4,921 to 9,842 feet amsl. Blooming period is from June to August.	No	**Not Expected:** The project site is not within the elevation range for this species.
Monardella exilis Mojave monardella	4.2 G3? S3	Annual herb. Occurs in sandy soils within desert dunes, Mojavean desert scrub, Great Basin scrub, chenopod scrub, pinyon and juniper woodland, Joshua tree woodland, and lower montane habitats. Found at elevations ranging from 1970 feet to 7940 feet amsl. Blooms April-September.	No	**Not Expected:** The project site is not within the elevation range for this species.
Nasturtium gambelii Gambel's water cress	FE ST 1B.1 G1 S1	Perennial rhizomatous herb. Occurs in marshes and swamps (freshwater or brackish) habitats. Found at elevations ranging from 16 to 1,083 feet amsl. Blooming period is from April to October.	No	**Not Expected: S**uitable habitat preferred by this species is not present within the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
Navarretia fossalis spreading navarretia	FT 1B.1 G2 S2	Annual herb. Habitats include chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, and vernal pools. Grows in elevation ranging from 98 to 2,149 feet amsl. Blooming period is from April to June.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Navarretia setiloba Piute Mountains navarretia	1B.1 G2 S2	Annual herb. Found on clay or gravelly loam soils within cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland habitats. Found at elevations ranging from 935 to 6,890 feet amsl. Blooming period is from April to June.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Opuntia basilaris* var. *brachyclada short-joint beavertail	1B.2 G5T3 S3	Perennial stem succulent. Grows in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland habitats. Found at elevations ranging from 1,394 to 5,906 feet amsl. Blooming period is from April to June.	No	**Moderate:** Suitable habitat preferred by this species is present within the project site. In addition, the nearest extant occurrence (CNDDB; Occ. 108) is roughly 1.3 miles northwest of the project site.
Orcuttia californica California Orcutt grass	FE SE 1B.1 G1 S1	Annual herb. Restricted to vernal pool habitats. Found at elevations ranging from 49 to 2,165 feet amsl. Blooming period is from April to August.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Perideridia pringlei adobe yampah	4.3 G4 S4	Perennial herb. Occurs in serpentine and clay soils within grassland hillsides and within seasonally wet sites. Also found in chaparral, cismontane woodland, pinyon and juniper woodland, and coastal scrub. Found at elevations ranging from 245 feet to 7645 feet amsl. Blooms April-June.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.
Phacelia mohavensis Mojave phacelia	4.3 G4Q S4	Annual herb. Occurs on sandy or gravelly soils within cismontane woodland, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland. Found at elevations ranging from 4,593 to 8,202 feet amsl. Blooming period is from April to August.	No	**Not Expected:** Suitable habitat preferred by this species is not present within the project site.
Pseudognaphalium leucocephalum white rabbit-tobacco	2B.2 G4 S2	Perennial herb. Found on sandy and gravelly soils within chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Found at elevations ranging from 0 to 6,890 feet amsl. Blooming period is from July to December.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.
Quercus durata var. gabrielensis San Gabriel oak	4.2 G4T3 S3	Perennial evergreen shrub. Habitats include chaparral and cismontane woodland habitats. Found at elevations ranging from 1,476 to 3,281 feet amsl. Blooming period is April through May.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.
Senecio aphanactis chaparral ragwort	2B.2 G3 S2	Annual herb. Grows on alkaline soils within chaparral, cismontane woodland, and coastal scrub habitats. Found at elevations ranging from 49 to 2,625 feet amsl. Blooming period is from January to April.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.
Sidalcea neomexicana salt spring checkerbloom	2B.2 G4 S2	Perennial herb. Found on alkaline and mesic soils within chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas. Found at elevations ranging from 49 to 5,020 feet amsl. Blooming period is from March to June.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
Stroptanthus campestris southern jewelflower	1B.3 G3 S3	Perennial herb. Occurs in open, rocky areas within chaparral, lower montane coniferous forest, and pinyon and juniper woodland. Found at elevations ranging from 1985 to 8500 feet amsl. Blooming period is from May to July.	No	**Not Expected:** The project site is not within the elevation range for this species.
Symphyotrichum greatae Greata's aster	1B.3 G2 S2	Perennial rhizomatous herb. Found on mesic soils within broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland habitats. Found at elevations ranging from 984 to 6,594 feet amsl. Blooming period is June to October.	No	**Not Expected:** Although suitable habitat is present within the project site, there are no recent extant occurrences within 5 miles of the project site.
Yucca brevifolia western Joshua tree	SCT	Tree. Found within mesic canyons in chaparral, cismontane woodland, broadleafed upland forest, lower montane coniferous forest, and riparian woodland. Found at elevations ranging from 1000 – 7350 feet amsl. Blooming period is from March through June.	No	**Not Expected: S**uitable habitat preferred by this species is not present within the project site.
SPECIAL-STATUS VEGETATION COMMUNITIES				
CNDDB/Holland (1986) California Walnut Woodland **MCV (1995)** California Walnut Series **NVCS (2009)** *Juglans californica* Woodland Alliance	G2 S2.1	Found at elevations ranging from 490 to 2,952 feet amsl in riparian corridors, but most stands cover all hillslopes. Southern California black walnut is dominant or co-dominant in the tree canopy with white alder (*Alnus rhombifolia*), two petaled ash (*Fraxinus dipetala*), toyon (*Heteromeles arbutifolia*), coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), polished willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), black elderberry (*Sambucus nigra*), and California bay (*Umbellularia californica*). Trees are less than 50 feet tall; canopy is open to continuous. Shrub layer is sparse to intermittent. Herbaceous layer is sparse or grassy.	No	**Absent.** This vegetation community does not occur within the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
CNDDB/Holland (1986) Mainland Cherry Forest **MCV (1995)** Hollyleaf Cherry Stands **NVCS (2009)** *Heteromeles arbutifolia* Shrubland Alliance, *Prunus ilicifolia* Shrubland Alliance	G1 S1.1	Found at elevations ranging from 164 to 4,265 feet amsl on slopes that are often steep and north-facing. Soils are derived from bedrock or colluvium. Redheart (*Ceanothus spinosus*), toyon, hollyleaf cherry (*Prunus ilicifolia*), is dominant or co-dominant in the shrub canopy with California sagebrush, big pod ceanothus (*Ceanothus megacarpus*), island mountain-mahogany (*Cercocarpus betuloides* var. *blancheae*), chaparral clematis (*Clematis lasiantha*), sticky monkeyflower (*Diplacus aurantiacus*), California buckwheat (*Eriogonum fasciculatum*), California ash (*Fraxinus dipetala*), chaparral beard tongue (*Keckiella antirrhinoides*), climbing penstemon (*Keckiella cordifolia*), inland scrub oak (*Quercus berberidifolia*), evergreen buckthorn (*Rhamnus ilicifolia*), sugar bush (*Rhus ovata*), and black sage (*Salvia mellifera*). Emergent trees may be present at low cover, including California black walnut and coast live oak. Shrubs are less than 50 feet; canopy is open to continuous. Herbaceous layer is sparse to continuous.	No	**Absent.** This vegetation community does not occur within the project site.
CNDDB/Holland (1986) Riversidian Alluvial Fan Sage Scrub **MCV (1995)** Scalebroom Series **NVCS (2009)** *Lepidospartum squamatum* intermittently flooded Shrubland Alliance	G1 S1.1	Found at elevations ranging from 164 to 4,922 feet amsl on intermittently or rarely flooded, low-gradient alluvial deposits along streams, washes, and fans. Scalebroom (*Lepidospartum squamatum*) is dominant, co-dominant, or conspicuous in the shrub canopy with burrobrush (*Ambrosia salsola*), California sagebrush, mulefat, bladderpod (*Cleome isomeris*), California cholla (*Cylindropuntia californica*), brittlebush (*Encelia farinosa*), thick leaved yerba santa (*Eriodictyon crassifolium*), hairy yerba santa (*Eriodictyon trichocalyx*), California buckwheat, chaparral yucca (*Hesperoyucca whipplei*), deerweed (*Acmispon glaber*), laurel sumac (*Malosma laurina*), prickly-pear cactus (*Opuntia littoralis*), lemonade berry (*Rhus integrifolia*), sugar bush, skunkbrush (*Rhus aromatica*), and poison oak (*Toxicodendron diversilobum*). Emergent trees or tall shrubs may be present at low cover, including mountain mahogany (*Cercocarpus betuloides*), southern California black walnut, California juniper, California sycamore, Fremont cottonwood, or black elderberry. Shrubs are less than 7 feet tall; canopy is open to continuous, and two tiered. Herbaceous is layer variable and may be grassy.	No	**Absent.** This vegetation community does not occur within the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
CNDDB/Holland (1986) Southern California Threespine Stickleback Stream **MCV (1995)** Not Identified **NVCS (2009)** Not Identified	GNR SNR	Permanent slow-moving streams and rivers characterized by freshwater, shallow stream edges or braids in dense vegetation. Also consists of slow to moderate current with clear water; southern California threespine stickleback have been found perishing in areas with reduced water quality.	No	**Absent.** This vegetation community does not occur within the project site.
CNDDB/Holland (1986) Southern Coast Live Oak Riparian Forest **MCV (1995)** Coast Live Oak Series **NVCS (2009)** *Quercus agrifolia* Woodland Alliance	G4 S4	Found at elevations ranging from sea level to 3,937 feet amsl in alluvial terraces, canyon bottoms, stream banks, slopes, and flats, Soils are deep, sandy or loamy with high organic matter. Coast live oak is a dominant or co-dominant in the tree canopy with bigleaf maple (*Acer macrophyllum*), box elder (*Acer negundo*), madrono (*Arbutus menziesii*), southern California black walnut, California sycamore, Fremont cottonwood, blue oak (*Quercus douglasii*), Engelmann oak (*Quercus engelmannii*), California black oak (*Quercus kelloggii*), valley oak, arroyo willow, and California bay. Trees are less than 98 feet tall; canopy is open to continuous. Shrub layer is sparse to intermittent. Herbaceous layer is sparse or grassy.	No	**Absent.** This vegetation community does not occur within the project site.
CNDDB/Holland (1986) Southern Cottonwood Willow Riparian Forest **MCV (1995)** Fremont Cottonwood Series **NVCS (2009)** *Populus fremontii* Forest Alliance	G3 S3.2	Found at elevations ranging from sea level to 7,874 feet amsl on floodplains, along low-gradient rivers, perennial or seasonally intermittent streams, springs, in lower canyons in desert mountains, in alluvial fans, and in valleys with a dependable subsurface water supply that varies considerably during the year. Fremont cottonwood is a dominant or co-dominant in the tree canopy with box elder, desert baccharis (*Baccharis sergiloides*), Oregon ash (*Fraxinus latifolia*), northern California black walnut (*Juglans hindsii*), California sycamore, coast live oak, narrowleaf willow (*Salix exigua*), Goodding's willow (*Salix goodingii*), polished willow, arroyo willow, pacific willow (*Salix lasiandra* ssp. *lasiandra*), and yellow willow (*Salix lutea*). Trees and less than 25 meters tall; canopy is continuous to open. Shrub layer is intermittent to open. Herbaceous layer is variable.	No	**Absent.** This vegetation community does not occur within the project site.
CNDDB/Holland (1986) Southern Mixed Riparian Forest **MCV (1995)** N/A **NVCS (2009)** N/A	G2 S2.1	Similar to willow riparian forests and woodlands in species occurrences. Found in and along margins of an intermittent and perennial streams. Generally, no single species dominates the canopy and species composition is dependent on elevation, aspect, hydrology, and channel type. Species that are usually present in the canopy include California black walnut, willow, California buckeye (*Aesculus californica*), Fremont cottonwood, and bigleaf maple.	No	**Absent.** This vegetation community does not occur within the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Special-Status Rank***	**Habitat Preferences and Distribution Affinities**	**Observed On-site**	**Potential to Occur**
CNDDB/Holland (1986) Southern Riparian Forest **MCV (1995)** N/A **NVCS (2009)** N/A	G4 S4	Riparian zones dominated by larger, mature trees consisting of various species of willows, cottonwoods, and sycamores.	No	**Absent.** This vegetation community does not occur within the project site.
CNDDB/Holland (1986) Southern Riparian Scrub **MCV (1995)** N/A **NVCS (2009)** N/A	G3 S3.2	Riparian zones dominated by small trees or shrubs, lacking taller riparian trees.	No	**Absent.** This vegetation community does not occur within the project site.
CNDDB/Holland (1986) Southern Sycamore Alder Riparian Woodland **MCV (1995)** California Sycamore Series **NVCS (2009)** *Platanus racemosa* Woodland Alliance	G4 S4	Found at elevations ranging from sea level to 7,874 feet amsl in gullies, intermittent streams, springs, seeps, stream banks, and terraces adjacent to floodplains that are subject to high-intensity flooding. Soils are rocky or cobbly alluvium with permanent moisture at depth. California sycamore is a dominant or co-dominant in the tree canopy with white alder, southern California black walnut, Fremont cottonwood, coast live oak, valley oak, narrowleaf willow, Gooding's willow, polished willow, arroyo willow, yellow willow, Peruvian pepper tree (*Schinus mole*), and California bay.	No	**Absent.** This vegetation community does not occur within the project site.
CNDDB/Holland (1986) Southern Willow Scrub **MCV (1995)** N/A **NVCS (2009)** N/A	G3 S2.1	Dense, broadleaved, winter-deciduous riparian thickets dominated by several willow species, with scattered emergent Fremont's cottonwood and California sycamore. Most stands are too dense to allow much understory development. Loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. This early seral type required repeated flooding to prevent succession to Southern Cottonwood-Sycamore Riparian Forest.	No	**Absent.** This vegetation community does not occur within the project site.

Table E: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
CNDDB/Holland (1986) Valley Needlegrass Grassland **MCV (1995)** N/A **NVCS (2009)** N/A	G3 S3.1	Occurs at elevations ranging from 0 to 5,577 feet amsl on all topographic locations. Soils may be deep with high clay content, loamy, sandy, or silty derived from mudstone, sandstone, or serpentine substrates. California melicgrass (*Melica californica*), Torrey melic (*Melica torreyana*), nodding needle grass (*Stipa cernua*), foothill needle grass (*Stipa lepida*) and/or purple needle grass (*Stipa pulchra*) is dominant or characteristically present in the herbaceous layer with other perennial grasses and herbs including spidergrass (*Aristida ternipes*), milkvetch (*Astragalus* spp.), wild oat (*Avena* spp.), bromes (*Bromus* spp.), fire reedgrass (*Calamagrostis koelerioides*), mariposa (*Calochortus* spp.), morning glory (*Calystegia* spp.), amole (*Chlorogalum pomeridianum*), clarkia (*Clarkia* spp.), common sandaster (*Corethrogyne filaginifolia*), turkey-mullein (*Croton setiger*), cryptantha (*Cryptantha* spp.), American wild carrot, (*Daucus pusillus*), blue dicks (*Dichelostemma capitatum*), blue wildrye (*Elymus glaucus*), buckwheat (*Eriogonum* spp.), erodium (*Erodium* spp.), California poppy (*Eschscholzia californica*), California fescue (*Festuca californica*), shortpod mustard (*Hirschfeldia incana*), narrow tarplant (*Holocarpha virgata*), meadow barley (*Hordeum brachyantherum*), June grass (*Koeleria macrantha*), goldfields (*Lasthenia* spp.), plantain (*Plantago* spp.), one sided blue grass (*Poa secunda*), sanicle (*Sanicula* spp.), western blue eyed grass (*Sisyrinchium bellum*), clover (*Trifolium* spp.) and/or fescue (*Vulpia* spp.). Emergent trees and shrubs may be present at low cover. Herbs are less than 3 feet; cover is open to continuous.	No	**Absent.** This vegetation community does not occur within the project site.
CNDDB/Holland (1986) Valley Oak Woodland **MCV (1995)** Valley Oak Series **NVCS (2009)** *Quercus lobata* Woodland Alliance	G3 S3	Occurs at elevations ranging from 0 to 2,543 feet amsl in valley bottoms seasonally saturated soils that may intermittently flood, lower slopes, and summit valleys. Soils are alluvial or residual. Valley Oak is dominant or co-dominant in the tree canopy with boxelder maple (*Acer negundo*), white alder, Oregon ash, northern California walnut, English walnut (*Juglans regia*), western sycamore, Fremont cottonwood, coast live oak, blue oak, California black oak, interior live oak (*Quercus wislizeni*), Goodding's black willow, and arroyo willow. Shrubs and lianas may include California pipevine (*Aristolochia californica*) or California wild grape (*Vitis californica*). Trees are less than 98 feet tall; canopy is open to continuous. Shrub layer is open to intermittent. Herbaceous layer may be grassy.	No	**Absent.** This vegetation community does not occur within the project site.

* **U.S. Fish and Wildlife Service (USFWS)**

FE Endangered – any species which is in danger of extinction throughout all or a significant portion of its range.

FCE Proposed Endangered - the classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the USFWS has formally noticed as being under review by the USFWS for addition to the list of endangered species, or a species for which the Service has published a notice of proposed regulation to add the species to the list of endangered species.

FT Threatened – any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

FPT Federally Proposed - Threatened – The classification provided to an animal or plant that is proposed for federal listing as Threatened in the Federal Register under Section 4 of the Endangered Species Act.

California Department of Fish and Wildlife (CDFW)

SE Endangered – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

SCE State Candidate for Listing as Endangered – the classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of endangered species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of endangered species.

ST Threatened – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required under the California Endangered Species Act.

SCT State Candidate Threatened - any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that has been accepted as a candidate species for listing as threatened. The species is temporarily afforded the same protections as a state-listed endangered or threatened species. The Commission must decide at a public meeting whether the species will be removed from candidacy or added to the list of threatened species.

FP Fully Protected – any native species or subspecies of bird, mammal, fish, amphibian, or reptile that were determined by the State of California to be rare or face possible extinction.

SSC Species of Special Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria:

- is extirpated from California or, in the case of birds, in its primary seasonal or breeding role;
- is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed.
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

WL Watch List - taxa that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

California Native Plant Society (CNPS) California Rare Plant Rank

1B Plants rare, threatened, or endangered in California and elsewhere.

2B Plants rare, threatened, or endangered in California but more common elsewhere.

4 Plants of limited distribution – Watch List.

Threat Ranks

.1 Seriously threatened in California (over 80% of occurrences threatened/high degree any immediacy of threat).

.2 Moderately threatened in California (20 to 80 percent of occurrences threatened/moderate degree and immediacy of threat).

.3 Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

NatureServe Conservation Status Rank

The Global Rank (G#) reflects the overall condition and imperilment of a species throughout its global range. The Infraspecific Taxon Rank (T#) reflects the global situation of just the subspecies or variety. The State Rank (S#) reflects the condition and imperilment of an element throughout its range within California. (G#Q) reflects that the element is very rare but there are taxonomic questions associated with it; the calculated G rank is qualified by adding a Q after the G#). Adding a ? to a rank expresses uncertainty about the rank.

G1/T1 Critically Imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

G2/T2 Imperiled— At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.

G3/T3	Vulnerable— At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
G4/T4	Apparently Secure— Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5/T5	Secure – Common; widespread and abundant.
GNR	Unranked – Global rank not yet assessed.
S1	Critically Imperiled – Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the State.
S2	Imperiled – Imperiled in the State because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or State.
S3	Vulnerable – Vulnerable in the State due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4	Apparently Secure – Uncommon but not rare; some cause for long-term concern due to declines or other factors.
SNR	Unranked – National or subnational conservation status not yet assessed.

APPENDIX C:
AQUATIC RESOURCES DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS REPORT

April 10, 2025 JN 195477

CITY OF SANTA CLARITA
Attn: *Amber Rodriguez*
City of Santa Clarita
23920 Valencia Boulevard, Suite 120
Santa Clarita, California 91355

SUBJECT: Aquatic Resources Delineation of State and Federal Jurisdictional Waters for the proposed Haskell Canyon Bike Park Project – City of Santa Clarita, Los Angeles County, California

Dear Ms. Rodriguez:

Michael Baker International (Michael Baker) has prepared this report to document the results of a literature review and formal delineation of state and federal jurisdictional waters, including wetlands, that was conducted for the proposed Haskell Canyon Bike Park Project (project or project site) located in the City of Santa Clarita, Los Angeles County, California. Specifically, the delineation was conducted to identify and document the extent of aquatic features within the project site that potentially fall under the jurisdictional authority of the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW). This report summarizes the methodology utilized throughout the course of the delineation, defines the jurisdictional authority of the regulatory agencies, and documents the findings made by Michael Baker. This report presents Michael Baker's determination of jurisdictional boundaries based on the most up-to-date regulations, written policy, and guidance approved by the regulatory agencies. However, please note that only the regulatory agencies can make a final determination of jurisdictional limits.

PROJECT LOCATION

The project site is generally located north and east of Interstate 5, north and west of State Route-14 in the City of Santa Clarita, Los Angeles County, California (Figure 1, *Regional Vicinity*, in Attachment A). The project site is depicted in Section 31, Township 5 North, Range 15 West on the U.S. Geological Survey's (USGS) *Mint Canyon, California* 7.5-minute quadrangle and Section 36, Township 5 North, Range 16 West on the USGS *Newhall, California* 7.5-minute quadrangle (refer to Figure 2, *Project Vicinity*, in Attachment A). Specifically, the project site is located within Haskell Canyon Open Space south of the Angeles National Forest, north of Copper Hill Drive, east of City Highline Motorway Fire Road, and northeast of Blue Cloud

Drive. The project site is located on the assessor's parcel numbers (APN) shown in Table 1 and at latitude 34.476908° and longitude -118.499045° (refer to Figure 3, *Project Site*, in Attachment A).

Table 1: Assessor's Parcel Numbers Associated with Haskell Canyon Bike Park

APN
2813-010-273
2813-010-274
2813-010-275
2813-010-276
2813-010-900
2813-010-901
2813-010-902
2813-025-270
3244-031-901

PROJECT DESCRIPTION

The project would develop a bike park that would consist of approximately 15 miles of trails interspersed throughout the project site and two activity/programming areas – the Haskell Bike Park Core (Haskell Core) and the Blue Cloud Trailhead. Trail types for all skill levels provided within the Haskell Canyon Bike Park include approximately 3.7 miles of perimeter and climbing trails, approximately 5.5 miles of downhill bike trails, and approximately 5 miles of multi-use trails. The proposed trail widths would range 4 to 6 feet wide. The project would also maintain approximately 1.6 miles of existing multi-use trails. The Haskell Core, located on the western portion of the project site, would include an event plaza with picnic tables, pump tracks, a dual slalom course, progressive jumplines, and a progressive skills area. Event/spectator areas would be provided adjacent to the main activity areas. Other amenities within the Haskell Core would include shade structures at the start zones of the dual slalom course and the progressive jumplines, two vault restrooms, a bike repair station, a rest area with benches and shade structure, and cargo containers for storage areas. Parking for the Haskell Core would be provided within a 40-space parking lot, which would include a parking/emergency turnaround, four American Disabilities Act (ADA) parking spaces, and unstructured space for four food trucks. The Blue Cloud Trailhead area would include space for potential future landscape restoration, a multi-use trailhead, a single vault restroom, a bike repair station, and the Saddle Trail Hub (meeting space for riders with a shade structure). Parking for the Blue Cloud Trailhead would be provided within an unstructured parking area and along Blue Cloud Road.

REGULATORY SETTING

There are three key agencies that regulate activities within inland lakes, streams, wetlands, and riparian areas in California. The USACE regulates activities that result in the discharge of dredged or fill material into waters of the U.S. (WoUS), including wetlands, pursuant to Section 404 of the federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the state agencies, the RWQCB regulates discharges to waters of the State (WoS), including wetlands, pursuant to Section 401 of the CWA, Section

13263 of the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act), and State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State; and, the CDFW regulates alterations to lakes, streambeds, and associated riparian habitats pursuant to Section 1600 *et seq*. of the California Fish and Game Code (CFGC).

LITERATURE REVIEW

Prior to conducting the field delineation, Michael Baker conducted a review of relevant literature and materials to obtain a general understanding of the environmental setting and preliminarily identify features/areas within the project site that may fall under the jurisdiction of the regulatory agencies. Refer to the subsections below for a summary of relevant materials, databases, technical reports, and guidance documents that were obtained/reviewed by Michael Baker. In addition, a complete list of references is provided as Attachment G to this report.

Santa Clara River Watershed

The project site is located within the Lower Bouquet Canyon (HUC 180701020202) portion of the Santa Clara River Watershed (HUC 18070102). The project site occurs approximately 0.06 mile east of Haskell Canyon Wash, which is tributary to the Santa Clara River, a tributary to the Pacific Ocean. The Santa Clara River watershed comprises approximately 1,040,515 acres in Los Angeles County, California. The watershed is divided into numerous subwatersheds based on flow direction and landscape, all of which ultimately connect to the Santa Clara River. Haskell Canyon Wash and the Santa Clara River are not Designated Rivers under the National Wild and Scenic Rivers Act.

Soils

According to the *Custom Soil Resources Report for Orange County and Part of Riverside County, California* (U.S. Department of Agriculture [USDA] 2024a), the project site is underlain by four soil map units: Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded; Saugus loam, 30 to 50 percent slopes, eroded; Sorrento loam, 2 to 5 percent slopes; and Yolo loam, 2 to 9 percent slopes. Michael Baker also reviewed the *Hydric Soils List for California* (USDA 2024b) to preliminarily verify whether the soil map units listed above was classified as a "hydric soil" in the Antelope Valley and Los Angeles areas. According to the list, the subject soil map units are not listed as hydric.

National Wetlands Inventory

Based on a review of the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI) (USFWS 2024), five riverine resources mapped in the NWI coincide with the project site and are shown in Attachment B. Two mapped riverine features on the western portion of the project site flow to the west into Haskell Canyon Wash. These features are described as riverine intermittent streambed seasonally-flooded (R4SBC). One riverine feature is mapped on the eastern portion of the project site. This feature is classified as riverine intermittent streambed temporarily-flooded (R4SBA) and flows to the south off the project site into the Santa Clara River. The headwaters of two riverine features are present in the southwestern portion of the project site. These two features are classified as R4SBC and flow to the south into Haskell Canyon Wash and the Santa Clara River.

Flood Zone

Based on a review of the Federal Emergency Management Agency's (FEMA) National Flood Hazard Layer Viewer (FEMA 2024), the project site is located within Flood Insurance Rate Map (FIRM) Panel Numbers 06037C0810G and 06037C0830G. The project site occurs within Zones X and D as shown in Attachment C. Zone X is described as an area of minimal flood hazard and Zone D is described as an area of undetermined flood hazard.

National Hydrography Dataset

Based on a review of the National Hydrography Dataset (NHD) Advanced Viewer (USGS 2024a), thirteen unnamed ephemeral drainages are mapped within the project site, as shown in Attachment D. Features within the eastern portion of the site generally flow to the south off site and into the Santa Clara River downstream. Features within the western portion of the site generally flow to the west and south of site and into Haskell Canyon Wash and the Santa Clara River.

FIELD METHODOLOGY

Michael Baker wetland delineators April Nakagawa and Megan Minter conducted a jurisdictional delineation/field survey of the project site on February 13, 14, and 15, 2024 using the most recent, agency approved methodology, to identify and map the extent of state and federal jurisdictional features (i.e., wetland and non-wetland WoUS, WoS, streambed, associated riparian vegetation). Based on the project's location, potential state and federal wetlands were delineated in accordance with the methods and guidance provided in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Arid West Regional Supplement; USACE 2008), and the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Resources Control Board 2019b).

While in the field, jurisdictional features were recorded on an aerial photograph at a scale of 1" = 400' using topographic contours and visible landmarks as guidelines. Data points were recorded in the field using a Garmin GPS Map 64sx Global Positioning System (GPS) to identify specific widths and length of jurisdictional features and the location of any ordinary high-water mark (OHWM) indicators, photograph points, soil pits, and other pertinent site characteristics. These data were then uploaded as a .shp file and confirmed/refined to ensure accuracy and consistency with hardcopy notes and aerial mapping completed in the field. Michael Baker then used ESRI ArcGIS Pro software to calculate the total acreage of jurisdictional features and prepare final project figures.

Stream Duration Assessment Method

For this project location, stream flow duration was determined using the methods outlined in the *User Manual for a Beta Streamflow Duration Assessment Method for the Arid West of the United States, Version 1.1* (SDAM; Mazor et. al, 2023). This document is intended to provide a rapid and repeatable method to distinguish between ephemeral, intermittent, and perennial streamflow. The SDAM considers several variables in determining the stream duration of a given reach, including presence and abundance of hydrophytic plant species, presence and abundance of aquatic invertebrates, presence or absence of EPT taxa (comprised of Ephemeroptera, Plecoptera, and Trichoptera), presence or absence of algae, and presence or absence of single indicators (fish and/or algae cover ≥10%).

RESULTS

<u>Non-Wetland Features</u>

Eleven ephemeral drainage features were identified within the project site during the February 2024 site visit (refer to Attachment E, *Site Photographs*).

Aquatic Feature 1

Aquatic Feature 1 (AF-1) is an earthen ephemeral channel that begins along the south-facing slopes of steep ridges along the northern project boundary. AF-1 generally flows southwest for approximately 400 linear feet before transitioning to overland sheetflow and dissipating into the surrounding grassland. At the time of the survey, AF-1 was completely dry and did not contain flowing or standing water. The bed and banks of AF-1 are vegetated similarly to the surrounding uplands and contain brome grasses (*Bromus madritensis*, UPL; *Bromus diandrus*, UPL), fragrant sumac (*Rhus aromatica*, FACU), scrub oak (*Quercus* sp., UPL), London rocket *(Sisymbrium irio*, UPL), doveweed (*Croton setiger*, UPL), barley (*Hordeum* sp.), red-stemmed filaree (*Erodium cicutarium*, UPL), summer mustard (*Hirschfeldia incana*, UPL), Russian thistle (*Salsola tragus*, FACU), white sage (*Salvia apiana*, UPL) wild oats (*Avena* sp., UPL), and bush mallow (*Malacothamnus* sp.). An OHWM is present within AF-1 that is approximately one foot wide and defined by vegetation matting, sediment deposition, and a clear line impressed on the bank. The bank-to-bank width of AF-1 is approximately five feet and the banks in the upper portion of the drainage are two to three feet in height.

Aquatic Feature 2

Aquatic Feature 2 (AF-2) is a large earthen ephemeral channel beginning in the center of the project site and flowing from east to west. AF-2 flows for approximately 1,724 linear feet before ending in sheetflow near the western project boundary and dissipates into the surrounding landscape. The bank-to-bank width of AF-2 varies and ranges from 2 to 8 feet in the lower portions, 10 to 20 feet in the middle, and 5 to 8 feet in the upper headwaters. Bank height ranges from 3 to 8 feet. At the time of the field survey, AF-2 was completely dry. Small mammal burrows are present throughout the bed and banks of the drainage. The bed and banks of AF-2 are vegetated with brome grasses, scrub oak, white sage, mustard, Russian thistle, Menzies' goldenbush (*Isocoma menziesii*, FACU), fiddleneck (*Amsinckia* sp., UPL), California buckwheat

(*Eriogonum fasciculatum*, UPL), and curly dock (*Rumex crispus*, FAC). Scrub oak is present within the streambed and is much denser in the downstream portion of the streambed than the surrounding uplands. An OHWM is present within AF-2 is varies from one to ten feet. The OHWM is defined by a clear line impressed on the banks, sediment sorting, drainage patterns, and vegetation matting. SDAM Reach 2 was completed within this drainage and confirmed AF-2 exhibits an ephemeral flow regime (data sheets are provided in Attachment F).

Aquatic Feature 3

Aquatic Feature 3 (AF-3) is a small ephemeral tributary to AF-2 originating along a dirt access road. AF-3 flows from southeast to northwest for approximately 300 linear feet before the confluence with Aquatic Feature 2. Vegetation within the streambed is similar to AF-2 and includes brome grasses, doveweed, scrub oak, mustard, buckwheat, and elderberry (*Sambucus nigra,* FACU). At the time of the field survey, AF- 3 was completely dry. Small mammal burrows are present throughout the bed and banks of the drainage. The OHWM is defined by a clear line impressed on the banks, sediment sorting, drainage patterns, and vegetation matting. The bank-to-bank width of AF-3 is 15 feet. Bank height is approximately 2 to 3 feet.

Aquatic Feature 4

Aquatic Feature 4 (AF-4) is an ephemeral drainage flowing from northwest to southeast along Blue Cloud Road. This feature flows through a steep, narrow valley for approximately 970 linear feet before dissipating into sheetflow and terminating within the project site. AF-4 is densely vegetated with black sage (*Salvia mellifera*, UPL), California sagebrush (*Artemisia californica*, UPL), chamise (*Adenostoma fasciculatum*, UPL), tocalote (*Centaurea melitensis*, UPL), scrub oak, blue wild rye (*Elymus glaucus*, FACU), and California buckwheat. A 1-foot wide OHWM is present and is defined by a clear line impressed on the banks, sediment deposition, and a change in vegetation. The bank-to-bank width ranges from 5 to 10 feet and the bank height is 2 to 3 feet.

Aquatic Feature 5

Aquatic Feature 5 (AF-5) is a short, deeply incised ephemeral drainage flowing from northwest to southeast and into AF-6. AF-5 flows for approximately 493 linear feet and contains an OHWM that is one foot wide and a top of bank that is 2 feet wide. The OHWM is defined by sediment deposits, a clear line impressed on bank, a change in vegetation, and drainage patterns. AF-5 is vegetated with summer mustard, California buckwheat, Russian thistle, wild oats (*Avena fatua*, UPL), bush mallow, chamise, black sage, scrub oak, California sagebrush, red-stemmed filaree, and brome grasses including downy chess (*Bromus tectorum*, UPL).

Aquatic Feature 6

Aquatic Feature 6 (AF-6) is a short, deeply incised ephemeral drainage flowing from northeast to southwest and offsite to the south. The feature originates in a steep, south-facing narrow canyon and flows for approximately 225 linear feet before exiting the site to the south. The bed of AF-6 is unvegetated while the banks are vegetated with black sage, California buckwheat, mustard, and red-stemmed filaree. The bank-to-bank width of AF-6 is 10 feet and the OHWM width is 3 feet. The OHWM is defined by a change in vegetation, sediment deposition, and a clear line impressed on the bank.

Aquatic Feature 7

Aquatic Feature 7 (AF-7) is a steep, deeply incised drainage flowing from northwest to southeast through a narrow valley and eventually into AF-8. AF-7 flows for approximately 708 linear feet within the project site and was completely dry at the time of the survey. AF-7 is densely vegetated with California buckwheat, wild oats, fourwing saltbush (*Atriplex canescens*, UPL), brome grasses, black sage, and scrub oak. The drainage contains an OHWM defined by sediment deposition and a change in vegetation. Portions of the drainage are very densely vegetated and the OHWM is obscured. Bank-to-bank width is 20 feet and the OHWM width is 2 feet. The OHWM is defined by sediment deposition and a change in vegetation.

Aquatic Feature 8

Aquatic Feature 8 (AF-8) is a large, meandering drainage flowing from northeast to southwest within the project site for approximately 1,872 linear feet before continuing offsite and connecting downstream to Bouquet Creek. Aquatic Features 9 (AF-9) and 10 (AF-10) connect to AF-8 downstream within the project boundary. AF-8 is incised 5 to 10 feet with steep, almost vertical banks. The bank-to-bank width ranges from 6 to 20 feet and the OHWM width ranges from one to three feet. The OHWM is defined by sediment deposition, a change in vegetation, and a clear line impressed on the bank. The bed and banks are densely vegetated with California sagebrush, California buckwheat, chamise, snakeweed (*Gutierrezia sarothrae*, UPL), brome grasses, summer mustard, black sage, scrub oak, and toyon (*Heteromeles arbutifolia*, UPL).

SDAM Reach 1 was completed within this drainage and confirmed AF-8 exhibits an ephemeral flow regime (data sheets are provided in Attachment F).

Aquatic Feature 9

AF-9 is a short ephemeral drainage flowing north to south and connects downstream to AF-8. AF-9 begins within the project site on a steep, south-facing slope and flows for approximately 280 linear feet before the confluence with AF-8. Additionally, AF-10 connects downstream to AF-9 within the project site. Vegetation within AF-9 is similar to that of AF-8 and includes brome grasses, California buckwheat, summer mustard, scrub oak, California sagebrush, and black sage. An OHWM is present within AF-9 that is approximately 2 feet wide and defined by vegetation matting, change in vegetation, and a clear line impressed on the bank. The bank-to-bank width of AF-9 is approximately 20 feet and the banks are 1-2 feet in height.

Aquatic Feature 10

Aquatic Feature 10 (AF-10) is a short ephemeral drainage flowing northwest to southeast and connecting downstream to AF-9. AF-10 begins on a steep, southeast-facing slope and flows for approximately 220 feet before dissipating into sheetflow. The sheetflow at the bottom of AF-10 flows across a narrow dirt access road and connects downstream to AF-9. AF-10 feature is densely vegetated with scrub oak, Russian thistle, black sage, and toyon along the upper portion of the steep banks. The channel invert is vegetated with California sagebrush, California buckwheat, summer mustard, and tocalote. The OHWM is defined by sediment deposition and a change in vegetation and is 2 feet wide. The bank-to-bank width of AF-10 is 15 feet.

Aquatic Feature 11

Aquatic Feature 11 (AF-11) is a wide ephemeral drainage originating from Blue Cloud Road and flowing to the east for approximately 443 linear feet before continuing off site. AF-11 is densely vegetated with fourwing saltbush, fragrant sumac, scrub oak, white sage, tocalote, blue wild rye, and elderberry. A one to three feet wide OHWM is present within AF-11 and is defined by sediment deposition and a change in vegetation. AF-11 widens and flattens moving downstream as it parallels Blue Cloud Road, with the bank-to-bank width varying from 8 feet in the upper portion of the drainage to 40 feet in the lower portion.

Wetland Features

Due to the dominance of upland plant species and ephemeral flow regime of all drainages within the project site, it was determined that no potential wetland conditions or wetland features were present within the project site. Therefore, no soil pits were investigated within the project site.

Streamflow Duration Assessment Method

Michael Baker conducted a stream duration assessment using the SDAM for two representative aquatic features within the project site. Reach 1 is within AF-8 (downstream end latitude 34.478483°, longitude -118.491448°) and had a mean channel width of 9 meters and a reach length of 200 meters. Reach 2 is within AF-2 (downstream end latitude 34.476644°, longitude -118.504810°) and had a mean channel width of 2.1 meters and a reach length of 80 meters. Neither reach exhibited hydrophytic vegetation, aquatic invertebrates, algal cover, or single indicators. Therefore, both Reach 1 and Reach 2 would be considered ephemeral. Refer to Attachment F, *SDAM Forms*, for a copy of the Beta Arid West Streamflow Duration Assessment Method forms.

Non-Jurisdictional Topographic Features

Steep, undulating topography is present on the project site that contains numerous steep, narrow valleys in between sharp peaks. Each small valley has the potential to be a jurisdictional feature if signs of flow are present. Each of these valleys were reviewed during the desktop review and visited during the field survey. Most of the steep valleys were determined to be non-jurisdictional due to the lack of signs of flow and/or an OHWM. They do not contain a defined bed and bank but rather a steep, vegetated crevice between two peaks. No change in vegetation was observed from adjacent uplands and, in most cases, the ground where a "streambed" would be was so densely vegetated that the ground was not visible. In these cases, no vegetation matting was observed. Since no signs of regular flow were observed and no defined bed and bank are present within numerous crevices on site, these crevices were determined to be non-jurisdictional topographic features.

FINDINGS

All of the mapped aquatic features are tributaries to the Santa Clara River. These features exhibit an ephemeral flow regime based on the results of the SDAM assessment, are not relatively permanent waters (RPW), and do not exhibit a continuous surface connection to a downstream traditional navigable water (TNW). Accordingly, these features would not be considered subject to USACE jurisdiction pursuant to Section 404 of the Clean Water Act. Therefore, the jurisdiction of the RWQCB reflects that of the State and totals approximately 0.39 acre (7,570 linear feet) of non-wetland WoS. In addition, these aquatic features exhibited a bed and bank and are therefore considered jurisdiction to CDFW under Section 1600 *et seq.* of CFGC; the onsite portions of these aquatic features comprise approximately 2.05 acres (7,570 linear feet) of jurisdictional vegetated streambed. No associated riparian habitat was observed in association with any of these aquatic features. Refer to Table 2 below and Figures 4 and 5 provided in Attachment A).

Table 2: State and Federal Jurisdictional Resources

Feature Name	Location Lat/Long	Cowardin Type	Linear Feet	Acreage within Project Site			
				Regional Board		CDFW	
				Non-Wetland WoS	Wetland WoS	Vegetated Streambed	Riparian
Aquatic Feature 1	34.478566° -118.505720°	Riverine	174	0.01	-	0.04	-
Aquatic Feature 2	34.476463° -118.504156°	Riverine	1,724	0.14	-	0.43	-
Aquatic Feature 3	34.476294° -118.502707°	Riverine	288	0.03	-	0.10	-
Aquatic Feature 4	34.477001° -118.496221°	Riverine	952	0.04	-	0.17	-
Aquatic Feature 5	34.472952° -118.496707°	Riverine	493	0.01	-	0.03	-
Aquatic Feature 6	34.472277° -118.495826°	Riverine	258	0.02	-	0.06	-
Aquatic Feature 7	34.479145° -118.494172°	Riverine	732	0.03	-	0.34	-
Aquatic Feature 8	34.479166° -118.491190°	Riverine	1,891	0.07	-	0.49	-
Aquatic Feature 9	34.479576° -118.491490°	Riverine	400	0.01	-	0.11	-
Aquatic Feature 10	34.479316° -118.492216°	Riverine	208	0.01	-	0.07	-
Aquatic Feature 11	34.475834° -118.495172°	Riverine	450	0.02	-	0.21	-
TOTAL			**7,570**	**0.39**	**-**	**2.05**	**-**

CONCLUSIONS AND RECOMMENDATIONS

The USACE regulates discharge of dredged or fill material into WoUS pursuant to Section 404 of the CWA and Section 10 of the Rivers and Harbors Act. Although evidence of an OHWM was noted within all aquatic features within the project site, these features exhibit an ephemeral flow regime, are not RPWs, do not exhibit a continuous surface connection to a downstream TNW, and would not be subject to USACE jurisdiction under Section 404 of the Clean Water Act. Therefore, there is no USACE jurisdiction within the project site and no Section 404 permit is required prior to commencement of construction activities.

The RWQCB regulates discharges to surface waters pursuant to Section 401 of the CWA and Section 13263 of the Porter-Cologne Act. Temporary and/or permanent impacts resulting from the proposed project may require a Water Discharge Requirement (WDR) from the RWQCB pursuant to the Porter-Cologne Act prior to impacts occurring within jurisdictional areas. The RWQCB also requires that CEQA compliance be obtained prior to obtaining authorization. A RWQCB application fee is required with the application package and is calculated based on the acreage of jurisdictional impacts.

The CDFW regulates alterations to lakes, streambeds, and riparian habitats pursuant to Section 1600 *et seq*. of the CFGC. Therefore, formal notification to and subsequent authorization from CDFW may be required prior to commencement of any construction activities within the CDFW jurisdictional areas. The CDFW also requires that CEQA compliance be obtained prior to issuing the final Lake or Streambed Alteration Agreement. In addition, a notification fee is required, which is calculated based on project costs within CDFW jurisdictional areas.

Please do not hesitate to contact me at (949) 472-3468 or april.nakagawa@mbakerintl.com should you have any questions or require further information.

Sincerely,

April Nakagawa

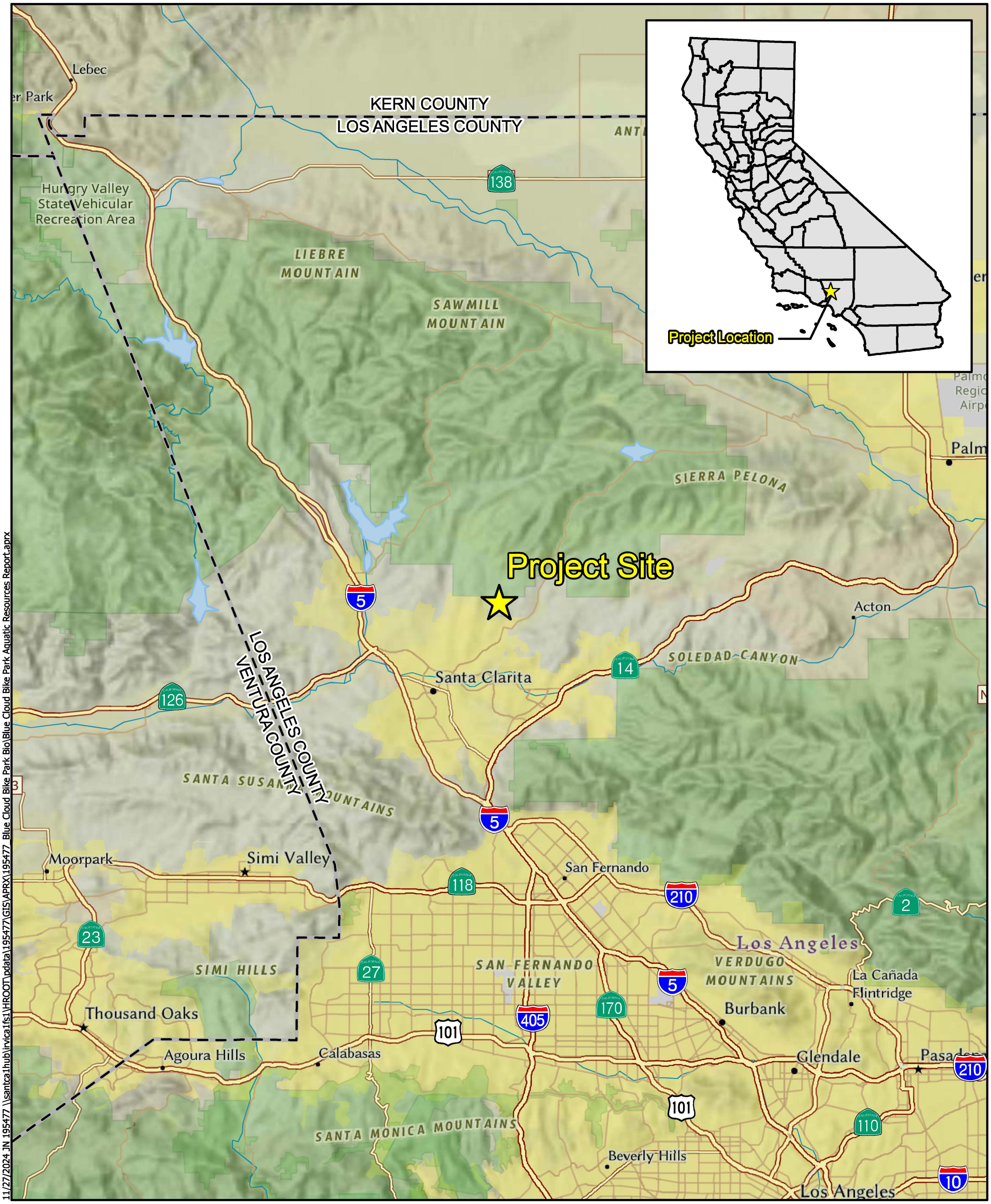
April Nakagawa
Senior Regulatory Specialist
Natural Resources & Environmental Services

Attachments:

A. *Project Figures*
B. *USFWS National Wetlands Inventory Map*
C. *FEMA Flood Insurance Rate Map*
D. *USGS National Hydrography Dataset Advanced Viewer Map*
E. *Site Photographs*
F. *SDAM Data Forms*
G. *References*

Attachment A

Project Figures



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Michael Baker INTERNATIONAL

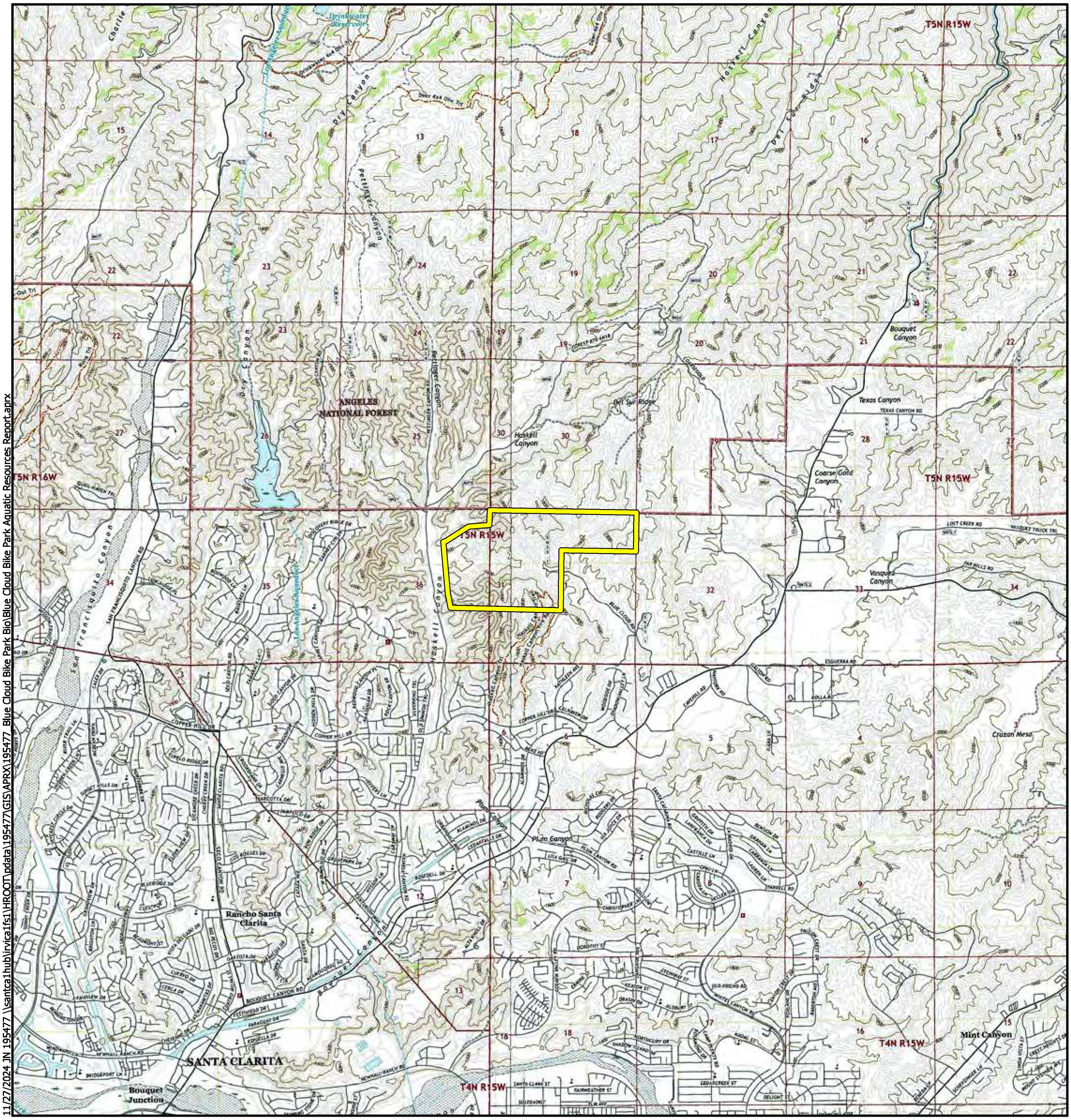
0 3 6 Miles

Source: Esri, ArcGIS Online, USGS, Los Angeles County, Kern County, Ventura County

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

Regional Vicinity

Figure 1



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Legend

Project Site

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

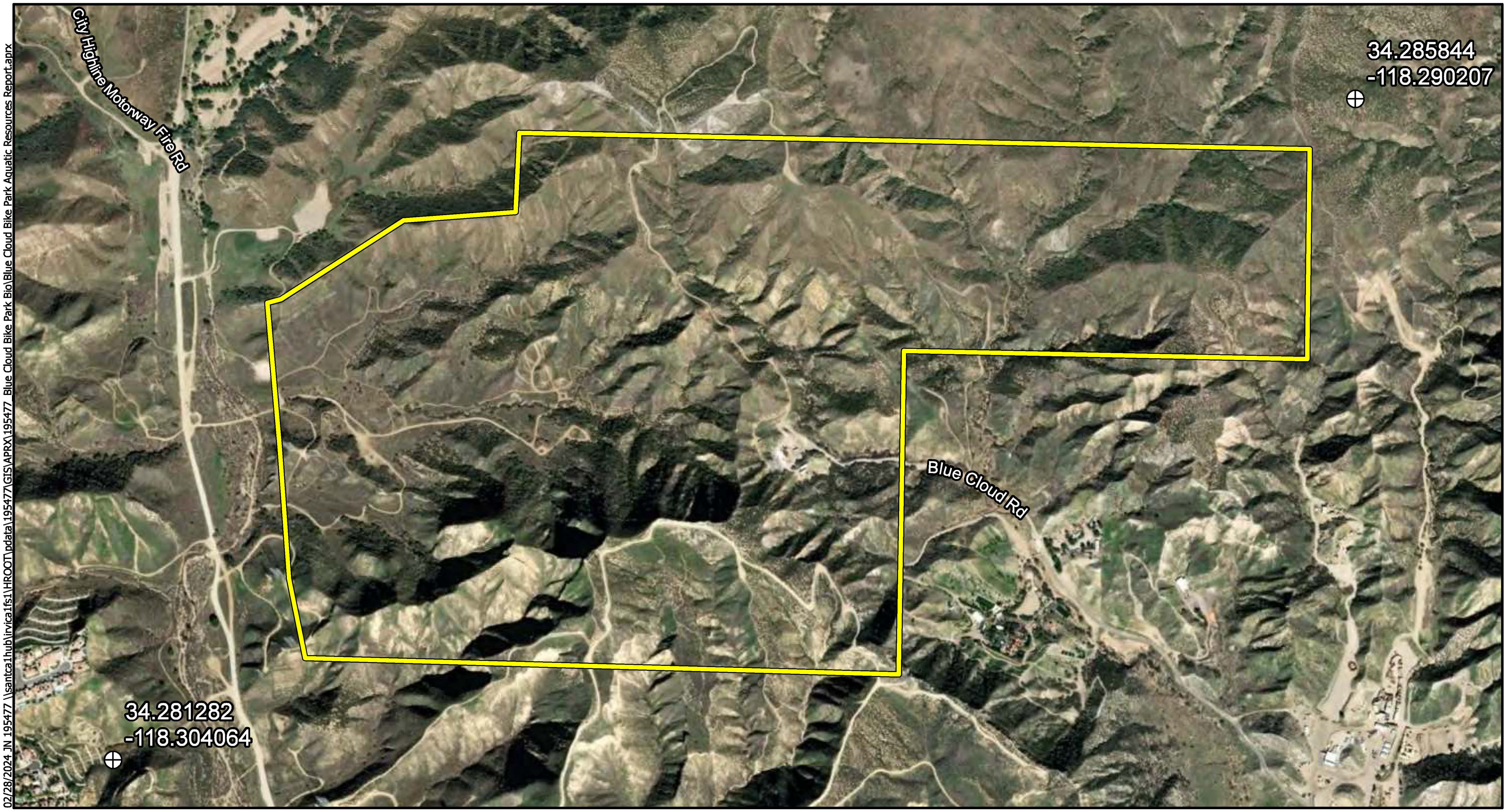
Site Vicinity

Figure 2

Michael Baker INTERNATIONAL

0 0.5 1 Miles

Source: USGS 7.5-Minute topographic quadrangle maps: *Warm Springs Mountain, Green Valley, Newhall, and Mint Canyon, California.*



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Legend

⊕ Reference Point

Project Site

Michael Baker INTERNATIONAL

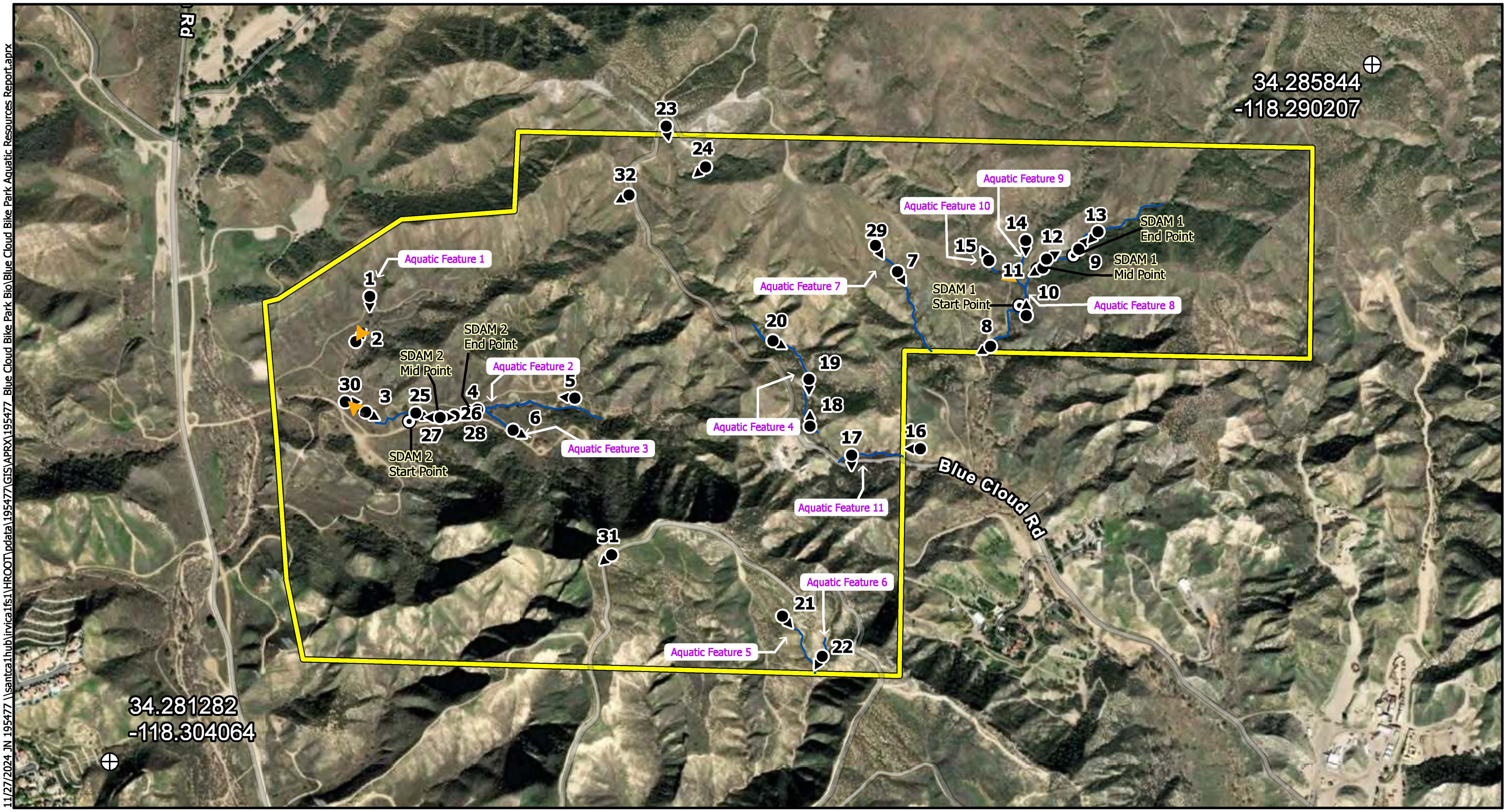
0 500 1,000 Feet

Source: Esri, ArcGIS Online, Los Angeles County

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

Project Site

Figure 3



Legend

- Reference Point
- Project Site
- SDAM Locations
- Photograph Point and Direction
- Sheetflow
- Non-Wetland WoS (0.39 Acres)

0 500 1,000 Feet

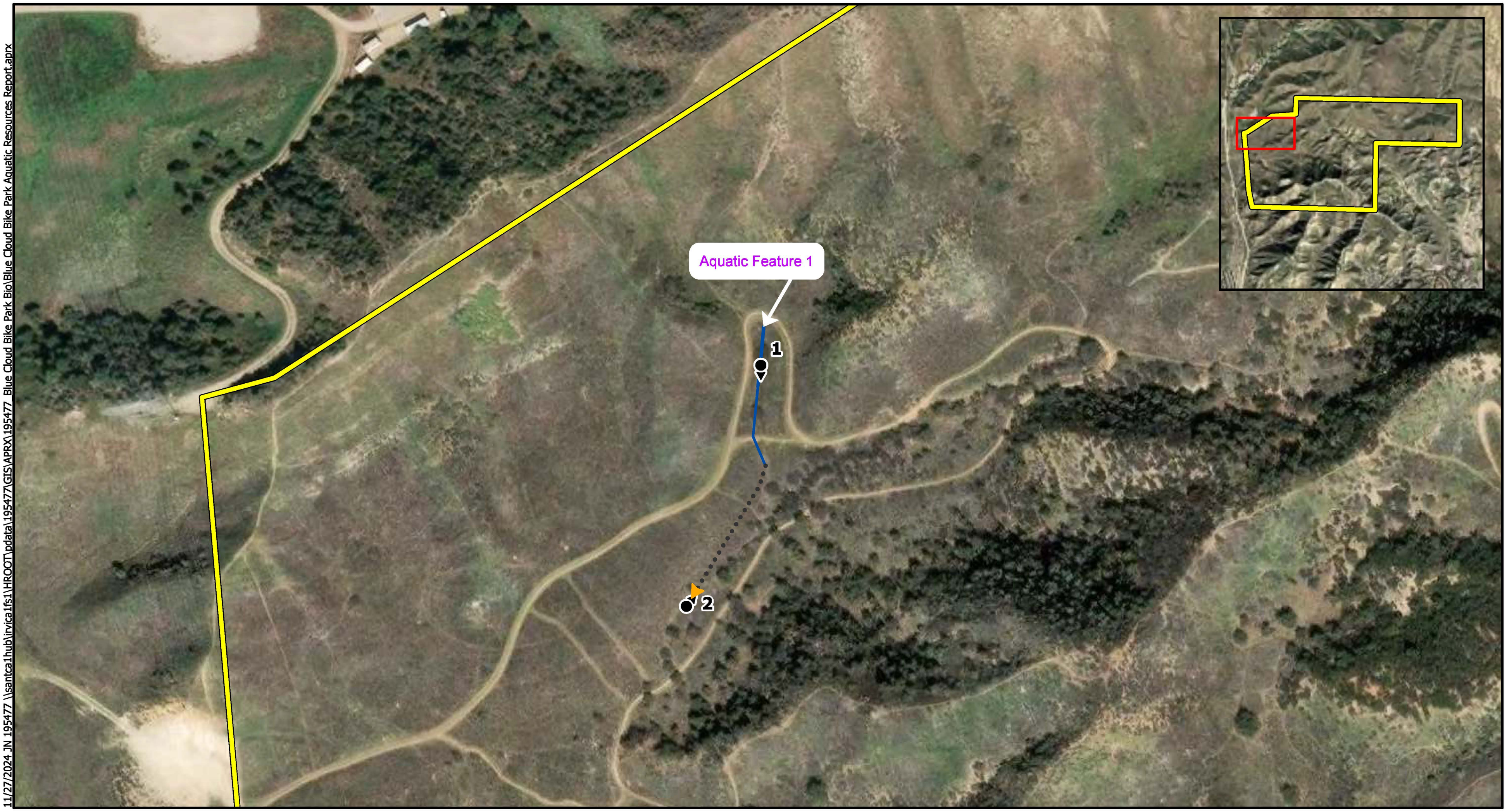
Source: Esri, ArcGIS Online

Michael Baker INTERNATIONAL

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

Regional Water Quality Control Board Jurisdictional Map

Figure 4



Legend

- Project Site
- Photograph Point and Direction
- Sheetflow
- Non-Wetland WoS (0.01 Acres)

Michael Baker INTERNATIONAL

0 100 200 Feet

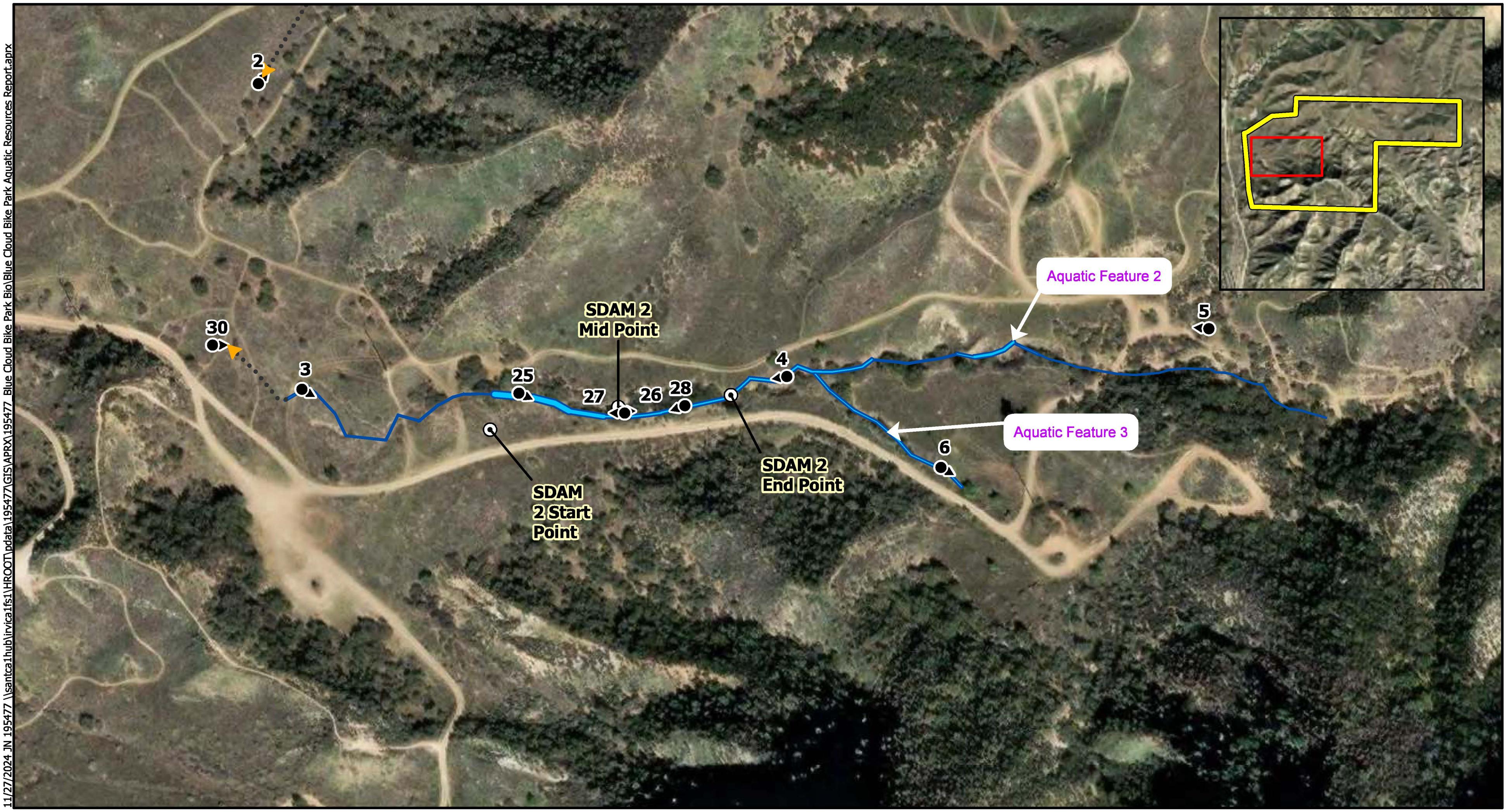
Source: Esri, ArcGIS Online

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

Regional Water Quality Control Board Jurisdictional Map

Figure 4a

11/27/2024 JN 195477 \\santca1hub\irvica1fs1\HROOT\pdata\195477\GIS\APRX\195477_Blue Cloud Bike Park Bio\Blue Cloud Bike Park Aquatic Resources Report.aprx



Legend

- Project Site
- SDAM Locations
- Photograph Point and Direction
- Sheetflow
- Non-Wetland WoS (0.17 Acres)

Michael Baker INTERNATIONAL

0 125 250 Feet

Source: Esri, ArcGIS Online

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

Regional Water Quality Control Board Jurisdictional Map

Figure 4b

Legend

Project Site

Photograph Point and Direction

Non-Wetland WoS (0.03 Acres)

Michael Baker INTERNATIONAL

0 100 200 Feet

Source: Esri, ArcGIS Online

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

Regional Water Quality Control Board Jurisdictional Map

Figure 4c

11/27/2024 JN 195477 \\santca1hub\ivica1fs1\HROOT\pdata\195477\GIS\APRX\195477_Blue Cloud Bike Park Bio\Blue Cloud Bike Park Aquatic Resources Report.aprx

Legend

- Project Site
- Photograph Point and Direction
- Non-Wetland WoS (0.06 Acres)

Michael Baker INTERNATIONAL

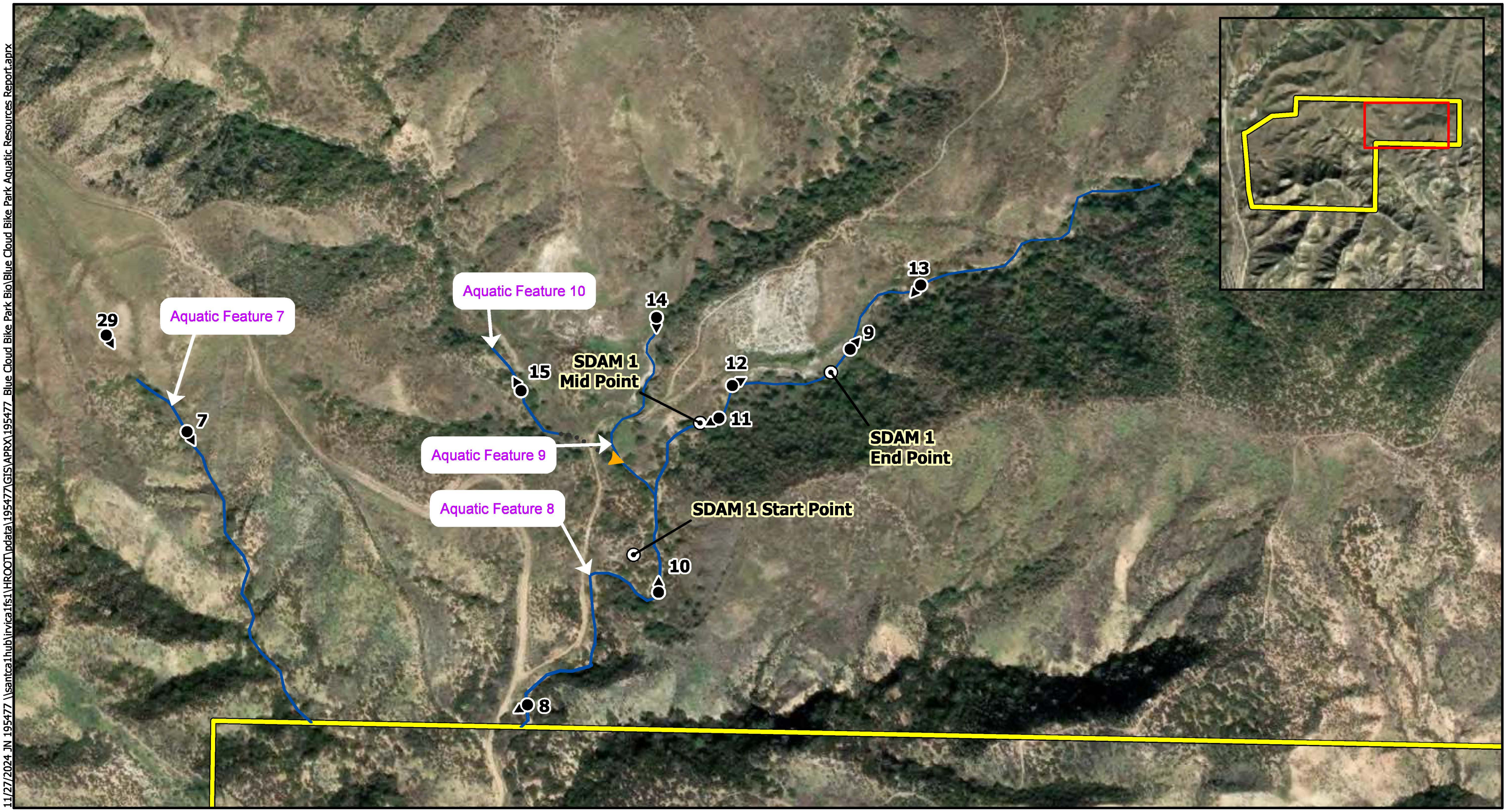
0 100 200 Feet

Source: Esri, ArcGIS Online

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

Regional Water Quality Control Board Jurisdictional Map

Figure 4d



11/27/2024 JN 195477 \\santca1hub\rvica1fs1\HROOT\pdata\195477\GIS\APRX\195477_Blue Cloud Bike Park Bio\Blue Cloud Bike Park Aquatic Resources Report.aprx

Legend

Project Site

SDAM Locations

Photograph Point and Direction

Sheetflow

Non-Wetland WoS (0.12 Acres)

Michael Baker INTERNATIONAL

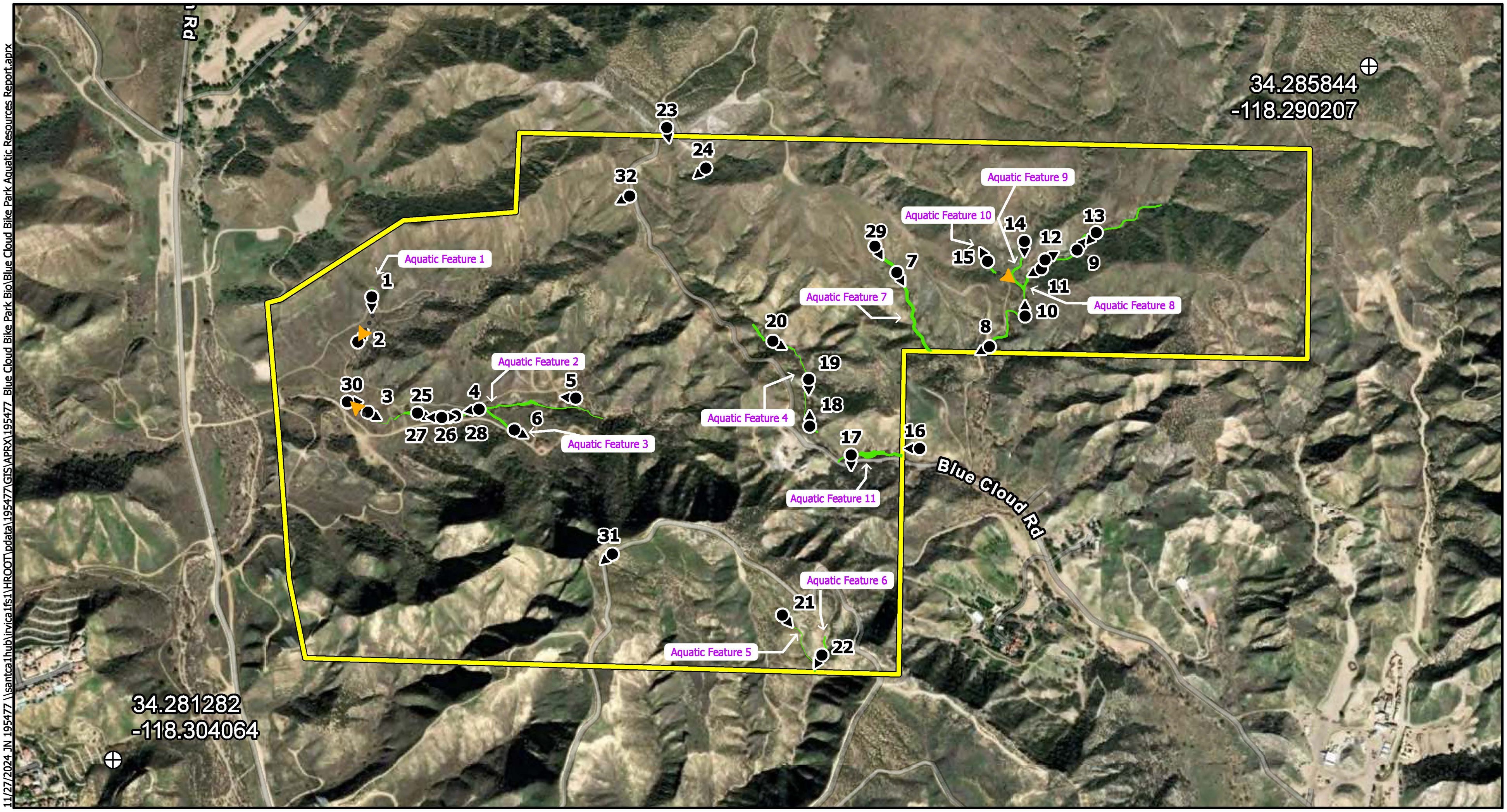
0 150 300 Feet

Source: Esri, ArcGIS Online

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

Regional Water Quality Control Board Jurisdictional Map

Figure 4e



11/27/2024 JN 195477 \\santca1hub\vica1fs1\HROOT\pdata\195477\GIS\APRX\195477_Blue Cloud Bike Park Bio\Blue Cloud Bike Park Aquatic Resources Report.aprx

Legend

- Reference Point
- Project Site
- Photograph Point and Direction
- Sheetflow
- Vegetated Streambed (2.05 Acres)

Michael Baker INTERNATIONAL

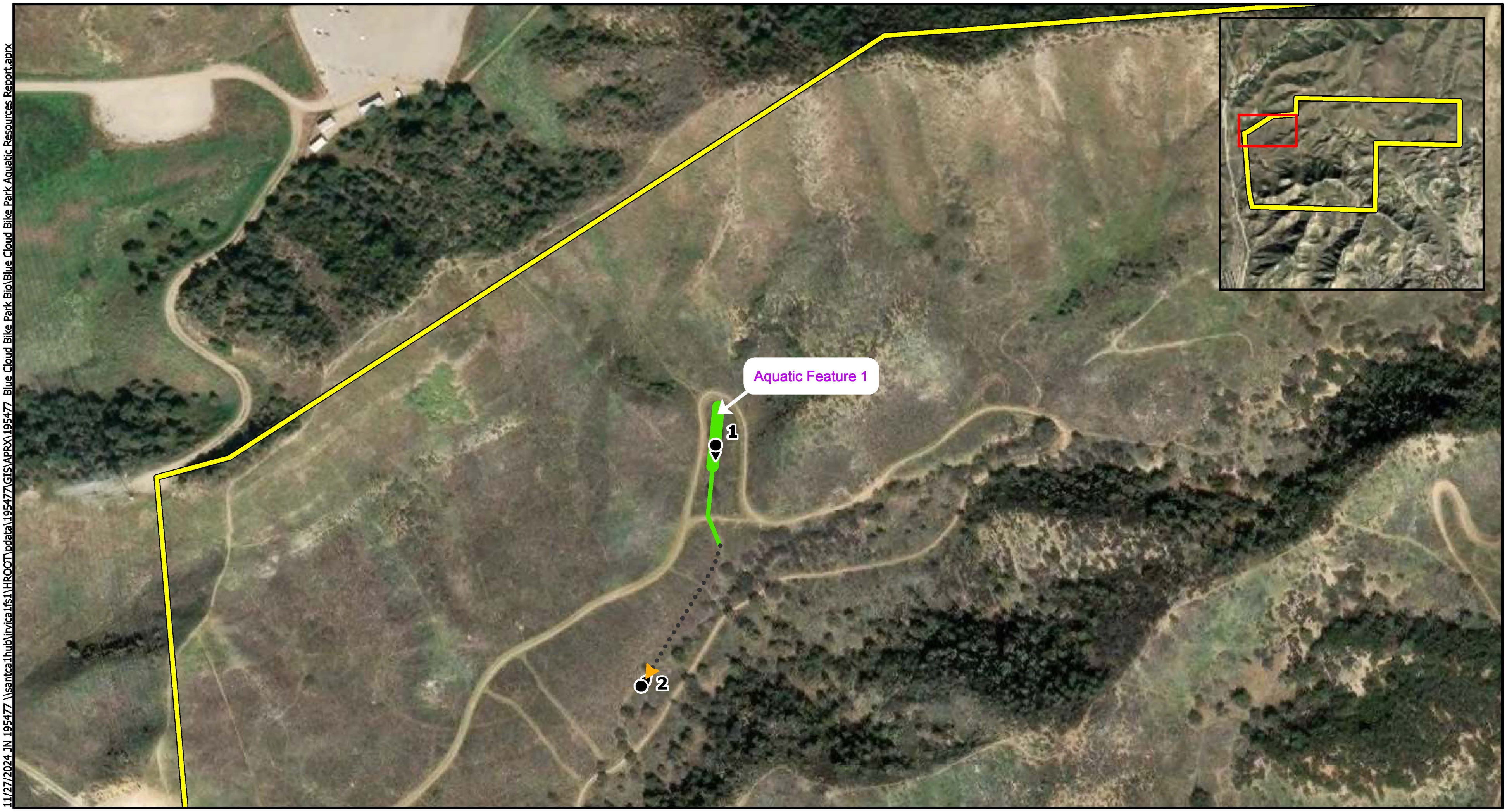
0 500 1,000 Feet

Source: Esri, ArcGIS Online

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

California Department of Fish and Wildlife Jurisdictional Map

Figure 5



Legend

Project Site

Photograph Point and Direction

Sheetflow

Vegetated Streambed (0.04 Acres)

Michael Baker INTERNATIONAL

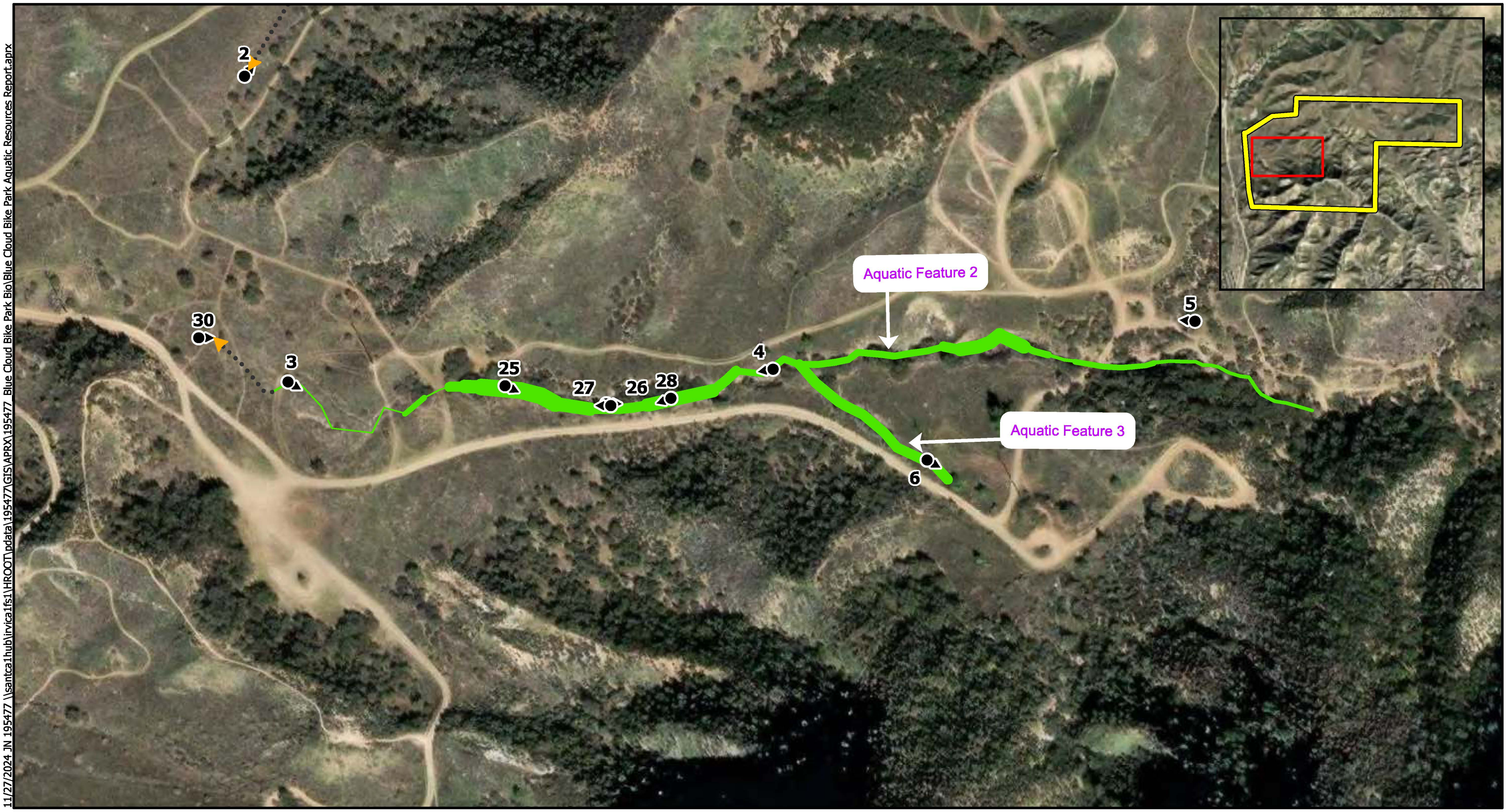
0 100 200 Feet

Source: Esri, ArcGIS Online

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

California Department of Fish and Wildlife Jurisdictional Map

Figure 5a



Legend

Project Site

Photograph Point and Direction

Sheetflow

Vegetated Streambed (0.53 Acres)

Michael Baker INTERNATIONAL

0 125 250 Feet

Source: Esri, ArcGIS Online

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

California Department of Fish and Wildlife Jurisdictional Map

Figure 5b

11/27/2024 JN 195477 \\santca1hub\irvica1fs1\HROOT\pdata\195477\GIS\APRX\195477_Blue Cloud Bike Park Bio\Blue Cloud Bike Park Aquatic Resources Report.aprx

11/27/2024 JN 195477 \\santca1hub\irvica1fs1\HROOT\pdata\195477\GIS\APRX\195477_Blue Cloud Bike Park Bio\Blue Cloud Bike Park Aquatic Resources Report.aprx

Legend

Project Site

Photograph Point and Direction

Vegetated Streambed (0.09 Acres)

Michael Baker INTERNATIONAL

0 100 200 Feet

Source: Esri, ArcGIS Online

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

California Department of Fish and Wildlife Jurisdictional Map

Figure 5c

Legend

Project Site

Photograph Point and Direction

Vegetated Streambed (0.38 Acres)

Michael Baker INTERNATIONAL

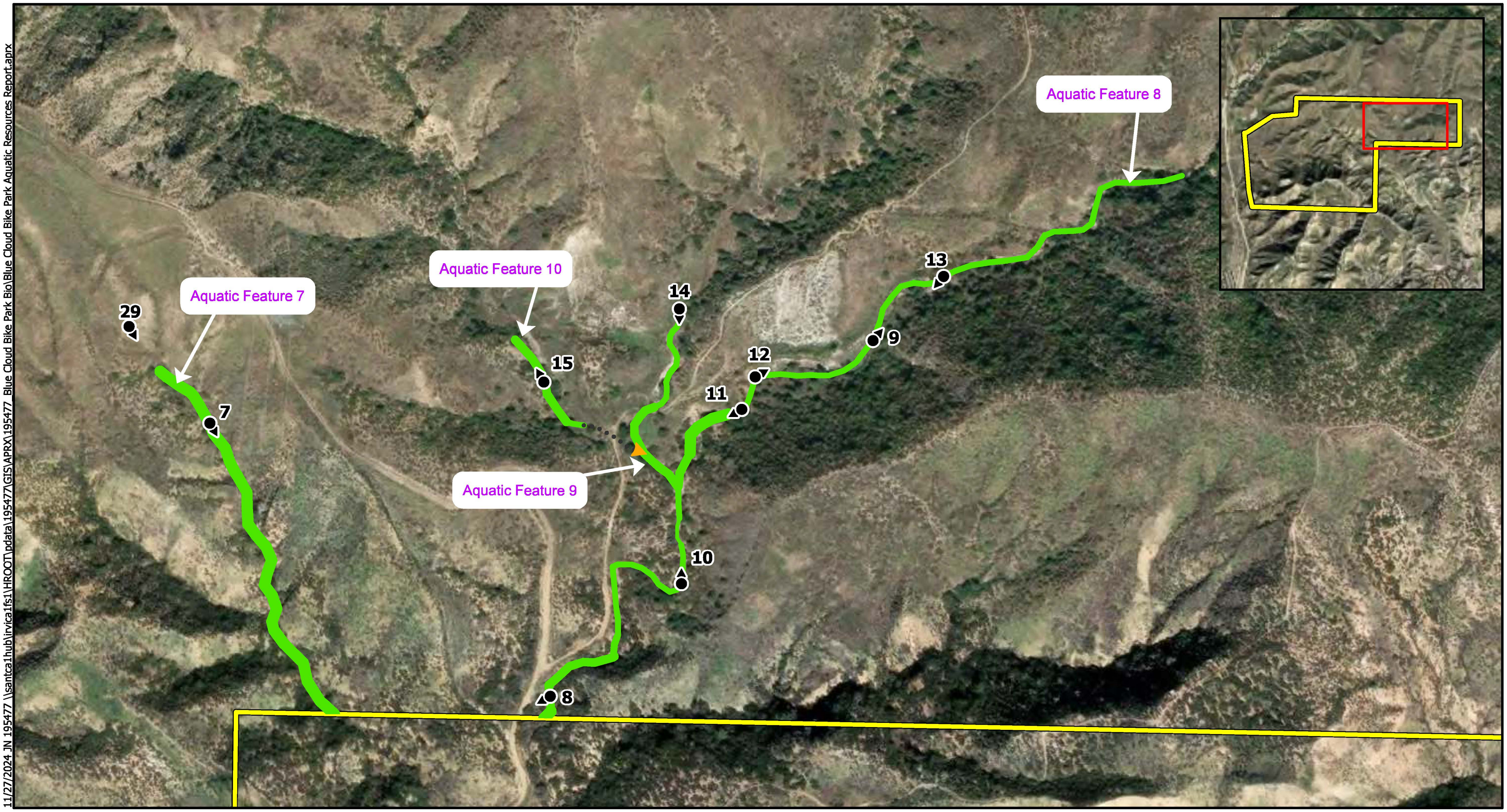
0 100 200 Feet

Source: Esri, ArcGIS Online

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

California Department of Fish and Wildlife Jurisdictional Map

Figure 5d



Legend

- Project Site
- Photograph Point and Direction
- Sheetflow
- Vegetated Streambed (1.01 Acres)

0 150 300 Feet

Source: Esri, ArcGIS Online

Michael Baker INTERNATIONAL

HASKELL CANYON BIKE PARK
AQUATIC RESOURCES DELINEATION REPORT

California Department of Fish and Wildlife Jurisdictional Map

Figure 5e

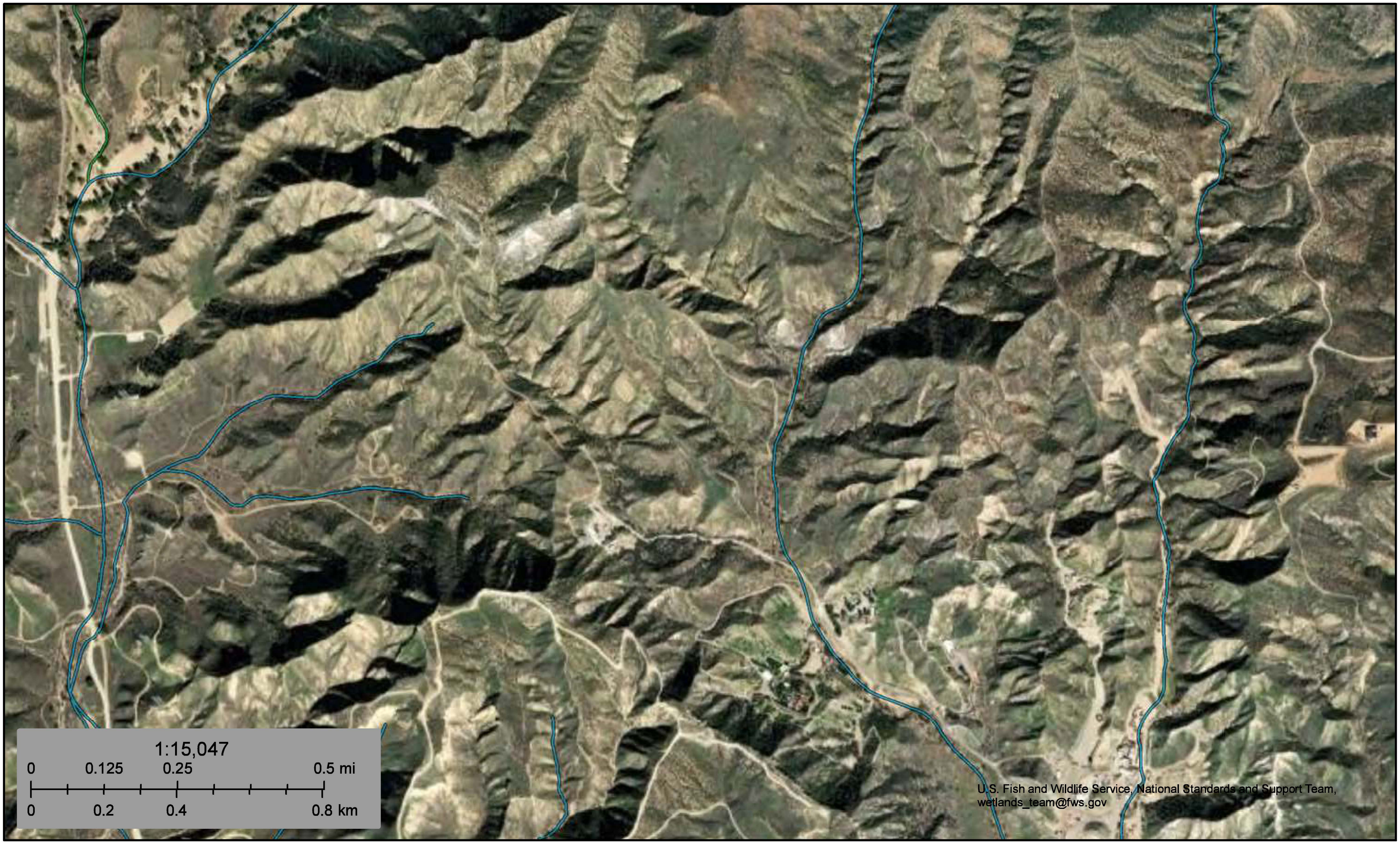
Attachment B

USFWS National Wetlands Inventory Map

U.S. Fish and Wildlife Service

National Wetlands Inventory

Haskell Canyon Bike Park Project



February 9, 2024

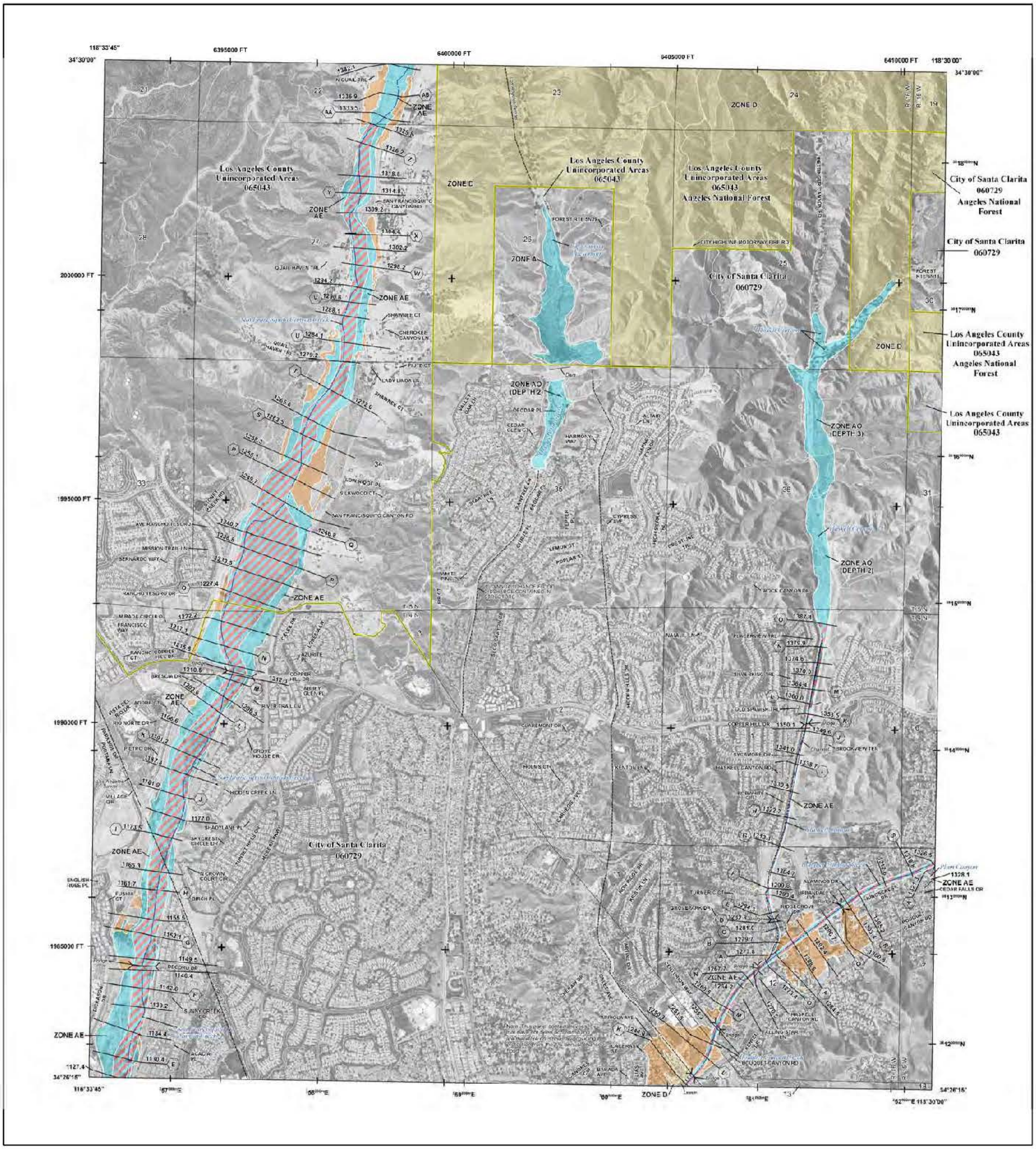
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Attachment C

FEMA Flood Insurance Rate Maps



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A, V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes *Zone X*
OTHER AREAS	NO SCREEN Areas of Minimal Flood Hazard *Zone X*
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert or Storm Sewer
	Levee, Dike or Floodwall
	(E) 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	(8) Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was derived from digital orthophotography collected by the U.S. Department of Agriculture Farm Service Agency. This imagery was flown in 2014 and was produced with a 1-meter ground sample distance.

SCALE

Map Projection:
Universal Transverse Mercator Zone 11N; North American Datum 1983;
Western Hemisphere; Vertical Datum NAVD 88

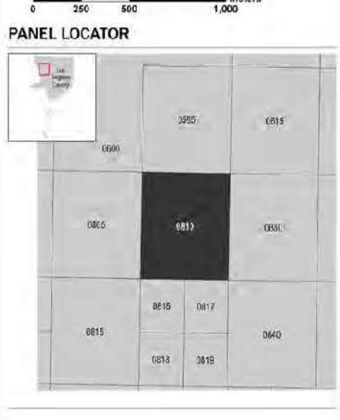
N

1 inch = 1,000 feet 1:12,000

0 1,000 2,000 4,000 feet

0 250 500 1,000 meters

PANEL LOCATOR



FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

LOS ANGELES COUNTY, CALIFORNIA
and Incorporated Areas

PANEL **810** OF **2350**

FEMA

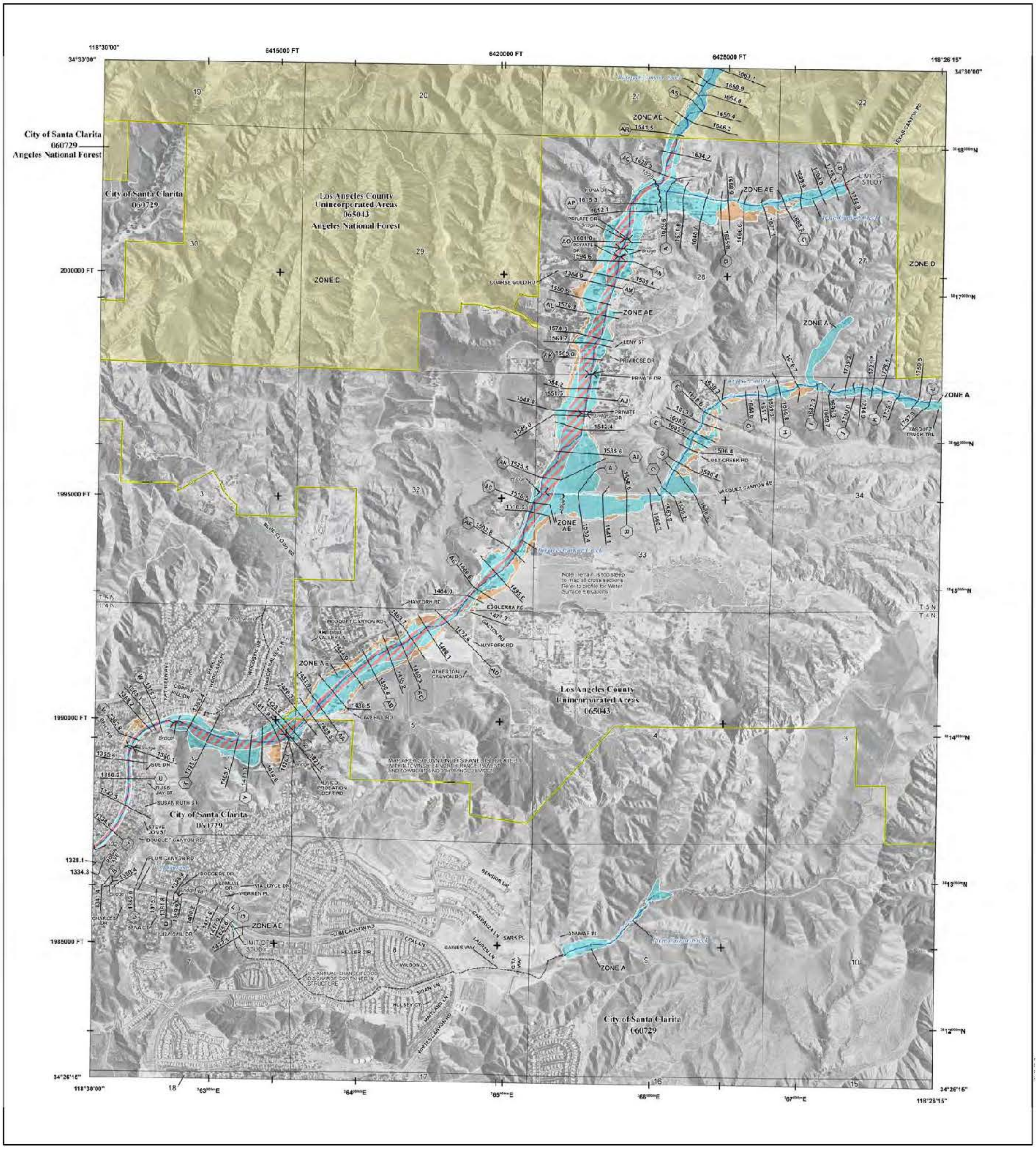
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
LOS ANGELES COUNTY	065043	0810	G
SANTA CLARITA, CITY OF	060729	0810	G

VERSION NUMBER
2.3.3.2

MAP NUMBER
06037C0810G

MAP REVISED
JUNE 2, 2021



FLOOD HAZARD INFORMATION

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	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes *Zone X*
OTHER AREAS	NO SCREEN Areas of Minimal Flood Hazard *Zone X*
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert or Storm Sewer
	Levee, Dike or Floodwall
	Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

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Base map information shown on this FIRM was derived from digital orthophotography collected by the U.S. Department of Agriculture Farm Service Agency. This imagery was flown in 2014 and was produced with a 1-meter ground sample distance.

SCALE

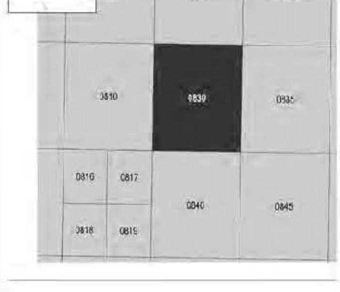
Map Projection:
Universal Transverse Mercator Zone 11N; North American Datum 1983;
Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 1,000 feet 1:12,000

0 1,000 2,000 4,000 feet

0 250 500 1,000 meters

PANEL LOCATOR



FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

LOS ANGELES COUNTY, CALIFORNIA

and Incorporated Areas

PANEL 830 OF 2350

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
LOS ANGELES COUNTY	065043	0830	G
SANTA CLARITA, CITY OF	060729	0830	G

VERSION NUMBER
2.3.3.2

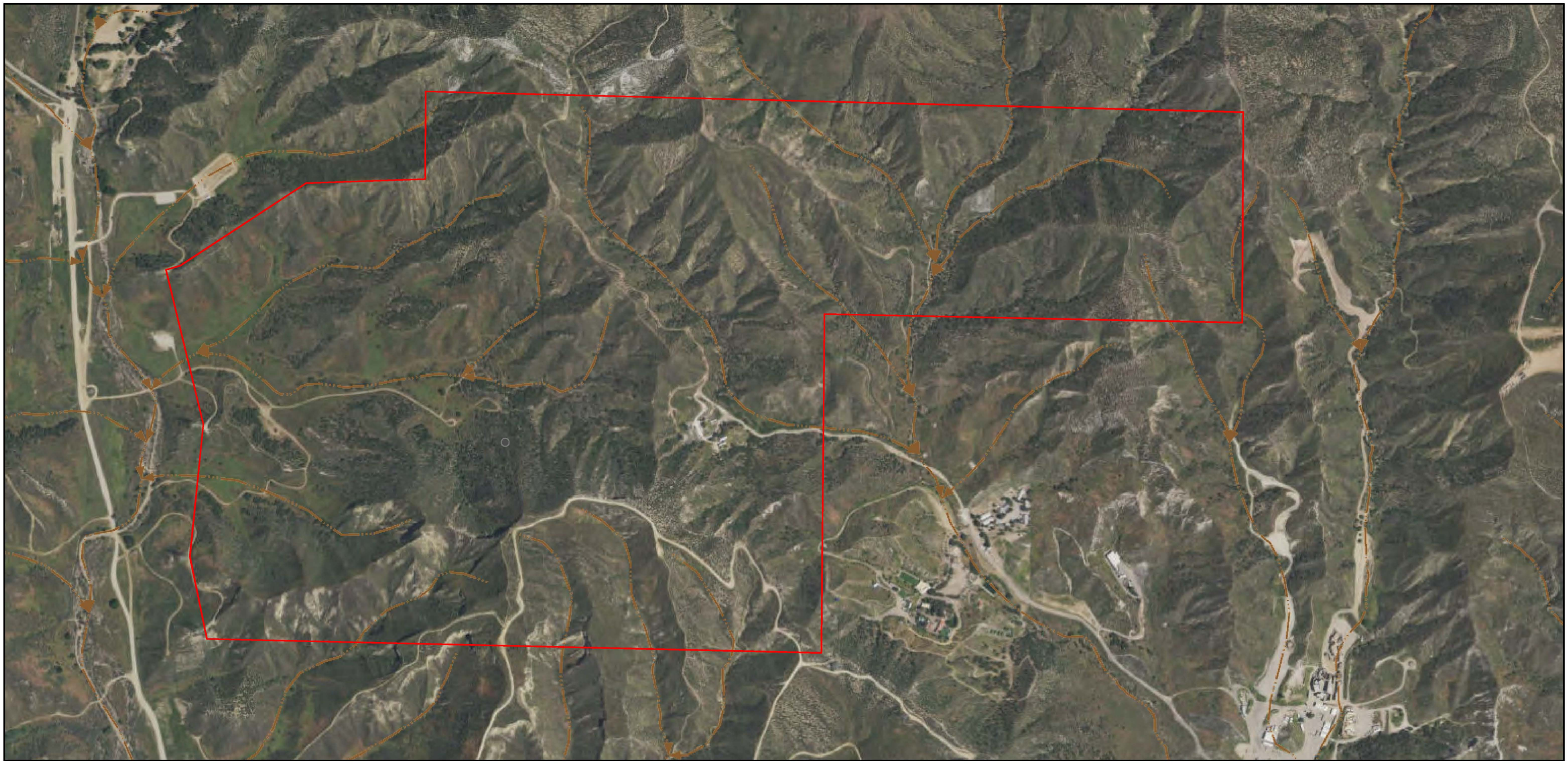
MAP NUMBER
06037C0830G

MAP REVISED
JUNE 2, 2021

Attachment D

USGS National Hydrography Dataset Advanced Viewer Map

The National Map Advanced Viewer



2/9/2024, 12:31:09 PM

4

Waterbody - Large Scale
- Estuary
- Ice Mass
- Lake Pond
- Playa
- Reservoir
- Swamp Marsh

Area - Large Scale
- Area of Complex Channels
- Area to be Submerged
- BayInlet
- Bridge
- CanalDitch
- DamWeir
- Flume
- Foreshore
- Hazard Zone
- Inundation Area
- Lock Chamber
- Rapids
- SeaOcean
- Special Use Zone
- Spillway
- StreamRiver
- Submerged Stream
- Wash
- Water IntakeOutflow

Flowline - Large Scale
- Perennial
- Intermittent
- Ephemeral
- Artificial Path
- Canal Ditch
- Coastline
- Connector
- Pipeline
- Underground Conduit

Flow Direction
- Connector
- CanalDitch
- Underground Conduit
- StreamRiver
- StreamRiver - Perennial
- StreamRiver - Intermittent
- StreamRiver - Ephemeral
- Pipeline
- Artificial Path

Line - Large Scale
- Line
- Tunnel
- Point Event

Point
- Dam/Weir
- Other

1:9,028

0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

USGS The National Map: Orthoimagery. Data refreshed December, 2021., USGS TNM – National Hydrography Dataset. Data Refreshed January, 2024.

USGS
2021 USGS

Attachment E

Site Photographs

Photograph 1: Downstream view of Aquatic Feature 1, facing S at 34.478566°, -118.505720°.

Photograph 2: Upstream view of overland sheetflow at the end of Aquatic Feature 1, facing NE at 34.477759°, -118.506088°.

Photograph 3: Upstream view of overland sheetflow at the terminus of Aquatic Feature 2, facing SE at 34.476663°, -118.506046°.

Photograph 4: Downstream representative view of Aquatic Feature 2, facing E at 34.476581°, -118.503421°.


Photograph 5: Downstream view of the upper portion of Aquatic Feature 2, facing W at 34.476650°, -118.501259°.


Photograph 6: Upstream representative view of Aquatic Feature 3, facing SE at 34.476294°, -118.502707°.


Photograph 7: Downstream representative view of Aquatic Feature 4, facing SE at 34.479145°, -118.494172°.


Photograph 8: Representative view of lower portion of Aquatic Feature 5, facing downstream, SW at 34.477956°, -118.491962°.

Photograph 9: Representative view of upper portion of Aquatic Feature 5, facing downstream, SW at 34.479478°, -118.490396°.

Photograph 10: Representative view of lower portion of Aquatic Feature 8, facing upstream, N at 34.478462°, -118.491429°.

Photograph 11: Representative view of middle portion of Aquatic Feature 8. Photo facing downstream, SW at 34.479166°, -118.491190°.

Photograph 12: Representative view of middle portion of Aquatic Feature 8. Photo facing upstream, NE at 34.479160°, -118.491173°.

Photograph 13: Upper portion of Aquatic Feature 5. Photo facing downstream, SW at 34.479755°, -118.490155°.

Photograph 14: Representative view of Aquatic Feature 9, facing downstream, S at 34.479576°, -118.491490°.

Photograph 15: Upstream representative view of Aquatic Feature 10, facing NW at 34.479316°, -118.492216°.

Photograph 16: Upstream representative view of Aquatic Feature 11, facing W at 34.475834°, -118.494183°.

Photograph 17: View of OHWM of Aquatic Feature 11, facing across the drainage, S at 34.475834°. -118.495172°.

Photograph 18: Upstream view of OHWM of Aquatic Feature 4, facing N at 34.476531°, -118.496215°.

Photograph 19: Downstream representative view of Aquatic Feature 4, facing S at 34.477001°, -118.496221°.

Photograph 20: Downstream representative view of the upper portion of Aquatic Feature 4, facing SE at 34.477893°, -118.497006°.

Photograph 21: Downstream representative view of the beginning of Aquatic Feature 5, facing SE at 34.472952°, -118.496707°.

Photograph 22: Downstream representative view of the beginning of Aquatic Feature 5, facing SE at 34.472277°, -118.495826°.

Photograph 23: Overview of topography in northern portion of site. A typical non-jurisdictional swale is present in the foreground, facing S at 34.482029°, -118.499417°.

Photograph 24: Representative view of typical non-jurisdictional feature containing upland vegetation, facing SW at 34.481024°, -118.498459°.

Photograph 25: Overview of lower portion of Aquatic Feature 2. Photo facing upstream, SE at 34.476595°, -118.504784°.

Photograph 26: Overview of middle portion of Aquatic Feature 2. Photo facing upstream, E at 34.476471°, -118.504178°.

Photograph 27: Overview of middle portion of Aquatic Feature 2. Photo facing downstream, W at 34.476463°, -118.504156°.

Photograph 28: Overview of upper portion of Aquatic Feature 2. Photo facing downstream, WSW at 34.476525°, -118.503674°.

Photograph 29: Representative overview of topography in the eastern portion of the site. Photo facing SE at 34.480416°, -118.495103°.

Photograph 30: Representative overview of topography in the western portion of the site. Photo facing SE at 34.476754°, -118.506329°.

Photograph 31: Representative overview of topography in the southern portion of the site. Photo facing SW 34.474005°, -118.500412°.

Photograph 32: Representative overview of topography in the northern portion of the site. Photo facing SW at 34.480491°, -118.500072°.

Attachment F

SDAM Datasheets

Beta Arid West Streamflow Duration Assessment Method

General site information

Project name or number: Haskell Canyon Bike Park

Site code or identifier: Reach 1

Assessor(s): April Nakagawa, Megan Minter

Waterway name: Aquatic Feature 8

Visit date: Feb 14, 2024

Current weather conditions (check one)
- ☐ Storm/heavy rain
- ☐ Steady rain
- ☐ Intermittent rain
- ☐ Snowing
- ☐ Cloudy (___ % cover)
- ☑ Clear/Sunny

Notes on current or recent weather conditions (e.g., precipitation in previous week):

Coordinates at downstream end (decimal degrees):
Lat (N): 34.476644
Long (W): -118.504810
Datum: NAD84

Surrounding land-use within 100 m (check one or two):
- ☐ Urban/industrial/residential
- ☐ Agricultural (farmland, crops, vineyards, pasture)
- ☐ Developed open-space (e.g., golf course)
- ☐ Forested
- ☑ Other natural Undeveloped open space
- ☐ Other: ______

Describe reach boundaries:
- Reach extends 200 m upstream from a representative point of entire drainage
- Reach extends to top of bank on both sides

Mean channel width (m): 9 m

Reach length (m): 40x width; min 40 m; max 200 m. 200 m

Enter photo ID, or check if completed
Top down: Photo 4 Mid down: Photo 2
Mid up: Photo 3 Bottom up: Photo 1

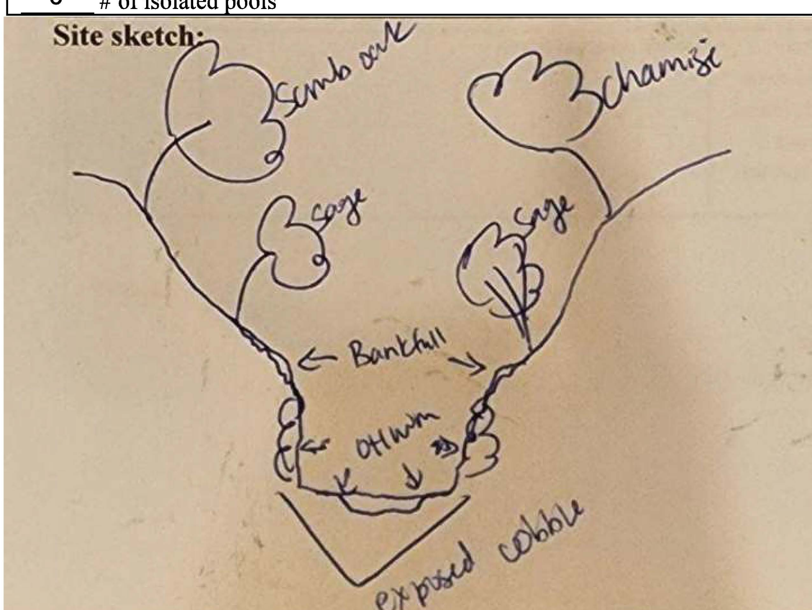
Disturbed or difficult conditions (check all that apply):
- ☐ Recent flood or debris flow
- ☐ Stream modifications (e.g., channelization)
- ☐ Diversions
- ☐ Discharges
- ☐ Drought
- ☐ Vegetation removal/limitations
- ☐ Other (explain in notes)
- ☑ None

Notes on disturbances or difficult site conditions:
Site is generally undisturbed open space owned by the City of Santa Clarita

Observed hydrology:
0 % of reach with surface flow
0 % of reach with sub-surface or surface flow
0 # of isolated pools

Comments on observed hydrology:
Stream is dry at time of survey; OHWM is present with sediment deposits, a line on the bank, sediment sorting, and a wrack line

Site sketch:



1. Hydrophytic plant species

Record up to 5 hydrophytic plant species (FACW or OBL in the **Arid West** regional wetland plant list) within the assessment area: **within the channel or up to one half-channel width**. Explain in notes if species has an odd distribution (e.g., covers less than 2% of assessment area, long-lived species solely represented by seedlings, or long-lived species solely represented by specimens in decline), or if there is uncertainty about the identification. Enter photo ID, or check if photo is taken.

Check if applicable: ☐ No vegetation in assessment area ☒ No hydrophytes in assessment area

Species	Odd distribution?	Notes	Photo ID

Notes on hydrophytic vegetation:

2 and 3. Aquatic invertebrates

2. How many aquatic invertebrates are quantified in a 15-minute search?

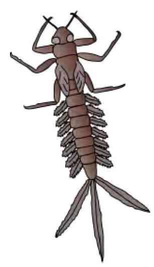
Number of individuals quantified:
☒ None
☐ 1 to 19
☐ 20 +

(Do not count mosquitos)

Photo ID:________________

3. Is there evidence of aquatic stages of EPT (Ephemeroptera, Plecoptera and Trichoptera)?

Yes / $\boxed{\text{No}}$



Ephemeroptera larva
Image credit: Dieter Tracey

Plecoptera larva
Tracey Saxby

Trichoptera larva
Tracey Saxby

Notes on aquatic invertebrates:

4. Algal Cover

Are algae found on the streambed? ☐ Check if *all* observed algae appear to be deposited from an upstream source.	☒ Not detected ☐ Yes, < 10% cover ☐ Yes, ≥ 10% (check Yes in single indicator below)	Notes on algae cover: No algae observed	Photo ID:

5. Are single indicators observed?

Indicator	Present	Notes	Photo ID
Fish	☐ Yes ☒ No, no fish ☐ No, only non-native mosquitofish		
Algae cover ≥ 10%	☐ Yes ☒ No		

Supplemental information E.g., aquatic or semi-aquatic amphibians, snakes, or turtles; iron-oxidizing bacteria and fungi; etc.

- Stream is vegetated with upland vegetation within bed and banks
- no evidence of aquatic species
- moss is present along the banks
- no bacteria/fungus is evident

Photo log

Indicate if any other photos taken during the assessment

Photo ID	Description

Additional notes about the assessment:

Channel is incised 4-6 feet through the reach. The banks contain scour and the channel contains leaf litter.

Classification: Ephemeral

1. Hydrophytic plant species	2. Aquatic invertebrates	3. EPT taxa	4. Algae	5. Single indicators • fish present • algae cover ≥ 10%	Classification
None	None	Absent	Absent	Absent	**Ephemeral**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
	Few (1-19)	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
		Present			**At least intermittent**
	Many (20+)	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
		Present			**At least intermittent**
Few (1-2)	None	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present		**At least intermittent**
	Few (1-19)	Absent	Absent		**Intermittent**
			Present		**At least intermittent**
		Present			**At least intermittent**
	Many (20+)	Absent	Absent		**Intermittent**
			Present		**At least intermittent**
		Present	Absent		**At least intermittent**
			Present		**Intermittent**
Many (3+)	None	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present		**At least intermittent**
	Few (1-19)	Absent			**At least intermittent**
		Present			**Perennial**
	Many (20+)	Absent			**At least intermittent**
		Present			**Perennial**

Shading provided to enhance readability by increasing the contrast between neighboring cells; empty cells indicate the classification will not change with additional information however it is recommended that all five indicators be measured and recorded during every assessment.

SDAM Photograph 1: Downstream most point of SDAM Reach 1 within Aquatic Feature 8. Photo facing upstream, N.

SDAM Photograph 2: Mid point of SDAM Reach 1 within Aquatic Feature 8. Photo facing downstream, SW.

SDAM Photograph 3: Mid point of SDAM Reach 1 within Aquatic Feature 8. Photo facing upstream, NE.

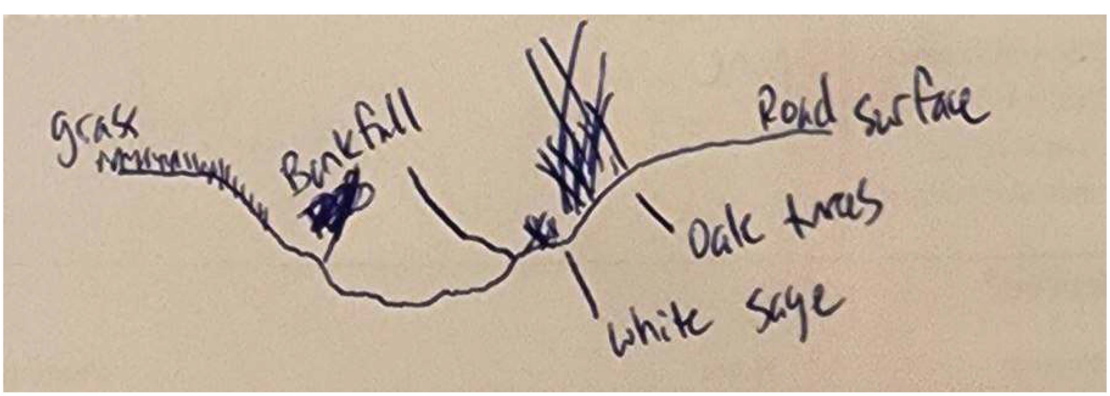
SDAM Photograph 4: End point of SDAM Reach 1 within Aquatic Feature 8. Photo facing downstream, SW.

Beta Arid West Streamflow Duration Assessment Method

General site information

Project name or number: Haskell Canyon Bike Park		
Site code or identifier: Reach 2	Assessor(s): April Nakagawa, Megan Minter	
Waterway name: Aquatic Feature 2		Visit date: Feb 15, 2024
Current weather conditions (check one) ☐ Storm/heavy rain ☐ Steady rain ☐ Intermittent rain ☐ Snowing ☐ Cloudy (___ % cover) ☑ Clear/Sunny	Notes on current or recent weather conditions (e.g., precipitation in previous week):	Coordinates at downstream end (decimal degrees): Lat (N): 34.476644 Long (W): -118.504810 Datum: NAD84
Surrounding land-use within 100 m (check one or two): ☐ Urban/industrial/residential ☐ Agricultural (farmland, crops, vineyards, pasture) ☐ Developed open-space (e.g., golf course) ☐ Forested ☑ Other natural Undeveloped open space ☐ Other: ________	Describe reach boundaries: - Upstream reach extends to a confluence - Downstream reach is representative of entire drainage - Reach extends to top of bank on both sides	
Mean channel width (m) 2.1 m	Reach length (m): 40x width; min 40 m; max 200 m. 80 m	Enter photo ID, or check if completed Top down: Photo 8 Mid down: Photo 5 Mid up: Photo 6 Bottom up: Photo 4
Disturbed or difficult conditions (check all that apply): ☐ Recent flood or debris flow ☐ Stream modifications (e.g., channelization) ☐ Diversions ☐ Discharges ☐ Drought ☐ Vegetation removal/limitations ☐ Other (explain in notes) ☑ None	Notes on disturbances or difficult site conditions: Site is generally undisturbed open space owned by the City of Santa Clarita	
Observed hydrology: 0 % of reach with surface flow 0 % of reach with sub-surface or surface flow 0 # of isolated pools	Comments on observed hydrology: Stream is dry at time of survey; minimal soil cracking observed, vegetation matting observed, OHWM is present	

Site sketch:



1. Hydrophytic plant species

Record up to 5 hydrophytic plant species (FACW or OBL in the **Arid West** regional wetland plant list) within the assessment area: **within the channel or up to one half-channel width**. Explain in notes if species has an odd distribution (e.g., covers less than 2% of assessment area, long-lived species solely represented by seedlings, or long-lived species solely represented by specimens in decline), or if there is uncertainty about the identification. Enter photo ID, or check if photo is taken.

Check if applicable: ☐ No vegetation in assessment area ☒ No hydrophytes in assessment area

Species	**Odd distribution?**	**Notes**	**Photo ID**

Notes on hydrophytic vegetation:

2 and 3. Aquatic invertebrates

2. How many aquatic invertebrates are quantified in a 15-minute search?

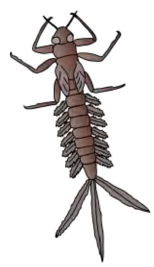
Number of individuals quantified:
☒ None
☐ 1 to 19
☐ 20 +

(Do not count mosquitos)

Photo ID:__________________

3. Is there evidence of aquatic stages of EPT (Ephemeroptera, Plecoptera and Trichoptera)?

Yes / $\boxed{\text{No}}$



Ephemeroptera larva
Image credit: Dieter Tracey

Plecoptera larva
Tracey Saxby

Trichoptera larva
Tracey Saxby

Notes on aquatic invertebrates:

4. Algal Cover

Are algae found on the streambed? ☐ Check if *all* observed algae appear to be deposited from an upstream source.	☒ Not detected ☐ Yes, < 10% cover ☐ Yes, ≥ 10% (check Yes in single indicator below)	Notes on algae cover: No algae observed	Photo ID:

5. Are single indicators observed?

Indicator	**Present**	**Notes**	**Photo ID**
Fish	☐ Yes ☒ No, no fish ☐ No, only non-native mosquitofish		
Algae cover ≥ 10%	☐ Yes ☒ No		

Supplemental information E.g., aquatic or semi-aquatic amphibians, snakes, or turtles; iron-oxidizing bacteria and fungi; etc.

Stream is vegetated with upland vegetation within bed and banks

Channel is incised 3-5 feet through the reach.

Photo log

Indicate if any other photos taken during the assessment

Photo ID	Description

Additional notes about the assessment:

mid channel width = 4 meters
bottom channel width = 4 meters

Classification: Ephemeral

1. Hydrophytic plant species	2. Aquatic invertebrates	3. EPT taxa	4. Algae	5. Single indicators • fish present • algae cover ≥ 10%	Classification
None	None	Absent	Absent	Absent	**Ephemeral**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
	Few (1-19)	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
		Present			**At least intermittent**
	Many (20+)	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
		Present			**At least intermittent**
Few (1-2)	None	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present		**At least intermittent**
	Few (1-19)	Absent	Absent		**Intermittent**
			Present		**At least intermittent**
		Present			**At least intermittent**
	Many (20+)	Absent	Absent		**Intermittent**
			Present		**At least intermittent**
		Present	Absent		**At least intermittent**
			Present		**Intermittent**
Many (3+)	None	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present		**At least intermittent**
	Few (1-19)	Absent			**At least intermittent**
		Present			**Perennial**
	Many (20+)	Absent			**At least intermittent**
		Present			**Perennial**

Shading provided to enhance readability by increasing the contrast between neighboring cells; empty cells indicate the classification will not change with additional information however it is recommended that all five indicators be measured and recorded during every assessment.

SDAM Photograph 5: Downstream most point of SDAM Reach 2 within Aquatic Feature 2. Photo facing upstream, SE.

SDAM Photograph 6: Mid point of SDAM Reach 2 within Aquatic Feature 2. Photo facing upstream, E.

SDAM Photograph 7: Mid point of SDAM Reach 2 within Aquatic Feature 2. Photo facing downstream, W

SDAM Photograph 8: End point of SDAM Reach 2 within Aquatic Feature 2. Photo facing downstream, WSW

Attachment G

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USGS. 2024c. *Newhall* 7.5 Minute Topographic Quadrangle. Accessed via Google Earth February 2024.

APPENDIX D:
PHASE I CULTURAL RESOURCES ASSESSMENT

Michael Baker INTERNATIONAL
5050 Avenida Encinas, Suite 260 | Carlsbad, CA 92008
Office: 760.603.6251 | Fax: 858.614.5001
Contact: James T. Daniels, Jr. james.daniels@mbakerintl.com
JN 192626

Phase I Cultural Resources Assessment for the Blue Cloud Bike Park Project

Santa Clarita, Los Angeles County, California

Prepared for:
City of Santa Clarita
23920 Valencia Blvd.
Valencia, CA 91355

Prepared by:
James T. Daniels Jr., MA, RPA
Senior Archaeologist
and
Marcel Young, BA
Associate Archaeologist
Michael Baker International

April 2024

Phase I Cultural Resources Assessment for the Blue Cloud Bike Park Project, Santa Clarita, Los Angeles County, California

Prepared for
City of Santa Clarita
Planning Division
23920 Valencia Boulevard, Suite 302
Santa Clarita, California 91355

Prepared by
James T. Daniels Jr., MA, RPA
and
Marcel Young, BA

Michael Baker
INTERNATIONAL

5050 Avenida Encinas, Suite 260
Carlsbad, CA 92008

Project No. 195477

April 2024
Draft

National Archaeological Database (NADB)
Type of Study: Literature Search, Intensive Pedestrian Survey, Significance Evaluation
New Sites: BlueCloud-MBI-01H
Updated Sites: CA-LAN-3132H
USGS 7.5' Quadrangle: Newhall and Mint Canyon
Acreage: 500 acres
Level of Investigation: CEQA Phase I

Keywords: Santa Clarita; CEQA; BlueCloud-MBI-01H; CA-LAN-3132H

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MANAGEMENT SUMMARY

The City of Santa Clarita (City) proposes to construct the Blue Cloud Bike Park Project (project), a mountain bike park in the northern portion of the City that would include approximately 15 miles of 4- to 6-foot-wide trails interspersed throughout the project site and two activity/programming areas. Trail types for all skill levels provided would include approximately 3.7 miles of perimeter and climbing trails, approximately 5.5 miles of downhill bike trails, and approximately 5 miles of multi-use trails. The Project would also maintain approximately 1.6 miles of existing multi-use trails. The Haskell Bike Park Core, located on the western portion of the project site, would include an event plaza with picnic tables and a flexible stage, pump tracks, a dual slalom course, progressive jumplines, a progressive skills area, event/spectator areas, shade structures, two vault restrooms , a bike repair station, a rest area with benches and shade structure, and cargo containers for storage areas. Parking for the Haskell Bike Park Core would be provided within a 99-space parking lot and a parking/emergency turnaround with eight additional parking spaces, two American Disabilities Act (ADA) parking spaces, and four spaces for food trucks. The Blue Cloud Trailhead, located near the central portion of the project site, would feature a field station with gathering and restoration workspaces for volunteers, designated areas for potential future landscape restoration, a multi-use trailhead, vault restrooms, a bike repair station, and the Saddle Trail Hub (meeting space for riders with a shade structure). Parking for the Blue Cloud Trailhead would be provided within a parking/emergency turnaround with 10 parking spaces and one ADA parking space, and along Blue Cloud Road.

The project is subject to compliance with the California Environmental Quality Act (CEQA). The City is the CEQA lead agency. This Phase 1 Cultural Resources Assessment is produced compliant with CEQA standards.

In support of the project, Michael Baker International conducted background and archival research, South Central Coastal Information Center records search, Native American Heritage Commission Sacred Lands File search, an archaeological field survey, buried site sensitivity analysis, and California Register of Historical Resources (California Register) evaluation of one previously recorded historic-period archaeological site and one newly identified site. These efforts were completed to determine whether the proposed project could result in significant impacts to historical and archaeological resources as defined by CEQA Section 15064.5.

Based on the results of the study, the two historic-period archaeological sites have been evaluated as ineligible for the California Register, and therefore are not historical resources as defined by CEQA Section 15064.5(a), nor do they meet the definition of a "unique archeological resource" as defined in Public Resources Code Section 21083.2. As such, no further work is recommended for these resources. A finding of less than significant impact with mitigation incorporated under CEQA is appropriate for the project. Refer to the recommended mitigation measures in Chapter 7.

TABLE MS-1. CULTURAL RESOURCES WITHIN THE PROJECT AREA

Resource Name	Description	California Register Evaluation Recommendation	Historic Property/ Historical Resource
CA-LAN-3132H	Structure Pads	Ineligible	No
BlueCloud-MBI-01H	Mining Site	Ineligible	No

1.0 INTRODUCTION

This report presents the results of Michael Baker International's Phase I Cultural Resources Assessment for the proposed Blue Cloud Bike Park Project (project). The cultural resources assessment was conducted in compliance with the California Environmental Quality Act (CEQA), for which the City of Santa Clarita (City) is the lead agency. The cultural resources assessment included background and archival research, a South Central Coastal Information Center (SCCIC) records search, a Native American Heritage Commission (NAHC) Sacred Lands File search, historical society consultation, an archaeological field survey, buried site sensitivity analysis, and California Register of Historical Resources (California Register) evaluation of two historic-period archaeological sites. The sites are recommended as ineligible for listing in the California Register. These efforts were completed to determine whether the proposed project could result in significant impacts to historical and archaeological resources as defined by CEQA Section 15064.5.

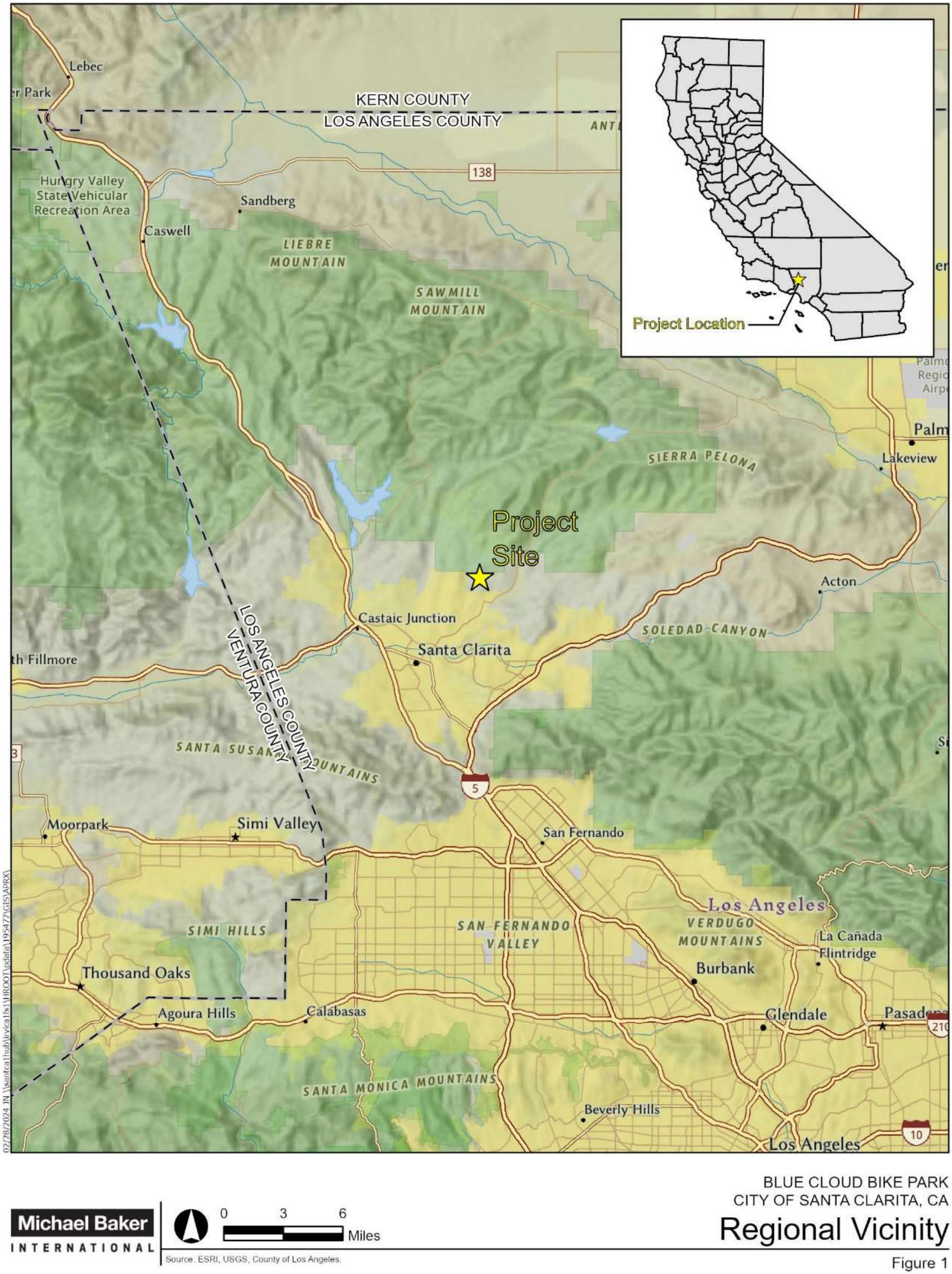
1.1 PROJECT LOCATION AND DESCRIPTION

The 380.82-acre project site is generally located roughly 6 miles east of Interstate 5 and roughly 5 miles north of State Route 14 within the City of Santa Clarita, Los Angeles County, California (**Figure 1**). The proposed project area is mapped in Section 31, Township 5 North, Range 15 West on the U.S. Geological Survey (USGS) *Mint Canyon, California* 7.5-minute quadrangle and Section 36, Township 5 North, Range 16 West on the USGS *Newhall, California* 7.5-minute quadrangle (**Figure 2**). Specifically, the project site is located within Haskell Canyon Open Space south of the Angeles National Forest, north of Copper Hill Drive, east of an unnamed Los Angeles Department of Water and Power (LADWP) dirt access road adjacent to Haskell Canyon Wash, and northwest of Blue Cloud Road. The project site is primarily located on Assessor's Parcel Numbers (APN) 2813-010-273, 2813-010-274, 2813-010-275, 2813-010-276, 2813-010-900, 2813-010-901, 2813-010-902, 2813-025-270, and 3244-031-901.

The project proposes to construct the Blue Cloud Bike Park Project (project), a mountain bike park in the northern portion of the City that would include approximately 15 miles of 4- to 6-foot-wide trails interspersed throughout the project site and two activity/programming areas. Trail types for all skill levels provided would include approximately 3.7 miles of perimeter and climbing trails, approximately 5.5 miles of downhill bike trails, and approximately 5 miles of multi-use trails. The Project would also maintain approximately 1.6 miles of existing multi-use trails. The Haskell Bike Park Core, located on the western portion of the project site, would include an event plaza with picnic tables and a flexible stage, pump tracks, a dual slalom course, progressive jumplines, a progressive skills area, event/spectator areas, shade structures, two vault restrooms, a bike repair station, a rest area with benches and shade structure, and cargo containers for storage areas. Parking for the Haskell Bike Park Core would be provided within a 99-space parking lot and a parking/emergency turnaround with eight additional parking spaces, two American Disabilities Act (ADA) parking spaces, and four spaces for food trucks. The Blue Cloud Trailhead, located near the central portion of the project site, would feature a field station with gathering and restoration workspaces for volunteers, designated areas for potential future landscape restoration, a multi-use trailhead, vault restrooms, a bike repair station, and the Saddle Trail Hub (meeting space for riders with a shade structure). Parking for the Blue Cloud Trailhead would be provided within a parking/emergency turnaround with 10 parking spaces and one ADA parking space, and along Blue Cloud Road.

1.2 STUDY AREA

The cultural resources study area for the project consists of the proposed trails and amenities for the bike park and a 20-meter radius surrounding them (**Figure 3**). This was the area covered during the pedestrian survey, less those areas with slopes of 30 degrees or greater, as slopes of 30 degrees or greater pose a hazard for pedestrian surveys and have low probability for archaeological deposits.



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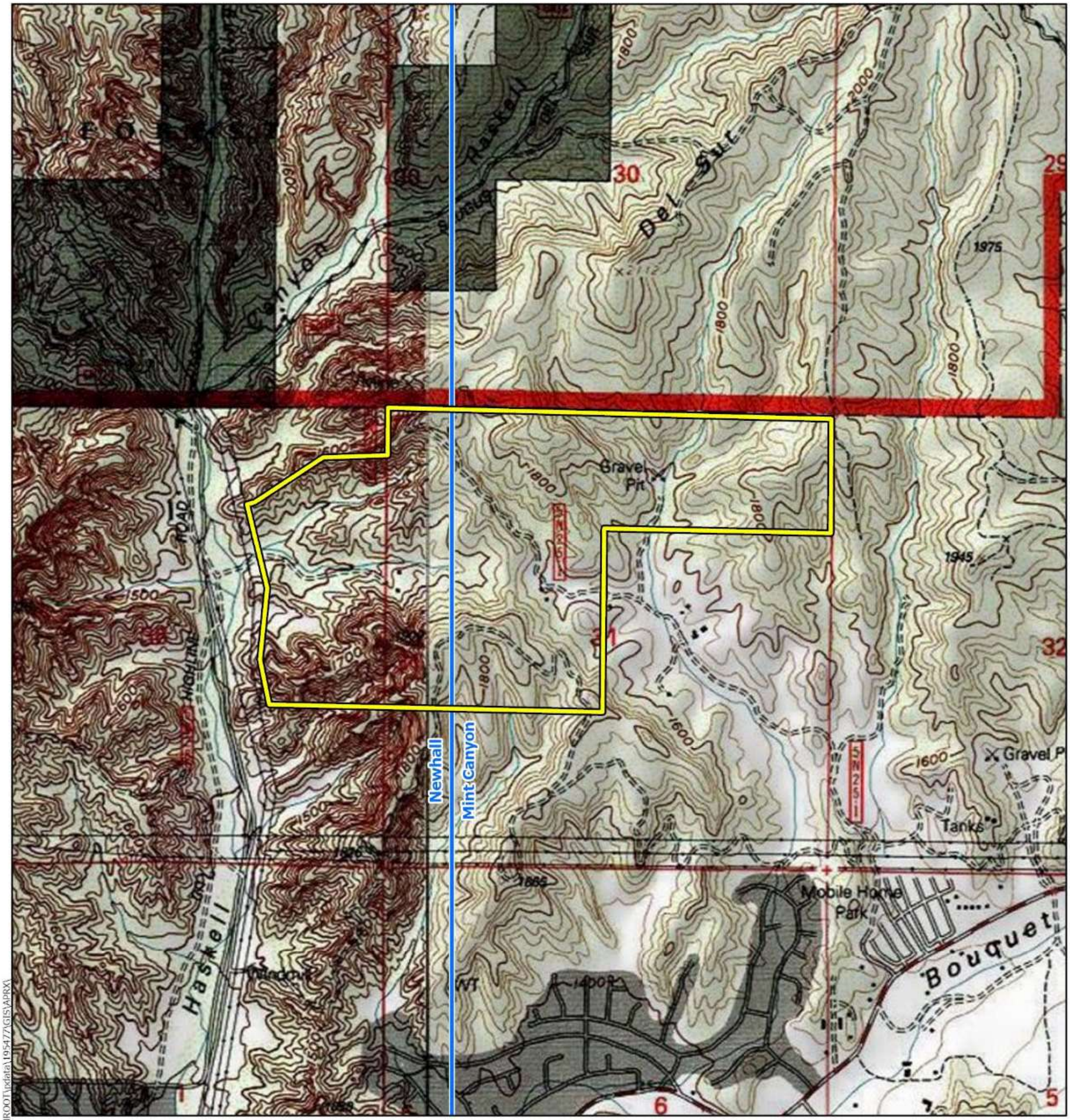
Michael Baker INTERNATIONAL

Source: ESRI, USGS, County of Los Angeles.

BLUE CLOUD BIKE PARK
CITY OF SANTA CLARITA, CA

Regional Vicinity

Figure 1



Legend

Blue Cloud Bike Park Project Area

7.5-minute USGS quadrangle boundaries

Michael Baker INTERNATIONAL

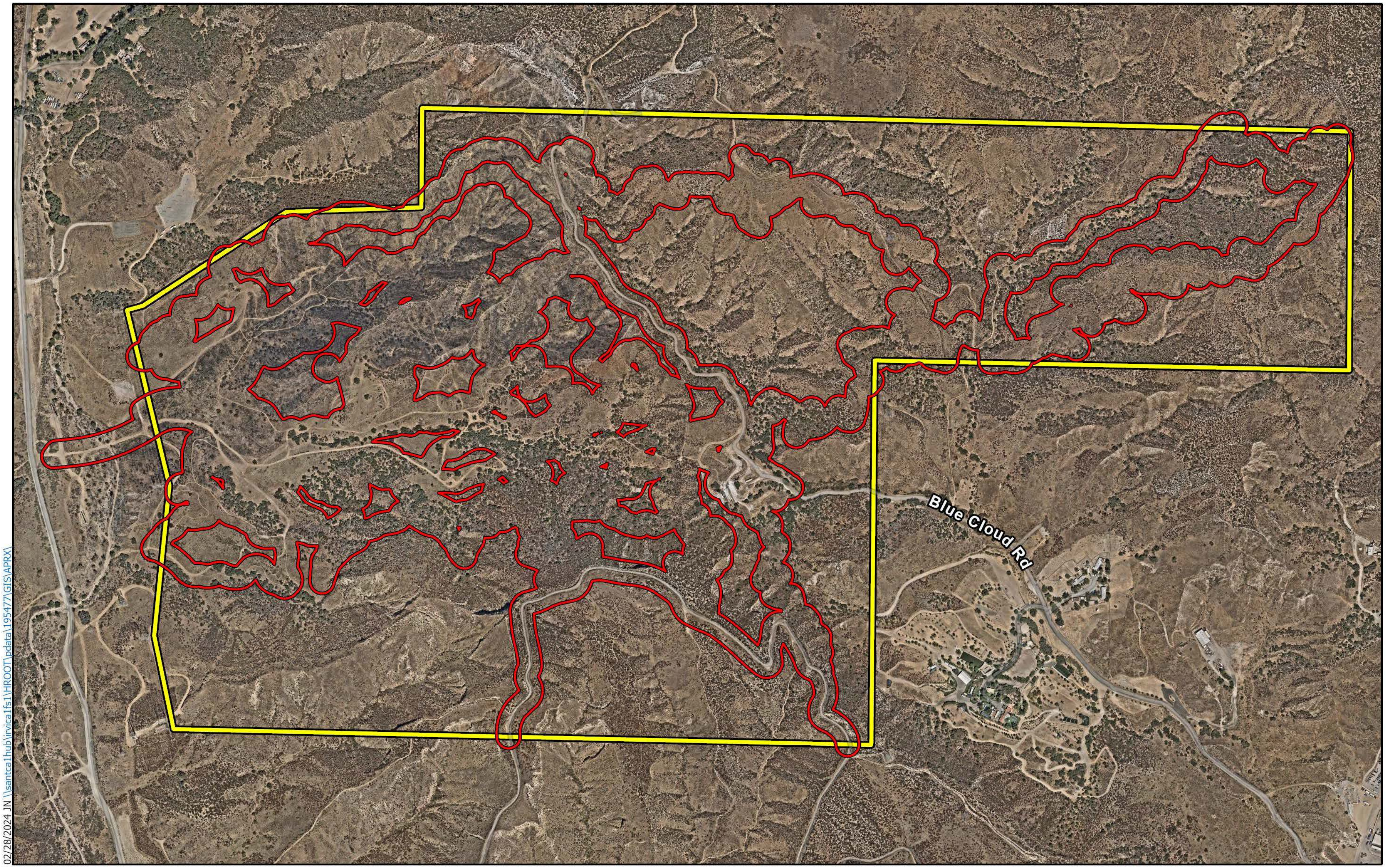
0 0.25 0.5 Miles

Source: Esri, ArcGIS Online, USGS 7.5-Minute topographic quadrangle maps; *Newhall and Mint Canyon, California*

BLUE CLOUD BIKE PARK PROJECT
CITY OF SANTA CLARITA, CA

Project Location

Figure 2



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Legend

Blue Cloud Project Area

Blue Cloud Cultural Survey Area

Michael Baker INTERNATIONAL

0 500 1,000 Feet

Source: Esri, ArcGIS Online, 2023 Nearmap Imagery: Santa Clarita, California

BLUE CLOUD BIKE PARK
SANTA CLARITA, CA

Phase I Cultural Resources Survey Area

Figure 3

1.3 REGULATORY FRAMEWORK

1.3.1 California Environmental Quality Act

CEQA applies to all discretionary projects undertaken or subject to approval by the state's public agencies (California Code of Regulations [CCR] Title 14[3] Section 15002[i]). CEQA conditions that it is the policy of the state of California to "take all action necessary to provide the people of this state with historic environmental qualities and preserve for future generations examples of the major periods of California history" (Public Resources Code [PRC] Section 21001[b], [c]). Under the provisions of CEQA, "a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (CCR Title 14[3] Section 15064.5[b]).

CEQA Guidelines Section 15064.5(a) defines a "historical resource" as a resource that meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register.
- Listed in a local register of historical resources (as defined in PRC Section 5020.1[k]).
- Identified as significant in a historical resource survey meeting PRC Section 5024.1(g) requirements.
- Determined to be a historical resource by a project's lead agency (CCR Title 14[3] Section 15064.5[a]).

A historical resource consists of "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. … Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing in the California Register of Historical Resources" (CCR Title 14[3] Section 15064.5[a][3]).

The CEQA planning process requires considering historical resources and unique archaeological resources (CCR Title 14[3] Section 15064.5; PRC Section 21083.2). If feasible, adverse effects to the significance of historical resources must be avoided or mitigated (CCR Title 14[3] Section 15064.5[b][4]). The significance of a historical resource is impaired when a project demolishes or materially alters adversely those physical characteristics of a historical resource that convey its historical significance and justify its eligibility for the California Register. If there is a substantial adverse change in the significance of a historical resource, the preparation of an environmental impact report may be required (CCR Title 14[3] Section 15065[a]).

If the cultural resource in question is an archaeological site, CEQA (CCR Title 14[3] Section 15064.5[c][1]) requires that the lead agency first determine if the site is a historical resource as defined in CCR Title 14(3) Section 15064.5(a). If the site qualifies as a historical resource, potential adverse impacts must be considered in the same manner as a historical resource (California Office of Historic Preservation [OHP] 2001a). If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological site, then the archaeological site is treated in accordance with PRC Section 21083.2 (CCR Title 14[3] Section 15069.5[c][3]). In practice, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource. CEQA defines a "unique archaeological resource" as an archaeological artifact, object, or site about which it can be demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2[g]).

If an impact to a historical or archaeological resource is significant, CEQA requires feasible mitigation measures to minimize the impact (CCR Title 14[3] Section 15126.4[a][1]). Mitigation must lessen or eliminate the physical impact that the project will have on the resource. Generally, drawings, photographs, and/or displays do not mitigate the physical impact on the environment caused by the demolition or the destruction of a historical resource. However, CEQA (PRC Section 21002.1[b]) requires that all feasible mitigation be undertaken even if it does not mitigate impacts to a less than significant level (OHP 2001a: 9).

1.3.2 California Register of Historical Resources

The California Register is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The California Register helps government agencies identify and evaluate California's historical resources (OHP 2001b: 1) and indicates which properties are to be protected, to the extent prudent and feasible, from substantial adverse change (PRC Section 5024.1[a]). Any resource listed in, or eligible for listing in, the California Register is to be considered during the CEQA process (OHP 2001a: 7).

A cultural resource is evaluated under four criteria to determine its historical significance. A resource must be significant in accordance with one or more of the following criteria:

Criterion 1: Is associated with events that have made a significant contribution to the broad pattern of California's history and cultural heritage.

Criterion 2: Is associated with the lives of persons important in our past.

Criterion 3: Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

Criterion 4: Has yielded, or may be likely to yield, information important in prehistory or history.

Age

In addition to meeting one or more of the above criteria, the California Register requires that sufficient time must have passed to allow a "scholarly perspective on the events or individuals associated with the resource." Fifty years is used as a general estimate of the time needed to understand the historical importance of a resource (OHP 2006: 3). OHP recommends documenting, and taking into consideration in the planning process, any cultural resource that is 45 years or older (OHP 1995: 2).

Period of Significance

The period of significance for a property is "the length of time when a property was associated with important events, activities, persons, or attained the characteristics which qualify it for National Register listing" (NPS 1997: 42). The period of significance begins with the date of the earliest important land use or activity that is reflected by historic characteristics tangible today. The period closes with the date when events having historical importance ended. The period of significance for an archaeological property is "the broad span of time about which the site or district is likely to provide information" (NPS 1997: 42). Archaeological properties may have more than one period of significance.

Integrity

The California Register also requires a resource to possess integrity, which is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association" (OHP 2006: 2).

Archaeologists use the term "integrity" to describe the level of preservation or quality of information contained within a district, site, or excavated assemblage. Integrity is relative to the specific significance that the resource conveys. Although it is possible to correlate the seven aspects of integrity with standard archaeological site characteristics, those aspects are often unclear for evaluating the ability of an archaeological resource to convey significance under Criterion 4. The integrity of archaeological resources is judged according to the site's ability to yield scientific and cultural information that can be used to address important research questions (NPS 1997: 44–49).

Eligibility

Resources that are significant, meet the age guidelines, and possess integrity are considered eligible for listing in the California Register.

1.3.3 California Public Resources Code Section 5097.5

PRC Section 5097.5 prohibits excavation or removal of any "vertebrate paleontological site … or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority, or public corporation, or any agency thereof. PRC Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

1.3.4 California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the NAHC within 24 hours of this identification. The NAHC will identify a Native American most likely descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

1.3.5 City of Santa Clarita General Plan and Municipal Code

The Conservation and Open Space Element of the General Plan for the City of Santa Clarita (2011) includes the following goals, objectives, and policies related to cultural resources that would be applicable to the proposed project:

Goal CO 5: Protection of historical and culturally significant resources that contribute to community identity and a sense of history.

Objective CO 5.1: Protect sites identified as having local, state, or national significance as a cultural or historical resource.

Policy CO 5.1.1: For sites identified on the Cultural and Historical Resources Map (Exhibit CO-6), review appropriate documentation prior to issuance of any permits for grading, demolition, alteration, and/or new development, to avoid significant adverse impacts. Such documentation may include cultural resource reports, environmental impact reports, or other information as determined to be adequate by the reviewing authority.

Policy CO 5.1.2: Review any proposed alterations to cultural and historic sites identified in Table CO-1 or other sites which are so designated, based on the guidelines contained in the Secretary of the Interior's Standards for the Treatment of Properties (Title 36, Code of Federal Regulations, Chapter 1, Part 68, also known as 36 CFR 68), or other adopted City guidelines.

Policy CO 5.1.3: As new information about other potentially significant historic and cultural sites becomes available, update the Cultural and Historical Resources Inventory and apply appropriate measures to all identified sites to protect their historical and cultural integrity.

Objective CO 5.3: Encourage conservation and preservation of Native American cultural places, including prehistoric, archaeological, cultural, spiritual, and ceremonial sites on both public and private lands, throughout all stages of the planning and development process.

Policy CO 5.3.1: For any proposed general plan amendment, specific plan, or specific plan amendment, notify and consult with any California Native American tribes on the contact list maintained by the California Native American Heritage Commission that have traditional lands located within the City's jurisdiction, regarding any potential impacts to Native American resources from the proposed action, pursuant to State guidelines.

Policy CO 5.3.2: For any proposed development project that may have a potential impact on Native American cultural resources, provide notification to California Native American tribes on the contact list maintained by the Native American Heritage Commission that have traditional lands within the City's jurisdiction, and consider the input received prior to a discretionary decision.

Policy CO 5.3.3: Review and consider a cultural resources study for any new grading or development in areas identified as having a high potential for Native American resources, and incorporate recommendations into the project approval as appropriate to mitigate impacts to cultural resources.

Chapter 17.64 of the City of Santa Clarita's Municipal Code, Historic Preservation, seeks preservation and protection of "public and private historic, cultural, and natural resources which are of special historic or aesthetic character or interest, or relocating such resources where necessary for their preservation and for their use, education, and view by the general public."

A building, structure, or object may be designated by the Planning Commission "as a historic resource if it possesses sufficient character-defining features and integrity, and meets at least one of the following criteria:

> 1. Is associated with events that have made a significant contribution to the historical, archaeological, cultural, social, economic, aesthetic, engineering, or architectural development of the City, State or Nation; or
>
> 2. Is associated with persons significant in the history of the City, State or Nation; or
>
> 3. Embodies distinctive characteristics of a style, type, period, or method of construction, or is a valuable example of the use of indigenous materials or craftsmanship; or
>
> 4. Has a unique location, singular physical characteristic(s), or is a landscape, view or vista representing an established and familiar visual feature of a neighborhood, community, or the City; or
>
> 5. Has yielded, or has the potential to yield, information important to the history or prehistory of the City, State, or Nation."

1.3.6 Native American Heritage Values

Federal and state laws mandate that contemporary Native Americans' concerns about potentially ancestral human remains, associated funerary objects, and items of cultural patrimony be considered. Consequently, an important element in assessing the significance of the study site has been evaluating the likelihood that these classes of items are present in areas that would be affected by the proposed project.

Potentially relevant to prehistoric archaeological sites is the category termed traditional cultural properties (TCP) in discussions of cultural resource management performed under federal auspices. According to Patricia L. Parker and Thomas F. King (1998), "traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. Cultural resources can include TCPs, such as gathering areas, landmarks, and ethnographic locations, in addition to archaeological districts. Generally, a TCP may consist of a single site, or group of associated archaeological sites (district or traditional cultural landscape), or an area of cultural/ethnographic importance.

In California, the Traditional Tribal Cultural Places Bill of 2004 requires local governments to consult with Native American tribes during the project planning process, specifically before adopting or amending a general plan or a specific plan, or when designating land as open space for protecting Native American cultural places. The intent of this legislation is to encourage consultation and assist in the preservation of Native American places of prehistoric, archaeological, cultural, spiritual, and ceremonial importance. State Assembly Bill (AB) 52, effective July 1, 2015, introduced into CEQA the tribal cultural resource (TCR) as a class of cultural resources and additional considerations relating to Native American consultation. As a general concept, a TCR is similar to the federally defined TCP; however, it incorporates consideration of local and state significance and requires mitigation under CEQA. A TCR may be considered significant if it is included in a local or state register of historical resources; is determined by the lead agency to be significant pursuant to criteria set forth in PCR Section 5024.1; is a geographically defined cultural landscape that meets one or more of these criteria; and/or is a historical resource described in PCR Section 21084.1, a unique archaeological resource described in PCR Section 21083.2, or is a non-unique archaeological resource if it conforms with PRC Section 21074(a).

1.4 PROJECT PERSONNEL

James Daniels, MA, RPA, served as principal investigator and primary author of this report. Marcel Young, BA, and Epifanio Figueroa, BA, conducted the archaeological pedestrian survey. Marc Beherec, PhD, RPA, provided overall project management support and senior technical review.

2.0 PROJECT SETTING

2.1 NATURAL SETTING

California is divided into 11 geomorphic provinces, each defined by unique geologic and geomorphic characteristics. The project area is in the central portion of the Transverse Ranges geomorphic province, marked by east–west trending mountain ranges and valleys in contrast to the northwest-trending ranges of coastal California (CGS 2002). This geomorphic province extends offshore to include physiogeographic features, such as the northern members of the Channel Islands of Santa Cruz, Santa Rosa, and San Miguel Islands (CGS 2002). The Transverse Ranges province crosses several counties and is bound by the Pacific Ocean to the west, the Coast Ranges and Sierra Nevada geomorphic provinces to the north, the Mojave Desert geomorphic province to the east, and the Peninsular Ranges and Colorado Desert geomorphic provinces to the south.

The geology of the Santa Clarita area was mapped by Campbell et al. (2016) at a scale of 1:100,000 and by Dibblee and Ehrenspeck (1996) at a scale of 1:24,000. Geologic units underlying the project area are mapped as alluvial gravel, sand, and clay of the valley area that date to the Holocene epoch (Qa of Dibblee and Ehrenspeck 1996). The Mint Canyon formation consists of terrestrial sedimentary deposits ranging from conglomerate through sandstone to claystone that date to the Miocene epoch (Tmc of Dibblee and Ehrenspeck 1996).

According to the *Custom Soil Resource Report for Antelope Valley Area, California* (US Department of Agriculture 2023), the project site is underlain by four soil map units: Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded (CmF2); Saugus loam, 30 to 50 percent slopes, eroded (ScF2); Sorrento loam, 2 to 5 percent slopes (SsB); and Yolo loam, 2 to 9 percent slopes (YoC).

The project area is within the Venturan-Angeleno Coastal Hills ecoregion, a part of the larger California Coastal Sage and Chaparral ecoregion. The plant and animal species that would have been present during prehistoric times in this ecoregion include a mix of California sagebrush (*Artemisia californica*), toyon (*Heteromeles arbutifolia*), coast live oak (*Quercus agrifolia*), lemonadeberry (*Rhus integrifolia*), chamise (*Adenostoma fasciculatum*), manzanita (*Arctostaphylos spp.*), laurel sumac (*Malosma laurina*), blue elderberry (*Sambucus Mexicana*), bigpod ceanothus (*Ceanothus megacarpus*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and California buckwheat (*Eriogonum fasciculatum*) (Griffith et al. 2016). The vegetation is adapted to a Mediterranean climate, with hot, dry summers and mild, wet winters. The region's wildlife during late prehistory would have included the California condor (*Gymnogyps californianus)*, mountain lion (*Puma concolor*), California red-legged frog (*Rana draytonii*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), black-tailed deer (*Odocoileus hemionus*), gray fox (*Urocyon cinereoargenteus*), western fence lizard (*Sceloporus occidentalis*), western gray squirrel (*Sciurus griseus*), California quail (*Callipepla californica*), white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), and great horned owl (*Bubo virginianus*).

2.2 CULTURAL SETTING

This section provides a brief summary of the prehistoric record and ethnohistoric and historic settings of the project area.

2.2.1 Prehistoric Period

The project area is within a segment of California where the prehistoric record is not as well documented as in other regions in the state. There have been a few significant archaeological studies within the Santa Clarita Valley, but they have not fully defined the local culture history of the Santa Clarita Valley and have thus lumped the region into neighboring cultural historical schemes of the Southern California coast (e.g., Glassow et al. 2007; Waugh 1999; ICF 2021). The summary of the prehistoric occupation of the region here follows the general cultural history schema of those previous reports.

The prehistoric occupation of Southern California is divided chronologically into four temporal phases or horizons (Moratto 1984). Horizon I, or the Early Man Horizon, began at the first appearance of people in the region (approximately 12,000 years ago) and continued until approximately 5,000 BC. One of the oldest archaeological finds in the region is Daisy Cave, on San Miguel Island, where cultural remains have been radiocarbon dated to between 11,100 BC and 10,950 BC (Moratto 1984). These early occupants of Southern California are believed to have been nomadic large-game hunters whose tool assemblage included percussion-flaked scrapers and knives; large, well-made stemmed, fluted, or leaf-shaped projectile points (e.g., Lake Mojave, Silver Lake); crescentics; heavy core/cobble tools; hammerstones; bifacial cores; and choppers and scraper-planes. Warren (1968) and W. J. Wallace (1955) suggest that the absence of milling tools commonly used for seed preparation indicates that an orientation toward hunting continued throughout this phase.

Horizon II, also known as the Millingstone Horizon or Encinitas Tradition, began around 5,000 BC and continued until approximately 1,500 BC. The Millingstone Horizon is characterized by the widespread use of milling stones (manos and metates) and core tools, with few projectile points or bone or shell artifacts. This horizon represents a diversification of subsistence activities and a more sedentary settlement pattern. Archaeological evidence suggests that hunting became less critical and that a reliance on collecting shellfish and vegetal resources increased (Moratto 1984: 159). The inland occupants collected primarily hard seeds and hunted small mammals; projectile points were more common in inland assemblages.

A greater emphasis on seed gathering marked the general settlement/subsistence patterns of the Middle Holocene. Coastal and inland sites exhibit shallow midden accumulations, suggesting seasonal camping, and midden accumulation at desert locales dating to this period is generally rare. Based on the distribution of sites assigned to this period, aboriginal groups likely followed a modified, centrally based wandering pattern, with an inferred shift toward enhanced logistical settlement organization (Warren 1968). In this semisedentary pattern, larger groups occupied a base camp for a portion of the year, while smaller groups used satellite camps to exploit seasonally available floral resources such as grass seeds, berries, tubers, and nuts. King suggests that the coastal sites probably represent more permanent occupations than those found in the interior because coastal inhabitants were sustained by more reliable and abundant food resources (King 1967: 66-67).

Horizon III, the Intermediate Horizon or Campbell Tradition, began around 1,500 BC and continued until approximately AD 600–800. Horizon III is defined by a shift from the use of milling stones to increased use of mortar and pestle, possibly indicating a greater reliance on acorns as a food source. Projectile points become more abundant and, together with faunal remains, indicate increased use of both land and sea mammals (Moratto 1984: 159).

Horizon IV, the Late Horizon, which began around AD 600–800 and terminated with the arrival of Europeans in the early sixteenth century, is characterized by dense populations; diversified hunting and gathering subsistence strategies, including intensive fishing and hunting for sea mammals; extensive trade networks; use of the bow and arrow; and a general cultural elaboration (Moratto 1984: 159). All regional chronological sequences recognize the introduction of the bow and arrow at about AD 500 by the appearance of small arrow points and arrow-shaft straighteners. Diagnostic artifacts for the Late Horizon include small triangular projectile points, mortars and pestles, steatite ornaments and containers, perforated stones, circular shell fishhooks, numerous and varied bone tools, and bone and shell ornamentation. Elaborate mortuary customs, generous use of bitumen, and the development of extensive trade networks are also characteristic of this period. Pottery, ceramic pipes, cremation urns, rock paintings, and some European trade goods were added to the previous cultural assemblage during the latter half of the late prehistoric occupation of the Southern California coastal region (Meighan 1954).

2.2.2 Ethnographic Setting

Native American territorial occupation of the Los Angeles Basin and surrounding areas was traditionally assigned to the Gabrielino, also known as the Tongva, Chumash, and Tataviam Native American groups. The latter occupies the northwest and northern limits of the San Fernando Valley and other surrounding territories (Grant 1978; King and Blackburn 1978). For this study, a short description of Tataviam ethnography is provided.

The Tataviam are one of the least understood Native American groups in California. Their original territory has been estimated to lie within Los Angeles, Ventura, and Kern Counties (King and Blackburn 1978). Their language belongs to the Takic branch of the larger Uto-Aztecan linguistic family and, therefore, exhibits phylogenetic (based on natural evolution) relationships to other Takic languages of Southern California, such as those of the Gabrielino of the Los Angeles Basin and the Kitanemuk of the Antelope Valley. The name *Tataviam* means “people facing the sun.” Their territory is thought to include the upper reaches of the Santa Clara River drainage east of Piru Creek, extending north to the southwestern fringes of the Antelope Valley (Fortier 2009; King and Blackburn 1978). Their neighbors included the Kitanemuk and Vanyume to the north, Chumash communities to the west, Gabrielino territories to the south, and Serrano communities to the east and southeast (King and Blackburn 1978). At the time of the missionary conquest, in the late eighteenth century, Tataviam villages were numerous. Many of the thousand Tataviam in the Los Angeles region were eventually sent to Mission San Fernando. Of those with a known ethnicity baptized at the mission, 27 percent were Tataviam (Fortier 2009).

Some of the most established Tataviam villages during the historic period included Wa’atnga and Coaynga near present-day Piru; Kavwénga at the present-day Cahuenga; Tujunga at Rancho Tujunga; Chaguayanga and Tochonanga near Newhall; Suitcanga near Encino; and Mapipinga at Vazquez Rocks. Mission San Fernando itself was established in the village of Achoicominga. On the eve of colonial contact, circa 1770, evidence suggests that Tataviam economic strategies were like those of the Gabrielino and the other similar groups in the vicinity. The Tataviam collected yucca, acorns, sage seeds, cherry, juniper berries, and other plants within their territory. Men and women hunted rabbits, rats, deer, birds, and antelope.

2.2.3 Historic Setting

Spanish/Mexican Period

Spanish occupation of California began at San Diego in 1769 when Franciscan missionaries led by Father Junípero Serra and Spanish soldiers established a military fort and chapel on Presidio Hill, which became colonial California's first presidio and first mission. That same year, an expedition headed by Gaspar de Portolá traveled north from San Diego to explore Alta California for additional mission sites and search for Monterey Bay, which Spanish mariners had previously encountered. Portolá and his party would be the first people of European descent to travel through the project vicinity. Moving northward, the party reached the Santa Clara River near Castaic Junction on August 8. Recording the expedition in journals, Father Juan Crespi described the area as "a very suitable site for a mission, with much good land, many palisades, two very large arroyos of water, and five large [Native American] villages close together." The following day, Portolá's party followed the Santa Clara River west toward present-day Fillmore (Perkins 1957; Rawls and Bean 2011).

Mission San Gabriel was established in the Los Angeles Basin in 1771. Five years later, a party led by Father Francisco Garcés became the second group of Spanish explorers to travel through the Santa Clara River Valley, this time en route to the San Joaquin Valley. The Los Angeles pueblo was established as a civilian settlement on September 4, 1781. On March 31 of the following year, Father Serra founded Mission San Buenaventura, California's ninth mission and the last to be established under Serra's leadership. The coastal site was approximately 60 miles west-northwest of the Los Angeles pueblo. Serra's successor as "president" of the California missions, Father Fermín Lausén, established Mission San Fernando in the northern San Fernando Valley in 1797 (Kimbro et al. 2010; Perkins 1957; Rawls and Bean 2011).

Mission San Fernando leaders sought to colonize the Santa Clara River Valley. They intended to missionize the valley's numerous Native American villages and exploit its natural resources to supplement supplies from other regional missions bound for the military garrison at the Presidio of Santa Barbara. Successfully challenging attempts by civilian Francisco Avila to gain control of lands around the headwaters of the Santa Clara River, Mission San Fernando leaders established an *asistencia* (a smaller sub-mission) in the vicinity of Castaic Junction during the first years of the nineteenth century. The area became known as Rancho San Francisco. As at the missions, *asistencia* leaders compelled local Native Americans to learn and perform European forms of animal husbandry, construction, and agricultural production. Rancho San Francisco was fenced to control cattle herds, and a dam and irrigation canal were constructed on the eastern portion of the rancho (Perkins 1957).

Spanish colonial officials maintained an ultimately tenuous grip on Alta California as the mission system expanded. Although some missions flourished economically, threats from within and without increasingly undermined stability. Indigenous populations declined dramatically because of disease, overwork, and mission campaigns to end native ways of life. Instances of native resistance to Spanish authority multiplied across Alta California. Mariners with allegiances to competing colonial powers and trappers/explorers from the east and north increasingly challenged the authority of officials and priests, whose problems were of little interest to officials in Spain, which was embroiled in European conflicts and declining as a major power. Spain eventually lost control of its colonies in North America, and Mexico achieved independence and made California a territory in 1821 (Perkins 1957; Rawls and Bean 2011).

In the wake of Mexico's independence from Spain, years of political instability, and several failed attempts to secularize California's missions, Governor José Figueroa issued a proclamation in 1834, defining the terms of the secularization process that would be instituted over the next two years. Provisions for ensuring that Indians would receive mission lands, however, were of little or no practical benefit to the region's Native Americans. Mission lands were distributed mainly to officials and retired soldiers. Approximately 500 private land grants were made under Mexican rule. Governors Juan Batista Alvarado, Manuel Micheltorena, and Pío Pico made most of these grants after secularization (Rawls and Bean 2011).

In 1834, Lieutenant Antonio del Valle was given control of Mission San Fernando. Members of del Valle's family may have made private use of Rancho San Francisco lands as early as 1824. Del Valle had a map of the rancho produced in 1837, and in 1839, he successfully petitioned Governor Alvarado to grant him the 48,612-acre rancho, which gave him control of its former Mission San Fernando *asistencia*. Under del Valle, the rancho produced cattle and wheat. In 1841, after Don del Valle died, the land was divided among his children and his widow, who subsequently married Don José Salazar. In 1842, one of del Valle's sons, Ygnacio del Valle, established the 1,800-acre Rancho Camulos west of the project alignment (Perkins 1957; Triem and Stone 1996).

Predating the discovery of gold in the Sierra Nevada foothills, which inaugurated the California Gold Rush of 1848, Francisco López first discovered commercially viable quantities of gold in California in 1842, in an area east of the project alignment. While foraging wild onions in Placerita Canyon, east of Newhall, López noticed and gathered several gold nuggets. News of the discovery lured prospectors from Sonora, Mexico, and by the end of 1842, Abel Stearns had sent the first gold extracted from Placerita Canyon mines to the United States Mint in Philadelphia. Over the next several years, López's gold discovery would attract more miners to the upper Santa Clara River region (Kyle et al. 2002; Perkins 1957).

American Period

At the conclusion of the Mexican-American War in 1848, California was ceded to the United States and granted statehood in 1850. In theory, the 1848 Treaty of Guadalupe Hidalgo, which ended the Mexican-American War, protected the property rights of California's Hispanic or Californio population and their prior claims to land. In practice, however, the legal process for vetting land claims set in motion by the Land Commission, established in 1851, combined with the mounting debts of many rancho owners, allowed American and other newcomers to take possession of the abundant rancho lands that had been granted initially to Californios under Mexican rule (Perkins 1957; Rawls and Bean 2011; Guinn 1915).

After 1850, transportation developments like the Southern Pacific Railroad transformed the Santa Clara River Valley from an isolated backwater to a major Southern California travel corridor. In 1854, Fort Tejon was established in the highlands northwest of the project area. The fort functioned as a center of military and political power between Visalia and Los Angeles. Its soldiers accompanied travelers to Salt Lake City and also policed the region, which was marked by frequent conflicts among native groups, miners, and Euro-American settlers after 1850. During the 1860s, the fort became part of the vast landholdings of the former Superintendent of Indian Affairs for California, Edward F. Beale. In 1858, Butterfield Overland Mail began operations between Los Angeles and Kern County and established stage stations at Fort Tejon and elsewhere. The road between the Santa Clara River Valley and San Fernando Valley was known as the worst portion of the Butterfield route until Beale received a franchise to develop a toll road. In 1862, Beale constructed what became known as "Beale's Cut," a pass through the mountains that vastly improved travel (Kyle et al. 2002; Perkins 1957).

Surveys for a rail line between Los Angeles and the San Joaquin Valley and through the project vicinity were conducted as early as the 1850s. Southern Pacific engineers expected this line to be more difficult to build than the original transcontinental railroad through the Sierra Nevada. As developed, the Southern Pacific line required the construction of a 7,000-foot-long tunnel near Beale's Cut, approximately 9 miles southwest of the project area. In 1876, 1,500 Chinese immigrant laborers worked around the clock to complete the tunnel, the total cost of which surpassed $2 million. The railroad line between Los Angeles and the San Joaquin Valley was completed in 1877, and in 1886, the Southern Pacific began constructing a branch line from Soledad Canyon to Ventura. Stops on the line included Castaic, Del Valle, and Camulos. Helen Hunt Jackson's novel, *Ramona*; Southern Pacific promotional efforts; and cooperation from the del Valle family helped make Rancho Camulos one of the most frequented railroad tourist destinations in Southern California (Guinn 1915; Perkins 1957; Triem and Stone 1996). In addition to tourism, economic activity in the project vicinity included agriculture and mining. At one time, a mining camp was located at the west end of Soledad Canyon.

The town of Newhall took shape after the completion of the Southern Pacific line between the San Joaquin Valley and San Fernando Valley when H. M. Newhall—who had earlier acquired much of Rancho San Francisco—convinced residents to relocate the townsite approximately 3 miles south to another area along the Southern Pacific line. There, Newhall constructed the Southern Hotel, providing the best accommodations for any stop on the Southern Pacific line between Los Angeles and the San Joaquin Valley (Perkins 1958a, 1958b).

The most important developments in the project vicinity during the first two decades of the twentieth century involved transportation improvements to accommodate increased automobile travel. During the 1910s, the County of Los Angeles developed the Tejon-Castaic "Ridge Route" between the San Fernando Valley and San Joaquin Valley. Also, in 1910, the County of Los Angeles constructed the Newhall Tunnel to replace Beale's Cut. By the early 1920s, the tunnel and the Ridge Route facilitated automobile traffic through the area (Perkins 1958b; Blow 1920).

West of the project area, one of the worst disasters in California history was unleashed during the 1920s. William Mulholland, who engineered the Los Angeles Department of Water and Power's Los Angeles Aqueduct to deliver water from Owens Valley, thereby enabling Los Angeles's rapid urban growth, sought to develop a reservoir to supplement the water supply. In 1926, the department constructed a Mulholland-designed dam and reservoir at San Francisquito Canyon on geological foundations that proved catastrophically faulty. In 1928, the dam failed and released a torrent of water that ripped through the Santa Clara River Valley and killed more than 400 people on its path to the Ventura shoreline. The disaster ended Mulholland's career and focused future water planning on the Colorado River (Starr 1990).

By the late 1920s, increased traffic on the Golden State Highway (US 99) between the San Joaquin Valley and San Fernando Valley prompted the State Highway Commission to direct the Department of Public Works to begin a series of highway improvements. The first such improvement was the construction of a new highway segment between Castaic and Gorman. The Department of Public Works also eliminated Newhall Tunnel, which had become a severe bottleneck, and replaced it with an open cut that was between 130 and 185 feet deep. A new bridge was also constructed to replace the one washed out in 1928 by the dam failure at San Francisquito Canyon. The highway improvements eliminated numerous dangerous curves and the Newhall Tunnel bottleneck and shortened the route between the San Joaquin Valley and San Fernando Valley by 14 miles (California Highways and Public Works 1930; E. E. Wallace 1930).

Beginning in the 1920s, the small valley known as Val Verde, which is approximately 13 miles west of the project area, became an important site for the Los Angeles-area Black community. At that time, racial discrimination kept Black Angelinos from using public beaches and swimming pools and competing for most higher-wage jobs. In the mid-1920s, Black professionals, led by newspaper publisher Charlotta Bass and insurance businessman Norman O. Houston, organized a so-called "Black Palm Springs" at the Eureka Tract in Val Verde. There, Black professionals purchased land and built summer vacation homes, while many restaurants and inns began serving Black vacationers. In 1939, the County of Los Angeles donated land to develop Val Verde Park, including a clubhouse and swimming pool. The park became an important site of Black community gatherings. Until the civil rights movement secured access to previously segregated leisure and residential spaces, Val Verde provided a space for Black Angelinos to enjoy rural living and leisure without the threat of racial conflict (Worden 1996).

During the early 1960s, a new phase of transportation improvements occurred near the project area. The State of California adopted the segment of State Route 126 from the Los Angeles/Ventura county line east to the Golden State Freeway. A new interchange connecting State Route 126 to the Golden State Freeway (US 99) at Castaic Junction was constructed in 1964–1965. This effort was part of converting the Golden State Freeway between the San Joaquin Valley and San Fernando Valley into the eight-lane Interstate 5 (Telford 1963, 1964).

With plans to develop the town of Valencia and in hopes of luring visitors to the area, the Newhall Land and Farming Company partnered with Sea World to develop an amusement park on a 70-acre site. Construction on the park began in 1969. On May 29, 1971, Magic Mountain opened to the public, with attractions that included the Gold Rush roller coaster, El Bumpo bumper boat ride, Log Jammer flume ride, Sky Tower, and double-armed ferris wheel. Entertainers such as Barbara Streisand, Bill Cosby, Jimmy Durante, Phyllis Diller, Pat Boone, the Carpenters, Connie Stevens, Mac Davis, and Sonny & Cher performed at the park's 7 UP/Dixi Cola Showcase Theater. Millions of people have visited Magic Mountain since its initial development in the early 1970s (Worden 2012).

In the 1970s, numerous residential tracts were developed west of the project area. Valencia, Newhall, and Santa Clarita became commuter suburbs dominated by single-family housing. Suburban tract housing development in these communities, as well as others on the outskirts of the San Fernando Valley in western Los Angeles County and eastern Ventura County, depended on increased water supplies from the State Water Project, which was constructed to convey Northern California water from the Feather River to Southern California via the California Aqueduct. State Water Project water would be pumped up the Tehachapi Mountains, at which point the California Aqueduct would split into east and west branches. There, the state constructed a dam and created Castaic Lake. The first water conveyed through the California Aqueduct reached the new Castaic Lake reservoir in April 1972 (Schwarz 1991).

Haskell Canyon and the Project Area

Haskell Canyon was most likely an important place for Native American populations prior to Spanish contact. Still, little information was available about the canyon until the late 1800s when the canyon was homesteaded by the Haskell family for their cattle ranch. John C. Haskell, a pioneer of 1849, played a significant role in the history of California's cattle ranching. He and his family settled in Haskell Canyon and established the Haskell Ranch in 1890. Over time, he expanded the cattle ranch to cover more than 800 acres. Haskell Canyon was not only home to cattle ranching but also hog ranching. Bureau of Land Management (BLM) General Land Office (GLO) records indicate that land patents were granted to John Haskell in Sections 1 and 25 of Township 5N and Range 16W, which are both north and south edges of the proposed project area.

In 1919, James T. Agajanian, an Armenian immigrant, ventured into the garbage collection and hog-raising business in Saugus, California. The Agajanian family's ranch was situated in Haskell Canyon. The pig pens were located in and east of today's Haskell Canyon Wash near the junction of Haskell Canyon Road and Agajanian Lane, south of the proposed project area. However, this was just one of several hog farms that dotted the canyon. During the 1930s–1950s, these hog farms served as waste recycling centers. Food waste from restaurants and homes was trucked to these farms, allowed to ferment for a couple of years, and then fed to the hogs.

One hog farm was located at the entrance of the proposed project area and has been recorded as a historic-period archaeological site. Previous research indicated that this particular farm was likely to have been owned by Ben Kazarian, who, in January 1950, was granted a permit by Los Angeles County to establish a hog ranch on 320 acres in Haskell Canyon. In 1965, Kazarian applied for a renewal to the permit to operate the hog ranch, located "approximately three miles north of the junction of Bouquet Canyon and Haskell Canyon," which would place it in the vicinity of the project area (Valley News 1965, Messick and Hale 2005).

3.0 RECORDS SEARCH RESULTS AND ARCHIVAL RESEARCH

3.1 SCCIC RECORDS SEARCH

Michael Baker International staff conducted a records search of the California Historical Resource Information System at the SCCIC at California State University, Fullerton on December 6, 2023. The records search covered a half-mile radius around the project area and included archaeological and historical resources, locations and citations for previous cultural resources studies, and a review of the state OHP historic properties directory. The records search summary and map are included as **Appendix A** (Confidential appendices, bound separately).

3.1.1 Previous Studies

The records search results identified nine previous cultural resource studies completed within the records search limits, two of which intersect the proposed project area: LA-10205 *Archaeological Investigation for*

Meadow Peak Project, Vesting Tentative Tract Map 47760 with Final Report and LA-10210 *Cultural Resources Survey Report for Antelope-Pardee 500-kV Transmission Project* (Table 1).

TABLE 1. PREVIOUS STUDIES WITHIN A HALF MILE OF THE PROJECT AREA

Report No. (LA-00000)	Report Title	Author, Date
LA-01141	An Evaluation of the Potential Impacts to Cultural Resources Located on Portions of Tentative Parcel Map 14813 Bouquet Canyon, Los Angeles, Ca	Wlodarski, Robert J., 1982
LA-02447	Cultural Resources Archaeological Survey Seco Canyon Development IV Project Tentative Tracts: 47447, 37539 and 46908	Tartaglia, Louis J., 1991
LA-04104	Cultural Resource Evaluation of the LADWP Power Plant 1--olive Line 1 Transmission Line Maintenance Project Los Angeles County, California	Macko, Michael E., 1993
LA-08893	Cultural Resources Records Search and Site Visit Results for Royal Street Communications, LLC Candidate LA2256A (Carmenita), 11703 Carmenita Drive, Whittier, Los Angeles County, CA	Bonner, Wayne H., 2007
LA-09764	Supplemental Archaeological Assessment, Antelope to Pardee Segment 1 (Tehachapi Renewable Transmission Project), Variance 5, Los Angeles County, California	Gust, Sherri, 2008
LA-09920	Results of the Class III Cultural Resources Investigation for the Southern California Edison Tehachapi Renewable Transmission Project (TRTP) Segment 1, Angeles National Forest and Adjacent Lands, Los Angeles County, California, ARR No. 05-01-01079	Schmidt, James J., June A. Schmidt, and Gwen R. Romani, 2008
LA-10205	Archaeological Investigation for Meadow Peak Project, Vesting Tentative Tract Map 47760 with Final Report	Messick, Peter, 2003
LA-10210	Cultural Resources Survey Report for Antelope-Pardee 500-kV Transmission Project	Ahmet, Koral and Roger D. Mason, 2006
LA-10559	Archaeological Impact Analysis: Vesting Tentative Tract Map 43589, 7.5 Acres in Bouquet Canyon Area, Los Angeles County	Schmidt, James J., 2000

Source: South Central Coastal Information Center

3.1.2 Previously Recorded Resources

The SCCIC records search results indicated that six previously recorded cultural resources have been identified and recorded within the half-mile radius of the project area, one of which, CA-LAN-3132H, a historic-period site consisting of two structure pad foundations, intersects the project study area. All of the resources identified within the search area were historic-aged resources. No prehistoric-aged sites were identified.

TABLE 2. PREVIOUSLY RECORDED RESOURCES WITHIN A HALF MILE OF THE PROJECT AREA

Resource Number (P-19-#)	Trinomial (CA-LAN-#)	Description	Date , Recorder
002132	2132H	High voltage electric transmission lines, supported on four legs, rocket ship shaped carrying two 3-line circuits, constructed in 1917	1992 , Cole, McDowell, Shelton; 1993, M. Macko; 2004, Whitley; 2007, Koji Tsunoda, Jones and Stokes; 2010, J. M. Simon
003131	3131H	The site consists of a mid-20th century historic refuse dump, a refuse scatter, a corral, vegetation growing in linear patterns, a fence line, possible livestock pens, a concrete foundation, a wood platform, a house foundation, and a leveled trailer pad	2003, Peter Messick; 2013 , M. Vader and V. Ortiz
003132	3132H	Concrete floor/foundation, mound, and scattered refuse	2003, Peter Messick
004420	4420H	River cobble stacked dry rock wall	2013, M. Vader and V. Ortiz
186912		Approximately, seven-mile-long dirt road	2001, D. W. Vance; 2007 , Peebles, David S. and Joanna Huckabee
188492		Angeles National Forest maintained dirt road	

Source: South Central Coastal Information Center

3.2 NATIVE AMERICAN HERITAGE COMMISSION SACRED LANDS FILE SEARCH

The California NAHC maintains a confidential Sacred Lands File, which contains sites of traditional, cultural, or religious value to the Native American community. Michael Baker International contacted the NAHC on March 1, 2024, for a records search and list of Native American contacts for the project area. The NAHC indicated in a response dated March 18, 2024, that the search of the Sacred Lands File was completed for the project area with negative results. They also provided a contact list of tribes that are traditionally and culturally affiliated with the geographic area of the project area. Michael Baker International did not send out notification letters regarding the project. The City is conducting direct consultation with the tribes pursuant to Assembly Bill 52. Correspondence with the NAHC and the list of tribal contacts are provided in Appendix B.

3.3 HISTORICAL MAPS, AERIAL PHOTOGRAPHS, AND ARCHIVES RESEARCH

Michael Baker International consulted historic topographic maps, aerial imagery (NETR Online and UCSB), and BLM GLO records to gather additional information regarding past land use and disturbances and the potential presence of historic-period structures within the project area. Below is a list of sources reviewed:

- Built Environment Resource Directory (BERD)
- Historicaerials.com
- BLM GLO records
- Township 5 North Range 15 West, San Bernardino Meridian Plat map (BLM 1880a)
- Township 5 North Range 16 West, San Bernardino Meridian Plat map (BLM 1880b)
- Fernando, Calif. 1:62,500 topographic quadrangle (USGS 1900a)
- San Fernando, Calif. 1:250,000 topographic quadrangle (USGS 1900b)
- Santa Susana, Calif. 1:62,500 topographic quadrangle (USGS 1903)
- Saugus, Calif. 1:24,000 topographic quadrangle (USGS 1929)
- Saugus, Calif. 1:24,000 topographic quadrangle (USGS 1933)
- San Fernando, Calif. 1:62,500 topographic quadrangle (USGS 1940)
- Santa Susana, Calif. 1:62,500 topographic quadrangle (USGS 1941)
- Santa Susana, Calif. 1:62,500 topographic quadrangle (USGS 1943)
- San Fernando, Calif. 1:24,000 topographic quadrangle (USGS 1945)
- Newhall, Calif. 1:24,000 topographic quadrangle (USGS 1952)
- Mint Canyon, Calif. 1:24,000 topographic quadrangle (USGS 1960)
- Mint Canyon, Calif. 1:24,000 topographic quadrangle (USGS 1995a)
- Newhall, Calif. 1:24,000 topographic quadrangle (USGS 1995b)
- Mint Canyon, Calif. 1:24,000 topographic quadrangle (USGS 2012a)
- Newhall, Calif. 1:24,000 topographic quadrangle (USGS 2012b)
- Aerial photograph: Flight C-300, Frame 207 (UCSB 1928)
- Aerial photograph: Flight C-1001, Frame 280 (UCSB 1930)
- Aerial photograph: Flight AJX-1940, Frame 18 (UCSB 1940)
- Aerial photograph: Flight TG-2445, Frame 9 (UCSB 1968)
- Aerial photograph: Flight TG-7600, Frame 4 (UCSB 1976)

3.3.1 Results

The earliest USGS maps—Fernando 1900, San Fernando 1900, and Santa Susana 1903—show the project area as undeveloped. Haskell Canyon is to the west, and Deadman Canyon is to the east, both flanking the project area. Haskell Canyon has a series of dirt roads, while Deadman Canyon has a mapped roadway that connects to Dry Canyon to the southeast. For a wider area context, the project area is situated along the eastern edge of the Pine Mountain and Zaca Lake Forrest Reserve (USGS 1903).

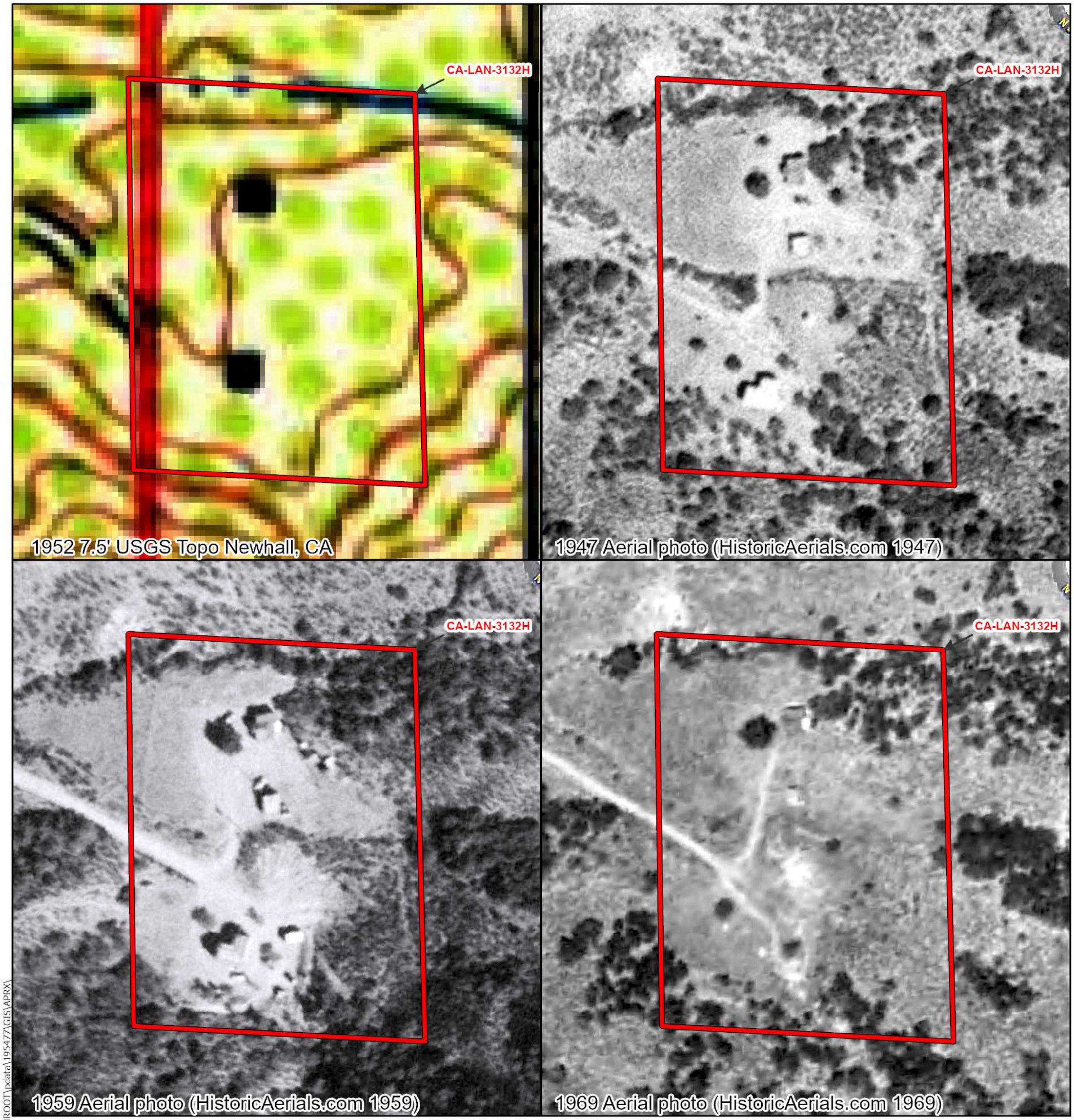
The Santa Clara River lies to the south with the Southern Pacific Railroad line adjacent to its natural course. The San Gabriel Mountains are south of the project's footprint, and the project area sits in between the north and south portions of the Angeles National Forest (USGS 1900a, 1900b, 1903).

The 1929 Saugus topographic map depicts a power transmission line running north to south through the whole sheet. Along the western margin, a segment of the line intersects the entrance to the project area. Bouquet Canyon Road is depicted as a dirt roadway to the southeast (USGS 1929, 1933).

In 1933, two structures were mapped outside the project area to the west and northwest, likely related to the area's cattle and hog ranching. The building directly west of the project area had a road leading to it; however, the area remained undeveloped (USGS 1933, 1940, 1941, 1943, 1945).

The 1952 Newhall map reveals two structures within the project area, most likely associated with ranching activity (USGS 1952). These two structures correspond to the site boundary for CA-LAN-3132H and the historical structure foundations recorded there. These structures are also visible in aerial imagery from 1940, in the approximate location of those shown on the 1952 Newhall topo map (UCSB 1940). The structures do not appear on the 1928 and 1930 aerials of the region (UCSB 1928, 1930). A third structure is visible on a 1947 aerial of the same area, and some additional smaller structures are visible in the area on the 1959 aerial (HistoricAerials.com n.d.). By 1969, the structures appear to have been demolished (HistoricAerials.com n.d.). **Figure 4** shows the progression of development and abandonment of the structures once present in the location of CA-LAN-3132H. Archival research has not yielded information on who these structures belonged to, but it is possible they were associated with Ben Kazarian, who ran the pig farm in Haskell Canyon. However, the only land patent available on the BLM GLO records for this particular location was granted to John G. Cox in 1915 (BLM 1915; **see Appendix D**).

A 1952 aerial shows several structures just north of the entrance to the current project area that were likely associated with pig ranching in the area and the site of CA-LAN-3131H. The 1959 aerial shows an expansion of the pig ranching facility. In the 1969 aerial, it appears that by that time, the pig ranch had been abandoned. In the same 1969 aerial, a mining operation is also visible along Blue Cloud Road within the project area. The remnants of that operation are visible in aerial imagery up to the present day.



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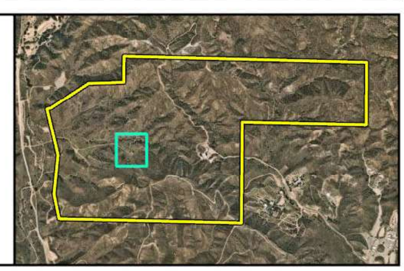
Legend

- Blue Cloud Project Area
- Previously Recorded Sites



BLUE CLOUD BIKE PARK PROJECT
CITY OF SANTA CLARITA, CA

Structures once located within the project area and associated with site CA-LAN-3132H.

Figure 4

Michael Baker INTERNATIONAL

0 50 100 Meters

Source: Esri, ArcGIS Online, USGS 7.5-Minute topographic quadrangle maps: *Newhall and Mint Canyon, California*

4.0 METHODS

4.1 SURVEY METHODOLOGY

Michael Baker International archaeologists Marcel Young, BA, and Epifanio Figueroa, BA, conducted an intensive pedestrian survey of the project area on February 12–14, 2024. During the pedestrian survey, the study area was walked in transects spaced approximately 10 meters apart where possible. Slopes greater than 30 degrees were visually assessed but were not surveyed. A slope analysis of the project area was conducted to identify those areas with slopes of 30 degrees or more and loaded into Esri's Field Maps app used by the archaeologists. They also revisited the previously recorded site of CA-LAN-3132H that intersects the proposed project area.

Visibility throughout the project area is very poor in most areas, except the existing trails, due to vegetation cover (**Figure 5**). Vegetation observed consists of non-native grass, dove weed, coastal live oak trees, coastal sage scrub brush, white sage, buckwheat, yucca, brittlebrush, Maltese star-thistle and seasonal wildflowers. The landform of the project area consists of rolling hills and their associated valleys where slopes range from gentle (2%-7%) up to severe (20%-45%). Along the mid-west area, there is a large, shallow, semi-flat valley that trends east to west upward at 5%; this is then flanked north and south by hills, with the north margin being at higher elevations. The survey area has a dirt road accessed from the west, which leads to Copper Hill Drive, a main paved road about 1 mile south. Another access point on the east side of the project's footprint is from a main roadway, Bouquet Canyon Road, and Blue Cloud Road, which remains a dirt accessway leading to a locked gate.

FIGURE 5. OVERVIEW OF THE SOUTHWESTERN PORTION OF THE SURVEY AREA SHOWING DENSE LOW-LYING VEGETATION.

The survey area has many inaccessible areas due to vegetative growth and severe slopes, many greater than 30 percent. The strategy of the survey utilized existing pathways and easily accessible ridgelines within the project to inspect the whole project area with photo documentation using the Solocator application on an iPhone. Esri's Field Maps and Google Earth were also consulted for navigation and deciding the best access routes for the differing sections of the survey. Several disturbances were noted throughout the project area. Most consistently evident about this landform is that it is highly used by the public, being within a natural space corridor. It has dirt bike trails, pedestrian walking trails, and dirt roads. Other prominent features are several dirt ramps upon finger ridges along many of the trails. There is a fragmented, moderately dispersed modern glass scatter along the mid-west area of the project area. The project area is relatively free of modern refuse beyond this glass scatter. Candy wrappers and modern aluminum cans were sparsely encountered, for example.

5.0 PEDESTRIAN SURVEY RESULTS

During the pedestrian survey, archaeologists Marcel Young and Epifanio Figueroa identified one newly recorded mid-twentieth-century mining site, given the temporary designation of BlueCloud-MBI-01H. They also revisited CA-LAN-3132H, a mid-twentieth-century site comprising two structure pad foundations. A set of updated DPR 523 series forms were completed for CA-LAN-3132H and a new set of forms were completed for temporary site number BlueCloud-MBI-01H; both are available in **Confidential Appendix C**. Below are descriptions of the sites identified and revisited.

CA-LAN-3132H

Peter Messick of Greenwood and Associates recorded CA-LAN-3132H in 2003 as consisting of two concrete foundation pads and associated domestic debris (Messick and Hale 2005). The pad measured 13 feet north-south by 15 feet and 8 inches east-west and was approximately 9 inches thick. Several bricks were identified on the surface around the concrete pad with maker's marks reading "McClintock." Another smaller concrete floor was noted 7 feet east of the larger concrete pad and measured 8 feet north-south by 5 feet east-west. Two rusted pipes (7/8 inches diameter) were sticking up 3 feet from the pad. A rusted drum barrel with bullet holes was identified 12 feet east of the smaller pad. A 32-inch square rusted metal shower stall floor was also identified west of the larger concrete pad. An earthen mound approximately 75 feet in diameter with half-buried fence posts around it was also identified 130 feet south of the two concrete pads. Other items identified included a refrigerator, oven, corrugated tin roofing, and a small metal trash can.

During the current survey, the only remnants of this historic site visible were the smaller of the two concrete pads with the rusted vertical pipes sticking up from it (**Figure 6**) and a single brick fragment similar to those described by Messick with the word "McClintock" stamped on the surface (**Figure 7**). A search for McClintock stamped bricks did not reveal any information on where the bricks may have been made. None of the other features identified in the previous site record were located again, possibly due to dense vegetation or possibly due to cleanup efforts along the existing bike trails.

FIGURE 6. SMALL ~5 X 8 METER CONCRETE PAD ASSOCIATED WITH CA-LAN-3132H.

FIGURE 7. BRICK FRAGMENT WITH "MCCLINTOCK" STAMPED ON THE SURFACE IN SITE CA-LAN-3132H.

BLUECLOUD-MBI-01H

The remnants of one mid-twentieth-century mining site visible in aerials since 1969 were identified during the survey. The site is in the eastern area of the project area along Blue Cloud Road. The mine consists of a terraced area and has several components (**Figure 8**), including a wash plant that stands ~70 feet high (**Figure 9**), a Trailmobile dry semi-trailer (**Figure 10**), a stone hopper with pulverizer, two rubble piles with associated abandoned equipment, a water tank situated for mining operations (**Figure 11**), a five-course brick retaining wall, a water standpipe with a meter, two concrete pads where structures or equipment may have been, an 1800s wooden carriage donned with a metal water tank, a tractor, a truck, and other refuse (**Figure 12**). Two utility poles were also identified, one cut and one next to the wash plant with breaker box panels. There are at least two quarry areas associated with mining operations, one in the panhandle area of the project and the other along the northern middle section.

The mining site was known as the Blue Cloud Chinchilla Dust Mine and was operated by the Blue Cloud Mineral Co., founded by Walter and Betty Harris as early as 1953. A mining claim was filed in 1966 by Walter and Betty Harris to the BLM for three mining claims in the current project area that intersects Township 5 North, Range 15 West, Section 31. These mining locations are identified on the claim as Blue Cloud West, Blue Cloud Center, and Blue Cloud East (BLM 1966; **see Appendix D**). The area granted was 116.72 acres. The mine's purpose was to retrieve volcanic tuff that was ground up and used as dry bath powder for pet chinchillas (SCVHistory.com n.d.). After processing at the Blue Cloud Mineral Co.'s mill on Bouquet Canyon Road, the chinchilla dust was packaged by Lixit Corp. in Napa, California (SCVHistory.com n.d.). The Harrises's son, Norman Harris, took over the operation and was the owner of the mining company until his death in 2013. Dr. Harris was a prominent figure in the Newhall area, was a founding/charter member of the Santa Clarita Valley Historical Society in 1975, and served as its president and on its board of directors for many years. The mine was closed in 2016 (SCVHistory.com 2013).

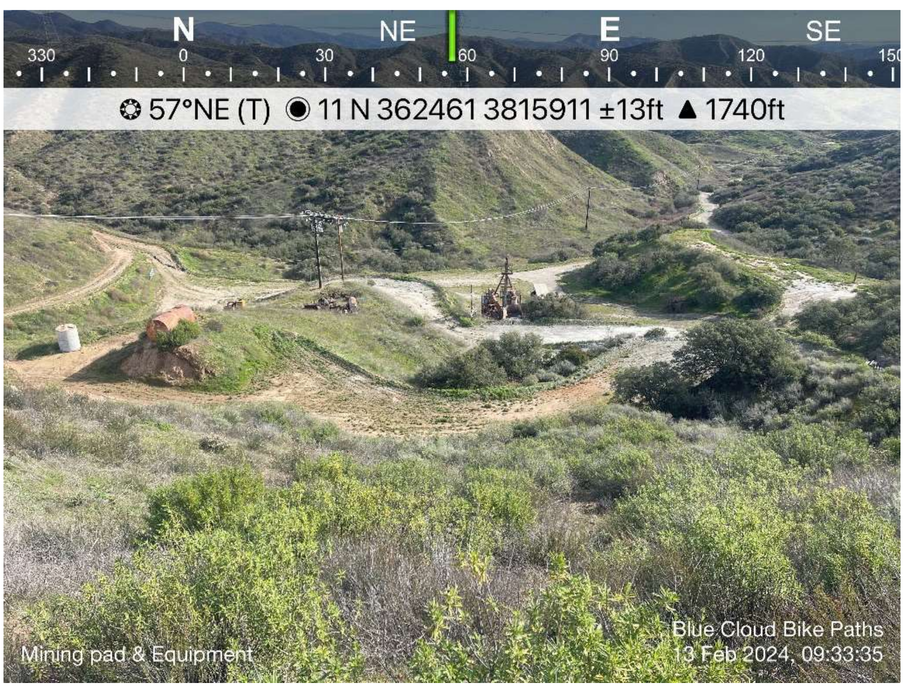


FIGURE 8. OVERVIEW OF BLUE CLOUD DUST MINE (BLUECLOUD-MBI-01H).

FIGURE 9. MINING WASH PLANT ASSOCIATED WITH BLUE CLOUD DUST MINE SITE.

FIGURE 10. TRAILMOBILE TRAILER ASSOCIATED WITH BLUE CLOUD DUST MINE SITE.

FIGURE 11. WATER STORAGE TANK.

FIGURE 12. BLUE CLOUD MINE REFUSE AND EQUIPMENT INCLUDING WATER TRAILER, TRACTOR, AND TRUCK.

5.1 ARCHAEOLOGICAL SENSITIVITY ANALYSIS

Archaeological sensitivity zones are qualitative and based on the general presence and/or absence of Native American occupation sites, isolated prehistoric Native American artifacts and burials, and historic archival and archaeological materials exposed during various construction projects. The project area is 3 miles north of the Santa Clara River, which would have provided an important resource procurement locale for prehistoric inhabitants of the area. The project area is composed of Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded (CmF2); Saugus loam, 30 to 50 percent slopes, eroded (ScF2); Sorrento loam, 2 to 5 percent slopes (SsB); and Yolo loam, 2 to 9 percent slopes (YoC). The majority of the project area is steeply sloped; generally, slopes of greater than 30 degrees have low potential for buried archaeological sites (MnDOT 2002).

Topographic maps, aerial photographs, and archival records have indicated that historic-period homesteads and mining operations were established within or near the project area during the early to mid-twentieth century. One historic-period archaeological site (CA-LAN-3132H), comprising two structure pads, and one historic-period mining site (temporary site number: BlueCloud-MBI-01H) have been identified within the project area, but they do not appear to have the potential to be significant resources.

Based on the archival research, soils, available resources, and pedestrian survey results, the archaeological sensitivity for potentially unknown prehistoric archaeological sites within the area of potential effect is low, and the potential for significant buried historic period resources is also considered low.

6.0 EVALUATION RECOMMENDATIONS

The cultural resources located within the study area include one previously recorded historic period domestic site (CA-LAN-3132H) comprising concrete structure pads and domestic debris and one newly recorded historic mining site (BlueCloud-MBI-01H) consisting of the remnants of the Blue Cloud Dust Mine that operated from around 1952 until 2016. Remnants of the mining site include a wash plant, water tanks, trailers, machinery, vehicles, and concrete structure pads. Potential project effects on the cultural resources and their eligibility recommendations are discussed below.

CA-LAN-3132H

Site CA-LAN-3132H was previously recorded as consisting of two concrete foundations and associated domestic debris and building materials. During the current survey, just one of the concrete pads and one brick was visible. The site is evaluated against the criteria for listing in the California Register below.

Criterion 1 While the structures once located within the boundaries of CA-LAN-3132H and visible on historic aerials of the area may have played a role in the development of cattle or pig ranching in the early twentieth century in the Santa Clarita region, the foundation remnants cannot be positively associated with the Haskell, Agajanian, or Kazarian families discussed in Section Historic Setting and who were associated with ranching in the area. Research has not revealed any significant events in national, state, regional, or local history associated with the site. The site is recommended as not eligible for listing under Criterion A.

Criterion 2: Archival research indicates that the site location was part of a homestead land grant issued to John G. Cox in 1915; however, the features identified as part of the site post-date it and cannot be directly related to him. No additional records of land ownership were identified during archival research, and the site cannot be directly tied to a specific individual, family, or group. Moreover, the background research failed to identify any persons who are particularly notable or important to national, state, or local history who are associated with the homesteads in the general vicinity. Therefore, the site is recommended as ineligible for listing under Criterion B.

Criterion 3: The site and its currently identified component features consist of a concrete pad and a single brick fragment which are common and ubiquitous domestic remnants. The site does not embody the distinctive characteristics of a type, period, region, or method of construction, nor does it represent the work of a master or possess high artistic values. Thus, the resource is recommended as ineligible under Criterion C.

Criterion 4: The information and documentation presented in this report and the associated DPR 523 series form exhaust the site's data potential. The concrete pad and brick appear to be limited to the surface with no additional associated artifacts, and the available archival information does not indicate that the site possesses any further potential to yield information important to the community, state, or nation's prehistory or history. Therefore, the resource is recommended as ineligible under Criterion D.

Additionally, much of the material originally recorded at the site in 2003 is no longer visible or present and thus lacks integrity. CA-LAN-3231H is recommended ineligible for listing in the California Register and is not a historical resource as defined by CEQA Section 15064.5(a) or a unique archaeological resource as defined by PRC Section 21083.2(g).

BLUECLOUD-MBI-01H

Site BlueCloud-MBI-01H was recorded during the current study as the ruins of a mining site once owned and operated by the Harris family. Archival research identified that Walter and Betty Harris applied for a mining claim for the area in 1966 (BLM 1966). The site is evaluated against the criteria for listing in the California Register below.

Criterion A: While the Blue Cloud Dust Mine and the remaining machinery and mining locations may have contributed to the local economy in the Santa Clarita region in the second half of the twentieth century, research has not revealed any significant events associated with the mine that are important to national, state, regional, or local history. Therefore, the site is recommended as not eligible for listing under Criterion A.

Criterion B: Archival research indicates that the site was owned and operated by Norman Harris, son of Walter and Betty Harris. While Dr. Harris was a valued member of the Newhall and Santa Clarita community, being a founding member of the Santa Clarita Valley Historical Society, the Blue Cloud Dust Mine is not considered to be what Dr. Harris is most known for, nor is his association with the site particularly notable or important to national, state, or local history. Therefore, the site is recommended as ineligible for listing under Criterion B.

Criterion C: The site and its currently identified component features consist of a wash plant that stands, a Trailmobile dry semi-trailer, two rubble piles with associated abandoned equipment, a water tank situated for mining operations, a five-course brick retaining wall, a water standpipe with a meter, two concrete pads where structures or equipment may have been, an 1800s wooden carriage donned with a metal water tank, a tractor, a truck, and other refuse. The site does not embody the distinctive characteristics of a type, period, region, or method of construction, nor does it represent the work of a master or possess high artistic values. Thus, the resource is recommended as ineligible under Criterion C.

Criterion D: The information and documentation presented in this report and the associated DPR 523 series form exhaust the site's data potential. The visible ruins of the Blue Cloud Dust Mine site and the available archival information about it do not indicate that the site possesses any further potential to yield information important to the community, state, or nation's prehistory or history. Therefore, the resource is recommended as ineligible under Criterion D.

The site is thus recommended ineligible for listing in the California Register and is not a historical resource as defined by CEQA Section 15064.5(a) or a unique archaeological resource as defined by PRC Section 21083.2(g).

In summary, both sites identified during this investigation within the study area do not meet the criteria for listing in the California Register, and thus are not considered historical resources.

7.0 CONCLUSIONS AND MANAGEMENT RECOMMENDATIONS

The SCCIC records search, literature review, archival research, and archaeological field survey identified two historic-period archaeological sites within the project area: CA-LAN-3132H and BlueCloud-MBI-01H. Both sites have been evaluated and are recommended ineligible for inclusion in the California Register. No historical resources were identified within the project area. Buried site sensitivity is considered low based on the archival research, soils, available resources, and pedestrian survey results. The proposed project is thus considered to have a less than significant impact with mitigation incorporated under CEQA. Impacts to unanticipated cultural resources may be avoided or reduced to a less than-significant level by implementing the following mitigation measures:

CUL-1: Cultural Resources Monitoring

Archaeological monitoring shall occur in the project area during all soil-disturbing and grubbing/grading/excavation/trenching activities, which could impact archaeological resources. The monitor will observe construction activities to determine if cultural resources are present below the surface. The Principal Investigator (PI) will submit a request to the City during construction, requesting a modification to the monitoring program when field conditions occur that could reduce or increase the potential for resources to be present. Such field conditions may include modern disturbance post-dating the previous grading/trenching activities, presence of fossil formations, or when native soils are encountered. Ground-disturbing activities include, but are not limited to, geotechnical boring, trenching, grading, excavating, and the demolition of building foundations. Monitoring shall be conducted by an archaeological monitor who is working under the guidance of a qualified archaeologist meeting the Secretary of the Interior’s Professional Qualification Standards for archaeology (48 Federal Register 44738). The archaeological monitor shall observe ground-disturbing activities in all areas with the potential to contain significant cultural deposits. The archaeological monitor shall maintain and submit monitoring logs at the conclusion of monitoring. If discoveries are made during ground-disturbing activities, additional work may be required in accordance with the terms specified in the cultural resources monitoring and discovery plan.

At the completion of grading, excavation, and ground-disturbing activities on the site, a monitoring report shall be submitted to the City that documents monitoring activities conducted by the project archaeologist within 60 days of completion of monitoring. This report shall document the daily archaeological monitoring results; describe how each mitigation measure was fulfilled; document the type of cultural resources recovered and the disposition of such resources; and, in a confidential appendix, include the daily/weekly monitoring notes from the qualified archaeologist. Final monitoring reports will be submitted to the City and the South Central Coastal Information Center. If a federal agency (e.g., the US Army Corps of Engineers) is involved in the project due to a federal nexus, monitoring reports may also be shared with that agency. Any unanticipated archaeological finds and subsequent evaluation or data recovery efforts will be documented in the report.

CUL-2: Evaluation of Unanticipated Finds; Phase II Testing

In the event an archaeological resource is unearthed during excavation, all excavations shall be halted within 50 feet of the find. Work shall stop immediately, and the discovery shall be evaluated by a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (48 Federal Register 44738), pursuant to the procedures set forth at CEQA Guidelines Section 15064.5 and 36 Code of Federal Regulations Part 60.4. Depending on the nature of the find, the determination of significance may require additional excavation, potentially including the preparation and execution of a Phase II archaeological testing plan. As the lead agency, the City shall make a determination of significance on the basis of the recommendations of the qualified archaeologist.

If the resource is determined not to be significant, then resource-specific work shall be completed, and construction may proceed. If the resource is determined to be significant and avoidance is not feasible, then a resource-specific archaeological resources treatment plan shall be prepared and executed in accordance with Mitigation Measure CUL-3 prior to recommencing ground-disturbing activities that may impact the resource.

CUL-3: Treatment of Significant Resources

Avoidance and preservation-in-place are the preferred treatment for historical resources, but avoidance is not always feasible. In the event that a historical resource is discovered and disturbance to such a resource cannot be avoided, one of the following treatments shall be implemented: avoidance, site capping, creation of conservation easements, or archaeological data recovery.

If avoidance, site capping, or creation of a conservation easement is determined infeasible, then a Phase III data recovery excavation will be required, pursuant to CEQA Guidelines Section 15064.5 and Section 106 36 Code of Federal Regulations 800.13, to document the resource's scientifically consequential information. The Phase III data recovery plan shall be prepared in consultation with the consulting tribe(s) if the discovery is associated with a precontact or ethnohistoric context. The Phase III study shall consist of the recovery and analysis of a statistically significant sample of the site through archaeological excavation, radiocarbon dating of organic materials or other kinds of dating, cataloging, specialist analysis, and report writing designed to document the resource in perpetuity.

During the course of construction, all discovered resources shall be temporarily curated in a secure location on-site or at the offices of the qualified archaeologist. The removal of any artifacts from the project area for cataloging and analysis during evaluation and analysis will need to be thoroughly inventoried with tribal monitor oversight of the process if the discovery is associated with a precontact or ethnohistoric context. The landowner shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains, as part of the required mitigation for impacts to cultural resources. The applicant shall relinquish the artifacts through one or more of the following methods and provide the City with evidence of final disposition of the cultural material collection:

- Accommodate the process for on-site reburial of the discovered items with the consulting tribe(s). This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed.
- A curation agreement with an appropriate qualified repository in Los Angeles County that meets federal standards per 36 Code of Federal Regulations Part 79, and therefore will be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility in Los Angeles County, to be accompanied by payment of the fees necessary for permanent curation.
- If more than one Native American tribe is involved with the project and the tribes cannot come to a consensus as to the disposition of cultural materials, they shall be curated at an appropriate qualified repository determined by the City.

CUL-4: Treatment of Unanticipated Finds of Human Remains

If human skeletal remains are found during earth-moving activities, work shall be suspended and the Los Angeles County Coroner's Office shall be notified. Standard guidelines set by California law provide for the treatment of skeletal material of Native American origin (California Public Resources Code, Sections 5097.98 et seq.; Health and Safety Code, Section 7050.5). If the remains are found to be archaeological, then after the coroner releases the site, the qualified professional archaeologist, in consultation with the most likely descendant, shall prepare an archaeological treatment plan in accordance with Mitigation Measure CUL-3 that also incorporates the guidance in "A Professional Guide for the Preservation and Protection of Native American Remains and Associated Grave Goods," published by the California Native American Heritage Commission.

8.0 PROFESSIONAL QUALIFICATIONS

This report was prepared by Michael Baker International Archaeologist James Daniels. Archaeologists Marcel Young and Epifanio Figueroa conducted the field survey and site recordation.

James Daniels, MA, RPA, is a senior archaeologist with cultural resource management experience in California, Nevada, and North Carolina. His experience includes archaeological surveys, evaluations of historic and prehistoric sites for listing in the California and National Registers, site mitigation data recoveries, mitigation monitoring, and preparation of archaeological resource management reports and cultural resources technical reports. As senior archaeologist, he supports projects needing compliance with CEQA, National Environmental Policy Act, National Historic Preservation Act, Section 106, Native American Graves Protection and Repatriation Act, Assembly Bill 52, US Army Corps of Engineers 404 permits, and local cultural resource regulations. He assists with environmental impact statements/reports and alternative mitigation measures for clients, including interpretive signage, informative website design, brochures, and ethnographic studies. He also assists in Native American consultation and coordination of Native American monitoring. James provides advanced technical services for clients, including geophysical surveys with ground-penetrating radar, obsidian and ceramic sourcing using portable X-ray fluorescence, photogrammetry, and GIS predictive modeling and data collection using Esri Field Maps. James meets the Secretary of the Interior's Professional Qualification Standards for archaeology and historic preservation.

Marcel Young, BA, has worked in various capacities in cultural resource management since 2013. He is experienced in surveying and conducting recording and evaluations of historic and prehistoric archaeological sites in California. Marcel is versed in conducting fieldwork within frameworks of Section 106 of the National Historic Preservation Act, CEQA, and the National Environmental Policy Act. He has participated in projects in several phases of archaeology: Phase I pedestrian, Extended Phase I testing, shovel test surveys, buried site testing, Phase III data recovery, and monitoring.

Epifanio Figueroa, BA, has worked in various capacities in cultural resource management since 2001. He has participated in projects in several phases of archaeology: Phase I pedestrian and shovel test surveys, Phase II buried site testing, Phase III data recovery, and Phase IV monitoring. He completes site identification and recordation, digital survey databases using Survey123, artifact cataloguing, geophysical data, figure development, stratigraphy mapping, and report writing pursuant to Section 106 of the National Historic Preservation Act, National Environmental Policy Act, and California Environmental Quality Act.

9.0 REFERENCES

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APPENDIX A

Confidential (Bound Separately)

Records Search Summary and Map

APPENDIX B

Native American Heritage Commission correspondence

Michael Baker
INTERNATIONAL

Michael Baker
INTERNATIONAL

We Make a Difference

March 1, 2024

Laura Miranda
California Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
nahc@nahc.ca.gov

Re: Cultural Resources Inventory for the Blue Cloud Bike Park Project, Santa Clarita, California

Dear Chairperson Miranda,

Michael Baker International is conducting a cultural resources inventory for the proposed Blue Cloud Bike Park Project in Santa Clarita, CA. The cultural resources inventory will be conducted in compliance with the California Environmental Quality Act. The proposed project includes the construction of a mountain bike park in the northern portion of the City that would include approximately 15 miles of four-to six-foot-wide trails. These trails would include design elements such as switchbacks, doubles, step-ups, flat cornering, boardwalks, rock gardens/obstacles, lumber elements, and creative ditches and water bars. The project would also include a dirt jump course with wood ramps and two asphalt pump tracks; bike repair stations and bike racks; 104 parking spaces using current grade on the Haskell Canyon Open Space side of the project site and 42 parking spaces on the Blue Cloud Open Space side of the project site; two concrete vault toilets or portable restrooms; dirt road improvements and gates; a shade structure; two 10,000 gallon water tanks; and other passive recreation park improvements such as benches, picnic tables, trash cans, and tree installations.

Michael Baker International conducted a records search with the South-Central Coastal Information Center and did not identify any previously recorded precontact archaeological resources within the project area or a half-mile radius of the APE. I am writing to request a search of the Sacred Lands File and to inquire if you have registered any cultural resources, traditional cultural properties, or areas of heritage sensitivity within this proposed project area.

We would also like to request a list of Native American tribes that may have knowledge of cultural resources in the project area or who may wish to be notified of the investigation. Please submit your response to me via e-mail at james.daniels@mbakerintl.com.

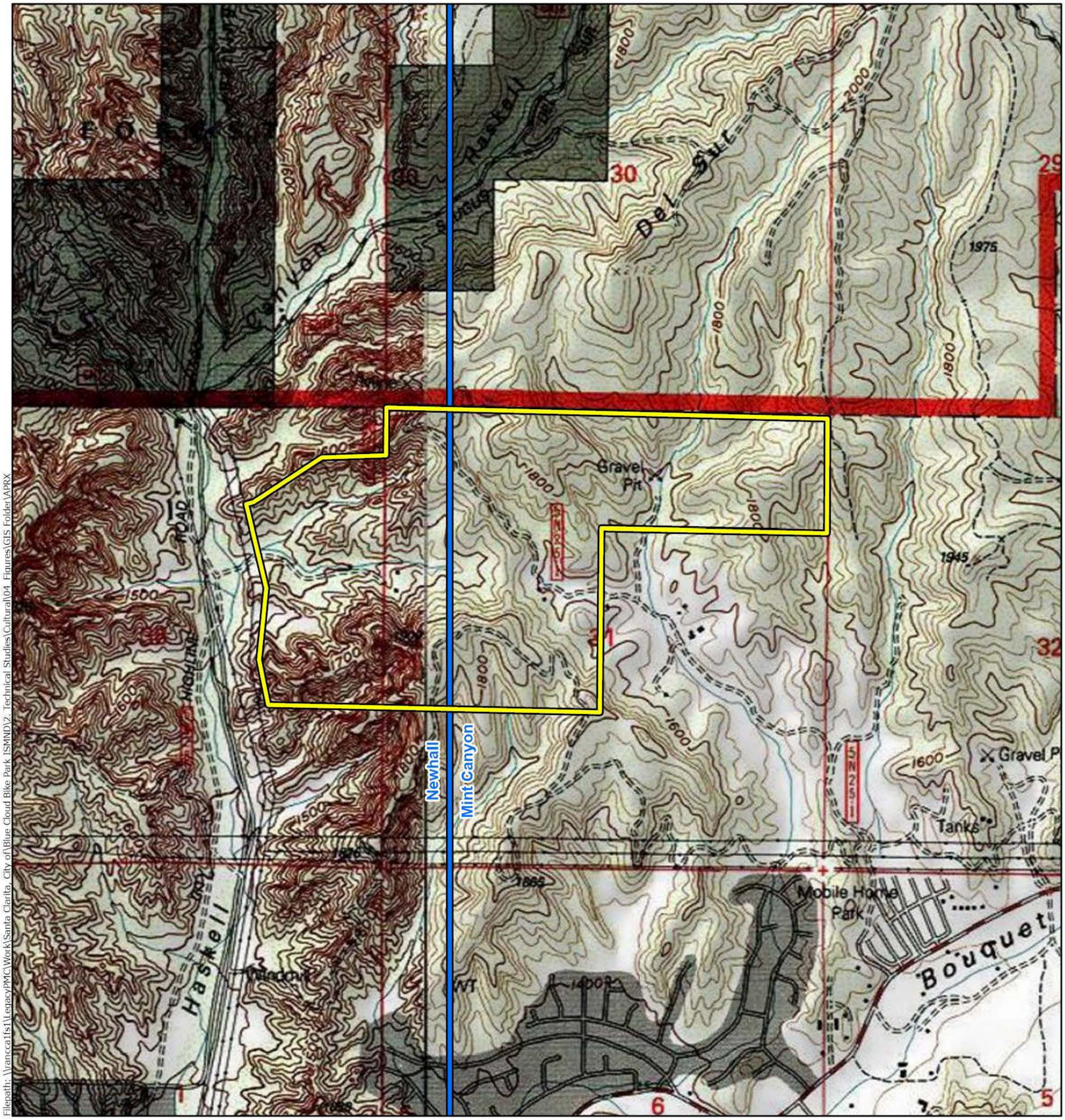
Sincerely,

James T. Daniels, Jr.

James T. Daniels, Jr. MA, RPA
Senior Archaeologist
james.daniels@mbakerintl.com

Your Requested Information:
County – Los Angeles
USGS Quad – Newhall and Mint Canyon
Township and Range – T05N R15W Sec. 31 and T05N R16W Sec. 36

Attachments: 1. 1:24,000 Scale Location Map of Project Area
2. Sacred Lands File & Native American Contacts List Request



Filepath: \\wancca1fs1\LegacyPMC\Work\Santa Clarita, City of\Blue Cloud Bike Park (SMND)\2. Technical Studies\Cultural\04_Figures\GIS Folder\APRX

NEWHALL AND MINT CANYON USGS 7.5-MINUTE TOPO QUADS
T 05 N R 15 W, SECTION 31 AND T 05 N R 16 W SECTION 36

Legend

- Blue Cloud Bike Park Project Area
- USGS 7.5' Quad

Michael Baker INTERNATIONAL

0 0.25 0.5 Miles

BLUE CLOUD BIKE PARK
SANTA CLARITA, CA

Record Search Map

Source: Esri, ArcGIS Online, Tustin USGS 7.5-Minute topographic quadrangle maps: *Santa Clarita, California*

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

Project: Blue Cloud Bike Park Project

County: Los Angeles County

USGS Quadrangle Name: Newhall and Mint Canyon

Township: 5 N **Range:** 16W **Section(s):** 31
5N 15 W 36

Company/Firm/Agency: Michael Baker International

Street Address: 5050 Avenida Encinas Suite 260

City: Carlsbad, CA **Zip:** 92008

Phone: (760) 603-6251

Fax:

Email: james.daniels@mbakerintl.com

Project Description:

The proposed project includes the construction of a mountain bike park in the northern portion of the City that would include approximately 15 miles of four-to six-foot-wide trails. These trails would include design elements such as switchbacks, doubles, step-ups, flat cornering, boardwalks, rock gardens/obstacles, lumber elements, and creative ditches and water bars. The project would also include a dirt jump course with wood ramps and two asphalt pump tracks; bike repair stations and bike racks; 104 parking spaces using current grade on the Haskell Canyon Open Space side of the project site and 42 parking spaces on the Blue Cloud Open Space side of the project site; two concrete vault toilets or portable restrooms; dirt road improvements and gates; a shade structure; two 10,000 gallon water tanks; and other passive recreation park improvements such as benches, picnic tables, trash cans, and tree installations.

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

March 18, 2024

Jaems T. Daniels
Michael Baker International

Via Email to: James.Daniels@mbakerintl.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Blue Cloud Bike Park Project, Los Angeles County

To Whom It May Concern:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento, California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

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 consultation list remains current.

If you have any questions, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Los Angeles County
3/18/2024

Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Barbareño/Ventureño Band of Mission Indians	N	Cultural Resource Committee,	P.O. Box 364 Ojai, CA, 93024	(805) 746-6685		CR@bvbmi.com	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	6/19/2023
Chumash Council of Bakersfield	N	Julio Quair, Chairperson	729 Texas Street Bakersfield, CA, 93307	(661) 322-0121		chumashtribe@sbcglobal.net	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	
Coastal Band of the Chumash Nation	N	Gabe Frausto, Chairman	P.O. Box 40653 Santa Barbara, CA, 93140	(805) 568-8063		fraustogabriel28@gmail.com	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	8/28/2023
Fernandeno Tataviam Band of Mission Indians	N	Sarah Brunzell, CRM Manager	1019 Second Street San Fernando, CA, 91340	(818) 837-0794		CRM@tataviam-nsn.us	Tataviam	Kern,Los Angeles,Ventura	5/25/2023
Gabrieleno Band of Mission Indians - Kizh Nation	N	Christina Swindall Martinez, Secretary	P.O. Box 393 Covina, CA, 91723	(844) 390-0787		admin@gabrielenoindians.org	Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	8/18/2023
Gabrieleno Band of Mission Indians - Kizh Nation	N	Andrew Salas, Chairperson	P.O. Box 393 Covina, CA, 91723	(844) 390-0787		admin@gabrielenoindians.org	Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	8/18/2023
Gabrieleno/Tongva San Gabriel Band of Mission Indians	N	Anthony Morales, Chairperson	P.O. Box 693 San Gabriel, CA, 91778	(626) 483-3564	(626) 286-1262	GTTribalcouncil@aol.com	Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	12/4/2023
Gabrielino /Tongva Nation	N	Sandonne Goad, Chairperson	106 1/2 Judge John Aiso St., #231 Los Angeles, CA, 90012	(951) 807-0479		sgoad@gabrielino-tongva.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/28/2023
Gabrielino Tongva Indians of California Tribal Council	N	Christina Conley, Cultural Resource Administrator	P.O. Box 941078 Simi Valley, CA, 93094	(626) 407-8761		christina.marsden@alumni.usc.edu	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/16/2023
Gabrielino Tongva Indians of California Tribal Council	N	Robert Dorame, Chairperson	P.O. Box 490 Bellflower, CA, 90707	(562) 761-6417	(562) 761-6417	gtongva@gmail.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/16/2023
Gabrielino-Tongva Tribe	N	Charles Alvarez, Chairperson	23454 Vanowen Street West Hills, CA, 91307	(310) 403-6048		Chavez1956metro@gmail.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	5/30/2023
Gabrielino-Tongva Tribe	N	Sam Dunlap, Cultural Resource Director	P.O. Box 3919 Seal Beach, CA, 90740	(909) 262-9351		tongvatcr@gmail.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	5/30/2023
Morongo Band of Mission Indians	F	Ann Brierty, THPO	12700 Pumarra Road Banning, CA, 92220	(951) 755-5259	(951) 572-6004	abrierty@morongo-nsn.gov	Cahuilla Serrano	Imperial,Kern,Los Angeles,Riverside,San Bernardino,San Diego	

Morongo Band of Mission Indians	F	Robert Martin, Chairperson	12700 Pumarra Road Banning, CA, 92220	(951) 755-5110	(951) 755-5177	abrierty@morongo-nsn.gov	Cahuilla Serrano	Imperial,Kern,Los Angeles,Riverside,San Bernardino,San Diego	
Northern Chumash Tribal Council	N	Violet Walker, Chairperson	P.O. Box 6533 Los Osos, CA, 93412	(760) 549-3532		violetsagewalker@gmail.com	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	6/5/2023
San Fernando Band of Mission Indians	N	Donna Yocum, Chairperson	P.O. Box 221838 Newhall, CA, 91322	(503) 539-0933	(503) 574-3308	dyocum@sfbmi.org	Kitanemuk Vanyume Tataviam	Kern,Los Angeles,San Bernardino,Ventura	5/8/2023
San Manuel Band of Mission Indians	F	Alexandra McCleary, Senior Manager of Cultural Resources Management	26569 Community Center Drive Highland, CA, 92346	(909) 633-0054		alexandra.mccleary@sanmanuel-nsn.gov	Serrano	Kern,Los Angeles,Riverside,San Bernardino	1/16/2024
Santa Rosa Band of Cahuilla Indians	F	Lovina Redner, Tribal Chair	P.O. Box 391820 Anza, CA, 92539	(951) 659-2700	(951) 659-2228	lsaul@santarosa-nsn.gov	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	
Santa Ynez Band of Chumash Indians	F	Wendy Teeter, Cultural Resources Archaeologist	100 Via Juana Road Santa Ynez, CA, 93460	(805) 325-8630		wteeter@chumash.gov	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	7/6/2023
Santa Ynez Band of Chumash Indians	F	Kelsie Mendoza, Elders' Council Administrative Assistant	100 Via Juana Road Santa Ynez, CA, 93460	(805) 325-5537		cmendoza@chumash.gov	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	2/27/2024
Santa Ynez Band of Chumash Indians	F	Nakia Zavalla, Tribal Historic Preservation Officer	100 Via Juana Road Santa Ynez, CA, 93460			nzavalla@chumash.gov	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	7/6/2023
Santa Ynez Band of Chumash Indians	F	Sam Cohen, Government & Legal Affairs Director	100 Via Juana Road Santa Ynez, CA, 93460			scohen@chumash.gov	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	7/6/2023
Serrano Nation of Mission Indians	N	Mark Cochrane, Co-Chairperson	P. O. Box 343 Patton, CA, 92369	(909) 578-2598		serranonation1@gmail.com	Serrano	Kern,Los Angeles,Riverside,San Bernardino	10/10/2023
Serrano Nation of Mission Indians	N	Wayne Walker, Co-Chairperson	P. O. Box 343 Patton, CA, 92369	(253) 370-0167		serranonation1@gmail.com	Serrano	Kern,Los Angeles,Riverside,San Bernardino	10/10/2023
Soboba Band of Luiseno Indians	F	Joseph Ontiveros, Tribal Historic Preservation Officer	P.O. Box 487 San Jacinto, CA, 92581	(951) 663-5279	(951) 654-4198	jontiveros@soboba-nsn.gov	Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	7/14/2023
Soboba Band of Luiseno Indians	F	Jessica Valdez, Cultural Resource Specialist	P.O. Box 487 San Jacinto, CA, 92581	(951) 663-6261	(951) 654-4198	jvaldez@soboba-nsn.gov	Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	7/14/2023

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 Resources Code and section 5097.98 of the Pu Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Blue Cloud Bike Park Project, Los Angeles Cou

Record: PROJ-2024-001551
Report Type: AB52 GIS
Counties: Los Angeles
NAHC Group: All

Michael Baker
INTERNATIONAL

APPENDIX C

Confidential (Bound Separately)

Department of Parks and Recreation
523 Forms

APPENDIX D

BLM GLO Records

Los Angeles 012059 and 017168.

4—1003-R.

The United States of America,

To all to whom these presents shall come, Greeting:

WHEREAS, a Certificate of the Register of the Land Office at Los Angeles, California, has been deposited in the General Land Office, whereby it appears that, pursuant to the Act of Congress of May 20, 1862, "To Secure Homesteads to Actual Settlers on the Public Domain," and the acts supplemental thereto, the claim of

John G. Cox

has been established and duly consummated, in conformity to law, for the southeast quarter of the northeast quarter and the Lot one of Section six in Township four north and the east half of the southeast quarter of the southeast quarter, the south half of the southwest quarter of the southeast quarter of the southeast quarter and the south half of the northeast quarter of the southeast quarter of Section thirty-one and the south half of the southwest quarter of the southwest quarter, the northwest quarter of the southwest quarter of the southwest quarter, the south half of the northeast quarter of the southwest quarter of the southwest quarter and the southwest quarter of the northwest quarter of the southwest quarter of Section thirty-two in Township five north all in Range fifteen west of the San Bernardino Meridian, California, containing one hundred sixty-five and eighty-two-hundredths acres,

according to the Official Plat of the Survey of the said Land, returned to the GENERAL LAND OFFICE by the Surveyor-General:

NOW KNOW YE, That there is, therefore, granted by the UNITED STATES unto the said claimant the tract of Land above described; TO HAVE AND TO HOLD the said tract of Land, with the appurtenances thereof, unto the said claimant and to the heirs and assigns of the said claimant forever; subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights, as may be recognized and acknowledged by the local customs, laws, and decisions of courts; and there is reserved from the lands hereby granted, a right of way thereon for ditches or canals constructed by the authority of the United States.

IN TESTIMONY WHEREOF, I, Woodrow Wilson President of the United States of America, have caused these letters to be made Patent, and the seal of the General Land Office to be hereunto affixed.

GIVEN under my hand, at the City of Washington, the THIRTY-FIRST day of AUGUST in the year of our Lord one thousand nine hundred and FIFTEEN and of the Independence of the United States the one hundred and FORTIETH.

(SEAL)

By the President: Woodrow Wilson,

By M. K. Gulick, Assistant Secretary,

L. Q. C. Lamar, Recorder of the General Land Office.

RECORD OF PATENTS: Patent Number 488493

6—2177

Form 4-1083
(May 1963)
Riverside 05891

The United States of America

To all to whom these presents shall come, Greeting:

WHEREAS, In pursuance of the provisions of the Revised Statutes of the United States, Chapter Six, Title Thirty-two, and legislation supplemental thereto, there is now deposited in the Bureau of Land Management of the United States a Certificate of the Land Office at Riverside, California, accompanied by other evidence, whereby it appears that

Walter C. Harris and Betty B. Harris

did on March 2, 1966, duly enter and pay for that certain mining claim or premises, known as the "Blue Cloud West," "Blue Cloud Center" and "Blue Cloud East" placer mining claims, situate in the Palomas Mining District, Los Angeles County, California, described as follows:

San Bernardino Meridian, California.

T. 5 N., R. 15 W.,

"Blue Cloud West" Placer Mining Claim, embracing:
Sec. 31, Lot 1;

"Blue Cloud Center" Placer Mining Claim, embracing:
Sec. 31, NW¼NE¼;

"Blue Cloud East" Placer Mining Claim, embracing:
Sec. 31, NE¼NE¼.

The premises herein granted contain 116.72 acres.

Patent Number 04-66-0297

U.S. GOVERNMENT PRINTING OFFICE: 1963—O-688417

Form 4-1081
(May 1963)

Riverside 05891

NOW KNOW YE, That there is therefore, pursuant to the laws aforesaid, hereby granted by the United States unto the said Walter C. Harris and Betty B. Harris

and to their heirs , the said placer mining premises, hereinbefore described:

TO HAVE AND TO HOLD said mining premises, together with all the rights, privileges, immunities, and appurtenances of whatsoever nature thereunto belonging, unto the said grantee above named and to their heirs and assigns forever; subject, nevertheless, to the following conditions and stipulations:

FIRST. That the grant hereby made is restricted in its exterior limits to the boundaries of the said mining premises, and to any veins or lodes of quartz or other rock in place bearing gold, silver, cinnabar, lead, tin, copper, or other valuable deposits, which may have been discovered within said limits subsequent to and which were not known to exist on October 26, 1964.

SECOND. That should any vein or lode of quartz or other rock in place bearing gold, silver, cinnabar, lead, tin, copper, or other valuable deposits, be claimed or known to exist within the above-described premises at said last-named date, the same is expressly excepted and excluded from these presents.

THIRD. That the premises hereby conveyed shall be held subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local laws, customs, and decisions of the courts. And there is reserved from the lands hereby granted a right-of-way thereon for ditches or canals constructed by the authority of the United States.

FOURTH. That in the absence of necessary legislation by Congress, the Legislature of California may provide rules for working the mining claim or premises hereby granted, involving easements, drainage, and other necessary means to the complete development thereof.

FIFTH. There is reserved to the United States all Leasing Act minerals in said Lot 1 of Sec. 31, and the right of the United States, its lessees, permittees, and licensees to enter upon the said Lot 1, prospect for, drill, mine, treat, store, and remove the same, and to use so much of the surface and subsurface of said Lot 1 as may be necessary for such purposes, in accordance with the provisions of the Act of August 13, 1954 (68 Stat. 708).

IN TESTIMONY WHEREOF, the undersigned authorized officer of the Bureau of Land Management, in accordance with the provisions of the Act of June 17, 1948 (62 Stat. 476), has, in the name of the United States, caused these letters to be made Patent, and the Seal of the Bureau to be hereunto affixed.

GIVEN under my hand, in Sacramento, California, the TWENTY-NINTH day of APRIL in the year of our Lord one thousand nine hundred and SIXTY-SIX and of the Independence of the United States the one hundred and NINETIETH.

[SEAL]

By John E. Cluter
Chief, Branch of Title and Records
Sacramento Land Office

Patent Number 04-66-0297

U.S. GOVERNMENT PRINTING OFFICE: 1963—O-688415

APPENDIX E:
GEOTECHNICAL REPORT

BLUE CLOUD BIKE PARK
SANTA CLARITA, CALIFORNIA

GEOTECHNICAL REPORT

SUBMITTED TO
Mr. Alireza Sazegari
Hunsaker & associates
26074 Avenue Hall, Suite 22
Valencia, CA 91355

PREPARED BY
ENGEO Incorporated

October 25, 2024

ENGEO PROJECT NO.
26461.000.001

ENGEO
Expect Excellence

Project No.
26461.000.001

October 25, 2024

Mr. Alireza Sazegari
Hunsaker & associates
26074 Avenue Hall, Suite 22
Valencia, CA 91355

Subject: Blue Cloud Bike Park
Santa Clarita, California

GEOTECHNICAL REPORT

Dear Mr. Sazegari:

This geotechnical report presents our findings and recommendations for the improvements planned within the Blue Cloud Bike Park located in Santa Clarita, California. The purpose of this report is to summarize subsurface data, characterize general soil and geologic conditions, and provide design-level recommendations for grading, drainage, foundations, flatwork, and near-surface infiltration.

Based on our findings and from a geotechnical standpoint, it is our opinion that the site is suitable for the proposed improvements, provided the recommendations presented in this report are incorporated into the project plans and specifications.

If you have any questions or comments regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated

REGISTERED PROFESSIONAL ENGINEER
JULIA A. MORIARTY
No. 2679
GEOTECHNICAL
STATE OF CALIFORNIA

Jose Cejudo

Julia A. Moriarty, GE

jc/thz/cw/au/jam/ar

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

ENGEO prepared this geotechnical report to support the improvements planned within the Blue Cloud Bike Park (Site) located in Santa Clarita, California, as outlined in our proposal dated July 1, 2024. We were authorized to conduct the following general scope of services.

- Perform two limited subsurface explorations and collect soil samples
- Perform three shallow boring percolation tests
- Perform laboratory testing on select soil samples
- Prepare a design-level geotechnical report

This report was prepared for the exclusive use of Hunsaker & Associates and their consultants and contractors for design of this project. If any changes are made in the character, design, or layout of the development, we must be contacted to review the conclusions and recommendations contained in this report to evaluate whether modifications are recommended. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without our express written consent.

1.2 PROJECT LOCATION AND DESCRIPTION

The Blue Cloud Bike Park is located within mountain ranges in the Angels National Forest in Santa Clarita, as shown in the Vicinity Map, Figure 1. The Site is accessed off the northern end of Blue Cloud Road and Pettinger Canyon Road in Santa Clarita, California.

The existing park Site consists of undeveloped bike paths. The improvements planned within the project Site are to update the two park entrances (Haskell Entrance and Blue Cloud Entrance), including paved access and parking areas, LID basin areas, double vault toilet structures, shade structures, hardscape, and landscape areas.

2.0 FINDINGS

2.1 REGIONAL GEOLOGY

The Site is located within the Transverse Ranges Geomorphic Province of California. The Transverse Ranges are characterized by a complex series of east-west-trending mountain ranges, valleys, and quaternary faults extending from Santa Ynez Mountains and Channel Islands eastward through the San Bernardino Mountains. The Site is at the northeastern end of the Ventura Basin of Southern California and near the northernmost portion of Santa Clarita Valley. The Ventura Basin is a westerly plunging depositional basin produced by tectonic downwarping initiated during the early Miocene epoch, with its axis approximately coinciding with the Santa Clara River.

Figure 3 shows regional mapping by Dibblee, which identifies the planned portions of the Site to be improved in the lower canyon areas as underlain by Mint Canyon Formation (Tmc) and Holocene alluvial deposits (Qa). Mint Canyon Formation consists of middle Miocene fine grained sandstone and local pebbly and interbedded siltstone and claystone, and Holocene alluvial deposits (Qa) consist of alluvial gravel, sand, and clay. Bedrock at the Blue Cloud entrance dips at a low angle to the north. The axis of a syncline traverses the Haskell entrance, so bedrock dips gently to the north at the northern end and dips steeply to the south at the southern end.

2.2 FAULTING AND SEISMICITY

The Site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone and no known surface expression of active faults is believed to exist within the Site. Therefore, fault rupture through the Site is not anticipated. However, the Southern California Peninsular Ranges are regions of high seismicity, and it is likely that the Site will experience strong seismic ground shaking in the future. The Uniform California Earthquake Rupture Forecast (UCERF3) (Field et al., 2015) estimates the 30-year probability for a moment magnitude 6.7 or greater earthquake in Southern California at approximately 93 percent, considering the known active seismic sources in the region.

Many earthquakes of low magnitude occur every year throughout the region, most of which are concentrated along the San Andreas Fault. Figure 5 shows the approximate location of historic Holocene and Quaternary faults and significant historic earthquake epicenters mapped within the region. Significant earthquakes with moment magnitude 6 or greater have ruptured on the San Andreas Fault, including in the 1812 Wrightwood earthquake (approximate M7.3) and the 1857 Great Fort Tejon earthquake (M7.9). More recently, significant earthquakes in the Southern California region include the 1933 Long Beach earthquake (M6.4), the 1971 San Fernando earthquake (M6.6), the 1992 Landers earthquake (M7.3), and the 1994 Northridge earthquake (M7.3).

To determine nearby active faults that are capable of generating strong seismic ground shaking at the Site, the USGS Unified Hazard disaggregation tool was utilized, with the resulting faults listed below in Table 2.2-1. We disaggregated the hazard associated with a 2,475-year event at the anticipated approximate fundamental period of the buildings, of 0.3 second.

TABLE 2.2-1: Nearby Active Faults*, Latitude: 34.476845 Longitude: -118.501561

FAULT SOURCE	APPROXIMATE DISTANCE TO SITE (miles)	MAXIMUM MOMENT MAGNITUDE
San Gabriel (3)	5.98	7.38
San Gabriel (2)	6.98	7.51
Holser [2] (1)	8.83	7.57
Northridge Hills (1)	12.46	7.64
Santa Susana [2] (2)	13.44	7.15
Santa Susana [2] (1)	13.60	6.36
Santa Susana [1] (0)	14.04	7.38
Santa Susana [2] (3)	15.41	7.22
Northridge (1)	16.95	7.55
San Andreas (Mojave, south) (1)	22.21	8.02

*Edition: NSHM Conterminous U.S. 2018

2.3 SEISMIC HAZARD ZONE MAP

The California Division of Mines and Geology (CDMG) completed a Seismic Hazard Zones Map (SHZ) for the Newhall Quadrangle (CDMG, 1997). According to the SHZ map (Figure 4), the areas of the planned Site improvements is within mapped potential liquefaction zones. Hillside portions of the overall bike park are within an earthquake-induced landslide zone.

2.4 FIELD EXPLORATION

Our field exploration consisted of two hollow-stem auger drilled borings to approximately 9½ feet, and three shallow borehole percolation tests at approximately 5 feet deep within the Site, as shown in the Site Plan, Figures 2A and 2B.

The locations and elevations of our explorations are approximate and were estimated by pacing from features shown in the Site Plan; they should be considered accurate only to the degree implied by the method used. We used the field log to develop the report log in Appendix A. The log depicts subsurface conditions at the exploration location for the date of exploration; however, subsurface conditions may vary with time.

2.4.1 Borings

An ENGEO staff engineer observed the drilling and logged the subsurface conditions at the boring locations shown in Figures 2A and 2B. We retained a truck-mounted CME 75 drill rig and crew to advance two borings using an 8-inch-diameter hollow-stem auger. The borings, 1-B1 and 1-B2, were advanced to a maximum depth of approximately 9½ feet below existing grade. We obtained soil samples at various intervals in the borings using standard penetration test (SPT) and Modified California driven samplers.

The penetration resistance blow counts were obtained by dropping a 140-pound auto-hammer through a 30-inch free fall. The sampler was driven 18 inches and the number of blows was recorded for each 6 inches of penetration. Unless otherwise indicated, the blows per foot recorded on the boring log represent the accumulated number of blows to drive the last 1 foot of penetration; the blow counts have not been converted using any correction factors. The boring logs are included in Appendix A.

2.4.2 Percolation Field Tests

We performed three percolation tests at the location 1-P1, 1-P2, and 1-P3 shown in Figures 2A and 2B. The test locations and depths were provided by the design team. We performed the testing following procedures in general accordance with the Administrative Manual, Los Angeles County Public Works – Geotechnical and Materials Engineering Division - GS200.1, dated June 30, 2021 (Manual).

We retained a truck-mounted CME 75 drill rig and crew to advance the three percolation test holes using an 8-inch-diameter hollow-stem auger. We drilled the percolation test holes to a depth of approximately 5 feet below the ground surface and placed a 2-inch-diameter perforated PVC pipe with a solid end cap into the hole. We backfilled the annulus with fine gravel and pre-soaked the hole for 20 minutes. We performed the percolation tests by placing water in the pipe and measuring the time for one hour and until a stabilized rate of drop was obtained, as described in the Manual. We did not encounter groundwater during our exploration. The results of the percolation tests are summarized in Section 3.6.

2.5 SURFACE CONDITIONS

According to topographic mapping provided to us by Hunsaker & Associates, the Haskell Entrance is approximately at Elevation 1,450 feet and slopes down to the west. The Blue Cloud Entrance is approximately at Elevation 1,620 feet and slope down to the east. During our recent Site visit on October 9, 2024, we observed that the Site entrance areas generally consist of unpaved parking, unpaved paths, and dry vegetation.

2.6 SUBSURFACE CONDITIONS

Our field exploration at Boring 1-B1 encountered very stiff silt in the upper 5 feet, followed by hard lean clay and very dense clayey sand to 9½ feet below ground surface. Boring 1-B2 encountered very stiff lean clay with varying amounts of sand with in the upper 9½ feet of the soil profile.

2.7 GROUNDWATER

The California Division of Mines and Geology (CDMG, 1997) reported that the area has not yet been mapped for historical high groundwater levels within the vicinity of the Site. Our explorations did not encounter groundwater in the maximum explored depth of approximately 9½ feet at the time of exploration.

Fluctuations in the level of groundwater may occur due to variations in rainfall, irrigation practice, and other factors not evident at the time measurements were made.

2.8 SOIL SAMPLING AND LABORATORY TESTING

We performed laboratory tests on select soil samples collected from the soil borings and bulk samples. Lab tests included moisture density, sulfate, sieve analysis, resistance value (R-value), and plasticity index (PI). Select test results are recorded on the boring logs in Appendix A and laboratory results are provided in Appendix B and Appendix C.

3.0 CONCLUSIONS

3.1 SEISMIC HAZARDS

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking, and seismic-induced liquefaction, ground lurching, and landsliding.

In addition, we considered other typical geologic and seismic-related hazards in the region. Based on topographic and lithologic data, the risk of regional subsidence or uplift, tsunamis, flooding, and seiches are considered low to negligible at the Site.

The following sections present a discussion of main hazards as they apply to the Site.

3.1.1 Ground Rupture

Since there are no known active faults crossing the property and the Site is not located within an Alquist-Priolo Earthquake Fault Zone, it is our opinion that ground rupture is unlikely at the Site.

3.1.2 Ground Shaking

A nearby earthquake of moderate to high magnitude could cause considerable ground shaking at the Site, similar to that which has occurred in the past. To mitigate the shaking effects, structures should be designed using sound engineering judgment and the 2022 California Building Code (CBC) requirements, as a minimum. Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, and combined with the gravity forces of dead and live loads. Conformance to the current building code recommendations does not ensure that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake (SEAOC, 1999).

3.1.3 Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soil most susceptible to liquefaction is clean, loose, saturated, uniformly graded, fine-grained sand. The soil layers encountered in the subsurface explorations within the Site generally consisted of stiff to hard lean clay, and silt with interbedded layers of very dense clayey sand layers in the maximum drilled depth of 9½ feet below existing grade. Groundwater was not encountered within the depth of our borings.

For the planned bike park improvements within the alluvial materials, a detailed liquefaction assessment was not performed. However, the impacts associated with potential seismic-induced liquefaction settlements on the planned improvements are considered low.

3.1.4 Ground Lurching and Lateral Spreading

Ground lurching is a phenomenon that can be caused by seismically generated ground motions in soft or liquefiable soil. Ground lurching effects are typically greater where dissimilar soil units are in contact, such as the alluvium-bedrock contacts at the margins of valleys, or where subsurface soil differ in susceptibility to seismic ground motions. In our opinion, due to the lack of nearby steep downslopes or creek banks bordering the planned improvement areas, the risk of ground lurching at the Site is low.

3.1.5 Landsliding

The term landslide describes a wide variety of processes that result in the downward and outward movement of slopes. Slope movement may occur by falling, toppling, sliding, spreading, or flowing. The various typers of landslides can be classified by the mechanics of movement and by the kinds of material involved. Seismic-induced landsliding is a potential hazard within the hillside portions of the overall bike park Site. For the planned bike park improvements, a detailed landslide assessment was not performed since these two areas are not within mapped zones, as shown in Figure 4. The impacts associated with potential seismic-induced landsliding on the planned improvements are low within the low-lying valley areas, and both Sites are not included in the Site Hazard map published by the CGS.

3.2 EXPANSIVE SOIL

Silt and lean clay were encountered in the upper portion of the borings at the Site. Laboratory testing on soil samples yielded PI values between 10 and 16, which generally correspond to low to medium shrink/swell potential with variations in moisture content. However, the explorations indicate that the distribution of potentially expansive soil is highly variable at the Site, both in depth and lateral extent, which is typical for alluvial deposits.

Expansive soil changes in volume with changes in moisture, varying between shrink and swell, which can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Building damage due to volume changes associated with expansive soil can be reduced by properly blending, moisture conditioning, and compacting fills, subexcavating and rebuilding cut areas with homogeneous, properly moisture-conditioned fills, designing hardscape/pavements to accommodate expansive soil, and supporting structures on properly designed foundations.

3.3 COLLAPSIBLE SOIL

Collapsible native soil forms where alluvial soil is rapidly deposited in semi-arid to arid climates. The collapsible soil remains in a stable state in the partially saturated condition. Hydroconsolidation occurs when collapsible soil is wetted and causes rapid settlement. The wetting-induced settlement can result in movement and potential damage to structures. Collapsible soil is characterized by low-density and low-moisture contents. The other key characteristics of collapsible soil include open structure with high void ratio and high porosity, geologically young deposit, high sensitivity, and low inter-particle bonding strength (Howayek et al., 2011).

Los Angeles County (2013) states that as a general rule, sandy soil with in situ dry density of less than 108 pounds per cubic foot (pcf) and a moisture content of less than 8 percent are considered susceptible to hydrocollapse. Based on our review of the test results of the dry densities and moisture contents determined on the native soil samples collected in Borings 1-B1 and 1-B2, the soil tested does not meet these criteria, and in our opinion, the risk of hydrocollapse of the native soil at the planned improvement areas is low.

3.4 SOIL CORROSION POTENTIAL

As part of this study, we obtained representative soil samples and submitted to an accredited analytical lab for determination of pH, resistivity, sulfate, and chloride. The results are included in Appendix C and summarized in the table below.

TABLE 3.4-1: Corrosivity Test Results

SAMPLE LOCATION	DEPTH (FEET)	pH	RESISTIVITY (OHMS-CM)	CHLORIDE (MG/KG)	SULFATE (MG/KG)
RV-1	1	8.25	600	N.D.	110
RV-2	1	7.28	1,500	21	21

N.D. – none detected above the reporting limit

The CBC references the American Concrete Institute Manual, ACI 318-14 for structural concrete requirements. According to ACI 318-14 Table 19.3.1.1, these samples are categorized “S0” sulfate exposure class, and there is no requirement for cement type or water-cement ratio; however, a minimum concrete compressive strength of 2,500 pounds per square inch (psi) is specified by the building code.

The laboratory testing included determination of pH, resistivity, sulfate, and chloride. The samples tested had relatively low resistivities, indicating that they are considered “corrosive” to buried metal per NACE Corrosion Basics. If desired to investigate this further, we recommend a corrosion consultant be retained to evaluate if specific corrosion recommendations are advised for the project.

3.5 2022 CBC SEISMIC DESIGN PARAMETERS

The 2022 CBC utilizes seismic design criteria established in the ASCE/SEI Standard "Minimum Design Loads and Associated Criteria for Buildings and Other Structures," (ASCE 7-16). Although the depth of the borings were less than the required 30 meters for seismic classification for the alluvial materials encountered, we characterized the Site as Site Class D for foundation design.

ASCE 7-16 requires a Site-specific ground-motion hazard analysis for Site Class D sites with a mapped S_1 value greater than or equal to 0.2; however, Section 11.4.8 of ASCE 7-16 and Supplement No. 3 provide an exception to this requirement. A Site-specific ground-motion hazard analysis is not required where the value of the parameter S_{M1} determined by Equation 11.4-2 and shown in Table 3.5-1 is increased by 50 percent for developing the mapped Risk Targeted Maximum Considered Earthquake (MCE_R) spectral response, calculating S_{D1}, and evaluating C_s in accordance with Chapter 12 of ASCE 7-16.

In Table 3.5-1 below, we provide the CBC seismic parameters based on the United States Geological Survey's (USGS') Seismic Design Maps for use in foundation design.

TABLE 3.5-1: 2022 CBC Seismic Design Parameters, Latitude: 34.476845 Longitude: -118.501561

PARAMETER	VALUE
Site Class	D
Mapped MCE_R Spectral Response Acceleration at Short Periods, S_S (g)	1.87
Mapped MCE_R Spectral Response Acceleration at 1-second Period, S_1 (g)	0.703
Site Coefficient, F_a	1
Site Coefficient, F_v	*1.7**
MCE_R Spectral Response Acceleration at Short Periods, S_{MS} (g)	1.87
MCE_R Spectral Response Acceleration at 1-second Period, S_{M1} (g)	1.195*
Design Spectral Response Acceleration at Short Periods, S_{DS} (g)	1.246
Design Spectral Response Acceleration at 1-second Period, S_{D1} (g)	0.796*
Mapped MCE Geometric Mean (MCE_G) Peak Ground Acceleration, PGA (g)	0.791
Site Coefficient, F_{PGA}	1.1
MCE_G Peak Ground Acceleration adjusted for Site Class effects, PGA_M (g)	0.87
Long period transition-period, T_L (sec)	12

*The parameters above should only be used for calculation of T_s, determination of Seismic Design Category, and, when taking the exceptions under Items 1 and 2 of ASCE 7-16 Section 11.4.8. (Supplement Number 3 https://ascelibrary.org/doi/epdf/10.1061/9780784414248.sup3).

We recommend that we collaborate with the Structural Engineer-of-Record to further evaluate the effects of taking the exception on the structural design and identify the need for performing additional field exploration, or a Site-specific ground-motion hazard analysis. We can prepare a proposal for these services, if requested.

3.6 PERCOLATION TEST RESULTS

The results of our borehole percolation tests are summarized in Table 3.6-1, which includes the raw field-measured percolation rate measured using the methods provided by the LA County Administrative Manual GS200.1, as well as the infiltration rate calculated using Porchet's method. We have not applied any reduction factors to the measurements.

TABLE 3.6-1: Borehole Percolation Test Result

TEST LOCATION	FIELD-MEASURED PERCOLATION RATE (inch/hour)	CALCULATED INFILTRATION RATE (Field-Measured Rate Corrected Using Porchet's method) (inch/hour)
1-P1	20	0.2
1-P2	45	0.6
1-P3	24	0.3

The percolation rates reported above are based on the conditions at the location, depth, and time of the field test. Actual infiltration rates can be affected by changes in subsurface soil and groundwater conditions, test methodology, time of year, and the rate and depth at which water is applied. Appropriate engineering judgment and design factors should be applied to the use of these test data for stormwater infiltration.

4.0 EARTHWORK RECOMMENDATIONS

4.1 DEMOLITION AND GENERAL SITE CLEARING

Excavations below design grades should be cleaned to a firm undisturbed soil surface determined by the geotechnical engineer. This surface should then be scarified, moisture conditioned, and recompacted prior to backfill with compacted engineered fill, as needed. The requirements for backfill materials and placement operations are the same as for engineered fill. Loose or uncontrolled backfilling of depressions resulting from demolition should not be allowed.

4.2 ACCEPTABLE FILL

On-site soil, gravel, and excess soil spoils generated from the Site are suitable for use as engineered fill provided, they are processed to remove debris, particles greater than 3 inches in maximum dimension, and concentrations of organic material exceeding 3 percent by weight.

Pavement or concrete materials, if any, can be reused as engineered fill if desired. These materials should be broken down to less than 3 inches in greatest dimension, but not pulverized, and should be blended with soil materials. If desired to reuse as aggregate base (AB) under pavements or hardscape, it should be separated and broken down to meet AB specifications.

4.3 FILL PLACEMENT SPECIFICATIONS

Once a suitable firm base is achieved, the exposed non-yielding surface should be scarified to an approximate depth of 10 inches, moisture conditioned, and compacted to provide adequate bonding with the initial lift of engineered fill. Engineered fill should be placed according to the following fill specifications, depending upon location and material.

TABLE 4.3-1: Engineered Fill Compaction Recommendations

FILL AREA	TEST PROCEDURE	MINIMUM MOISTURE CONTENT	MINIMUM RELATIVE COMPACTION*
General Fill and Soil Trench Backfill	ASTM D1557	At least 2 percentage points above optimum moisture	At least 90 percent
Landscape Area Fill (non-structural)	ASTM D1557	At least 3 percentage points above optimum moisture	At least 85 percent
Pavement Subgrade and AB	ASTM D1557	At least Optimum Moisture	At least 95 percent

FILL AREA	TEST PROCEDURE	MINIMUM MOISTURE CONTENT	MINIMUM RELATIVE COMPACTION*
Hot Mix Asphalt (HMA)	CalTrans	--	At least 95 percent (Wet Density)

* Relative compaction - in-place density of material expressed as a percentage of the maximum density per ASTM D1557, or HMA batch plant provided curve.

4.4 SURFACE DRAINAGE

We recommend that the Site be positively graded to provide for rapid removal of surface water. Ponding of water should not be allowed near building foundations, pavements, exterior flatwork, or retaining walls. To satisfy minimum LA County requirements, paved surface (concrete) should provide a slope gradient of at least ½ percent away from exterior building walls to allow surface water to drain positively away from the structures. Landscape mounds and hardscape features should be designed so they do not interfere with these requirements. As necessary, sufficient area drains should be provided around the buildings to remove excess surface water rapidly.

5.0 FOUNDATION RECOMMENDATIONS

Two single-story double vault restroom buildings are planned, one at each park Site entrance. Provided the Site is graded as recommended in this report, the buildings may be supported on conventional reinforced mats or shallow footings with slab-on-grade. Shallow footings should be tied together with grade beams.

Site walls, shade structures, and other ancillary structures may be supported on shallow continuous and spread footings or drilled pier-and-grade-beam foundations.

Foundation design parameters for shallow footings, conventional mat foundations, and drilled piers are presented below. Provided our report recommendations are followed and given the proposed construction, we estimate total and differential foundation settlements to be less than approximately 1 and ¾ inches, respectively.

5.1 SHALLOW CONTINUOUS AND SPREAD FOOTINGS

For buildings, structures, or Site walls situated at least 5 feet from tops of slopes/walls or water features, the following minimum dimensions can be used in design of reinforced footings.

TABLE 5.1-1: Minimum Footing Dimensions

FOOTING TYPE	*MINIMUM DEPTH (inches)	MINIMUM WIDTH (inches)
Continuous	18	12
Isolated	24	18

* below lowest adjacent pad grade

For footings situated less than 5 feet from the top of a slope, the footings should be embedded, as necessary, to achieve at least 5 horizontal feet to the nearest free slope face. If footings are situated less than 5 feet from nearby tops of walls or water features, or if footings are located parallel to utility trenches, the footings should be deepened, as needed, to extend below an imaginary 1:1 (horizontal:vertical) plane projected downwards from the bottom edge of the footing to the bottom of the wall or trench.

A maximum allowable bearing pressure of 2,500 pounds per square foot (psf) for dead-plus-live loads can be incorporated into the design for footings bearing on engineered fill or firm, non-yielding native. This value may be increased by one-third for the short-term effects of wind or seismic loading.

The friction factor for sliding resistance may be assumed as 0.35 and passive pressures acting on footing foundations may be assumed as 300 pounds per cubic foot (pcf) starting at a depth of at least 1 foot below pad grade or that depth necessary to achieve a horizontal distance of 5 feet between the outer base edge of the footing and the nearest free face/retaining wall, whichever is deeper. The passive pressure value may be increased by one-third for wind or seismic loading conditions.

During construction, footing trenches should be cleared of loose materials and debris. In addition, soil exposed in footing excavations should not be allowed to desiccate prior to placing concrete. ENGEO's field representative should observe and approve the footing excavations prior to concrete placement.

5.2 MAT FOUNDATIONS

If desired, a conventionally reinforced structural mat can be used to support the proposed double vault restrooms. The following design parameters and recommendations should be incorporated.

- Effective PI of 20
- Cantilever distance or unsupported radius of 5 feet
- Maximum beam spacing of 15 feet
- Subgrade modulus of 180 psi/in

Mat foundations may be designed with an average allowable bearing pressure of 1,000 psf for dead-plus-live loads. At concentrated loading locations, the allowable bearing pressure can be increased to 1,500 psf. The allowable bearing pressures can be increased by one-third for all loads including wind or seismic.

Resistance to lateral loads may be provided by frictional resistance between the foundation concrete and the bearing soil and by passive earth pressure acting against the side of the foundation. A coefficient of friction of 0.30 can be used between concrete and the subgrade. Passive resistance should be evaluated using a triangular pressure distribution modeled as an equivalent fluid weight of 300 pcf. The passive pressure value may be increased by one-third for the short-term effects of wind or seismic loading.

5.3 PAD MOISTURE CONDITIONING

Immediately prior to mat foundation construction, the pad subgrade should be moisture conditioned to a moisture content of at least 3 percentage points above optimum and approved by the geotechnical engineer prior to placing steel reinforcement and should not be allowed to dry prior to concrete placement.

5.4 CONCRETE SLAB-ON-GRADE FLOORS

For footings with a concrete floor slab, we recommend the concrete floor slabs be at least 6 inches thick and reinforced with No. 4 bars spaced 18 inches on center each way as a minimum. The structural engineer should provide final design thickness and additional reinforcement for anticipated structural loads.

The concrete slab should be underlain by at least 6 inches of compacted ¾-inch clean crushed rock over processed subgrade. The crushed rock should have 100 percent passing the ¾-inch sieve and less than 5 percent passing the No. 4 sieve.

5.5 TRENCH BACKFILL

Trenches (utility and plumbing) should be backfilled and compacted in accordance with the Fill Placement Specifications presented in this report.

5.6 MOISTURE VAPOR REDUCTION

When buildings are constructed with concrete slab-on-grade and structural mats, water vapor from beneath the slab will migrate through the slab and into the building. This water vapor can be reduced but not stopped. Vapor transmission can negatively affect floor coverings and lead to increased moisture within a building. When water vapor migrating through the slab would be undesirable, we recommend one or more of the following to reduce, but not stop, water vapor transmission upward through the slab/mat.

- Install a moisture vapor retarder system directly beneath the slab/mat that is sealed at all seams and pipe penetrations and connected to all footings. Vapor retarders shall conform to Class A vapor retarder in accordance with ASTM E1745 "Standard Specification for Plastic Water Vapor Retarders used in Contact with Soil or Granular Fill under Concrete Slabs."
- Use a concrete water-cement ratio for slabs-on-grade of no more than 0.50.
- Provide inspection and testing during concrete placement to check that the proper concrete and water-cement ratio are used.
- Moist cure slabs for a minimum of 3 days or use other equivalent curing specified by the structural engineer.

The structural engineer should be consulted as to the use of a layer of clean sand or pea gravel (less than 5 percent passing the U.S. Standard No. 200 Sieve) placed on top of the vapor retarder membrane to assist in concrete curing.

5.7 LIGHTWEIGHT STRUCTURES

Lightweight structures (such as overhead shade and canopy structures, smaller ancillary landscape features, walls, and overhead lighting) may be supported on spread footings or drilled piers. Conventional footings should be designed according to Section 5.1. Soil design criteria for drilled piers are provided below.

- Maximum Allowable Skin Friction: 400 psf, ignoring the upper 2 feet in the load computation
- Minimum Pier Diameter: 12 inches
- Minimum Pier Depth: 5 feet

Lateral loads may be resisted by passive pressures acting on footing/pier foundations and shear keyways. An equivalent fluid weight of 300 pcf may be used to evaluate passive resistance provided that the upper 1 foot of footing/pier embedment is ignored and the area in front of the footing/pier is level for a distance of at least 5 feet at the elevation passive resistance is initiated. For piers, passive resistance may be applied over two pier diameters. The project structural engineer should design and detail reinforcing steel based on the anticipated structural loads.

During construction, drilled piers should be cleared of loose materials and debris. In addition, soil exposed in excavations should not be allowed to desiccate prior to placing concrete. ENGEO's field representative should observe and approve the excavations prior to concrete placement.

6.0 EXTERIOR FLATWORK

We understand that planned improvements may consist of pedestrian hardscape and walking paths. The different surfaces that are discussed below should be installed following manufacturer guidelines.

Exterior flatwork includes items such as concrete sidewalks/walkways, steps, and outdoor courtyards not exposed to vehicle traffic. Typical walkways, sidewalks, and steps should be constructed structurally independent of other foundation systems(i.e., steel should not be used to tie exterior flatwork or steps to adjacent foundations). This allows flatwork/slab movement to occur with a minimum of foundation distress.

We recommend a minimum section of 4 inches of concrete over prepared subgrade. To improve slab performance, the slab could be reinforced with rebar or welded wire mesh or underlain by 4 inches of compacted aggregate base. In addition, the flatwork edges could be thickened to at least 8 inches to help control moisture variations in the subgrade. Construct control and construction joints in accordance with ACI and Portland Cement Association guidelines to help control the location of, but not eliminate, minor cracking of concrete hardscape.

During construction, care must be exercised in attaining a high moisture condition of the subgrade soil before concrete placement and adjacent subgrade soil materials should not be allowed to become desiccated prior to completion of landscaping.

7.0 PRELIMINARY PAVEMENT DESIGN

We obtained bulk samples of the surface soil from the planned drive isle and parking areas, and performed R-value tests to provide data for pavement designs. The results of the tests are included in Appendix B and indicate R-values of 8 and 18 for the Haskell entrance (west) and 20 for the Blue Cloud entrance (east).

7.1 FLEXIBLE PAVEMENTS

We developed the following recommended pavement sections using Topic 633 of the Caltrans Highway Design Manual (including the asphalt factor of safety), presented in the tables below.

TABLE 8.1-1: Haskell Entrance - Recommended HMA Concrete Pavement Sections

TRAFFIC INDEX	R-VALUE	SECTION	
		HOT MIX ASPHALT (inches)	CLASS 2 AGGREGATE BASE (inches)
4	8	3	6.5
5	8	3	9.5
6	8	3.5	12
7	8	4	15

TABLE 8.1-2: Blue Cloud Entrance - Recommended HMA Concrete Pavement Sections

TRAFFIC INDEX	R-VALUE	SECTION	
		HOT MIX ASPHALT (inches)	CLASS 2 AGGREGATE BASE (inches)
4	20	3	6
5	20	3	7.5
6	20	3.5	9.5
7	20	4	12

The civil engineer should determine the appropriate traffic indexes based on the estimated traffic loads and frequencies. The minimum pavement section(s) should be confirmed by the civil engineer and local jurisdiction (such as, City or County).

Pavement materials and construction should comply with the specifications and requirements of the Standard Specifications by Caltrans, the local jurisdiction, and our compaction recommendations.

7.2 RIGID PAVEMENTS

We recommend the following minimum design sections for rigid pavements.

- Use a minimum section of 6 inches of Portland Cement concrete over 8 inches of Caltrans Class 2 AB
- Concrete pavement should have a minimum 28-day compressive strength of 3,500 psi
- Provide minimum control joint spacing in accordance with Portland Cement Association guidelines

Final design of rigid pavement sections and accompanying reinforcement should be performed based on estimated traffic loads and frequencies.

7.3 SUBGRADE AND AGGREGATE BASE COMPACTION

Compact finish subgrade and aggregate base in accordance with Section 4.3. Aggregate base should meet the requirements for ¾-inch maximum Class 2 AB in accordance with Section 26-1.02B of the latest Caltrans Standard Specifications.

8.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report presents geotechnical recommendations for design of the improvements discussed in Section 1.2 with the Blue Cloud Bike Park Site. If changes occur in the nature or design of the project, we should review this report and provide additional recommendations, if any. It is the responsibility of the owner to transmit the information and recommendations of this report to the appropriate organizations or people involved in design of the project, including but not limited to developers, owners, buyers, architects, engineers, and designers. The conclusions and recommendations contained in this report are solely professional opinions and are valid for a period of no more than 2 years from the date of report issuance.

We strive to perform our professional services in accordance with generally accepted principles and practices currently employed in the area; there is no warranty, express or implied. There are risks of earth movement and property damage inherent in building on or with earth materials. We are unable to eliminate all risks; therefore, we are unable to guarantee or warrant the results of our services.

This report is based upon field and other conditions discovered at the time of report preparation. We developed this report with limited subsurface exploration data and assumed that our subsurface exploration data is representative of the actual subsurface conditions across the Site. If unexpected conditions are encountered, ENGEO must be notified immediately to review these conditions and provide additional and/or modified recommendations, as necessary.

Our services did not include excavation sloping or shoring, or soil volume change factors. In addition, our geotechnical exploration did not include work to determine the existence of possible hazardous materials. If any hazardous materials are encountered during construction, the proper regulatory officials must be notified immediately.

This document must not be subject to unauthorized reuse, that is, reusing without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document’s applicability given new circumstances, not the least of which is passage of time.

Actual field or other conditions will necessitate clarifications, adjustments, modifications, or other changes to ENGEO’s documents. Therefore, ENGEO must be engaged to prepare the necessary clarifications, adjustments, modifications, or other changes before construction activities commence or further activity proceeds. If ENGEO’s scope of services does not include on-site construction observation, or if other persons or entities are retained to provide such services, ENGEO cannot be held responsible for any and all claims arising from or resulting from the performance of such services by other persons or entities, and from any and all claims arising from or resulting from clarifications, adjustments, modifications, discrepancies, or other changes necessary to reflect changed field or other conditions.

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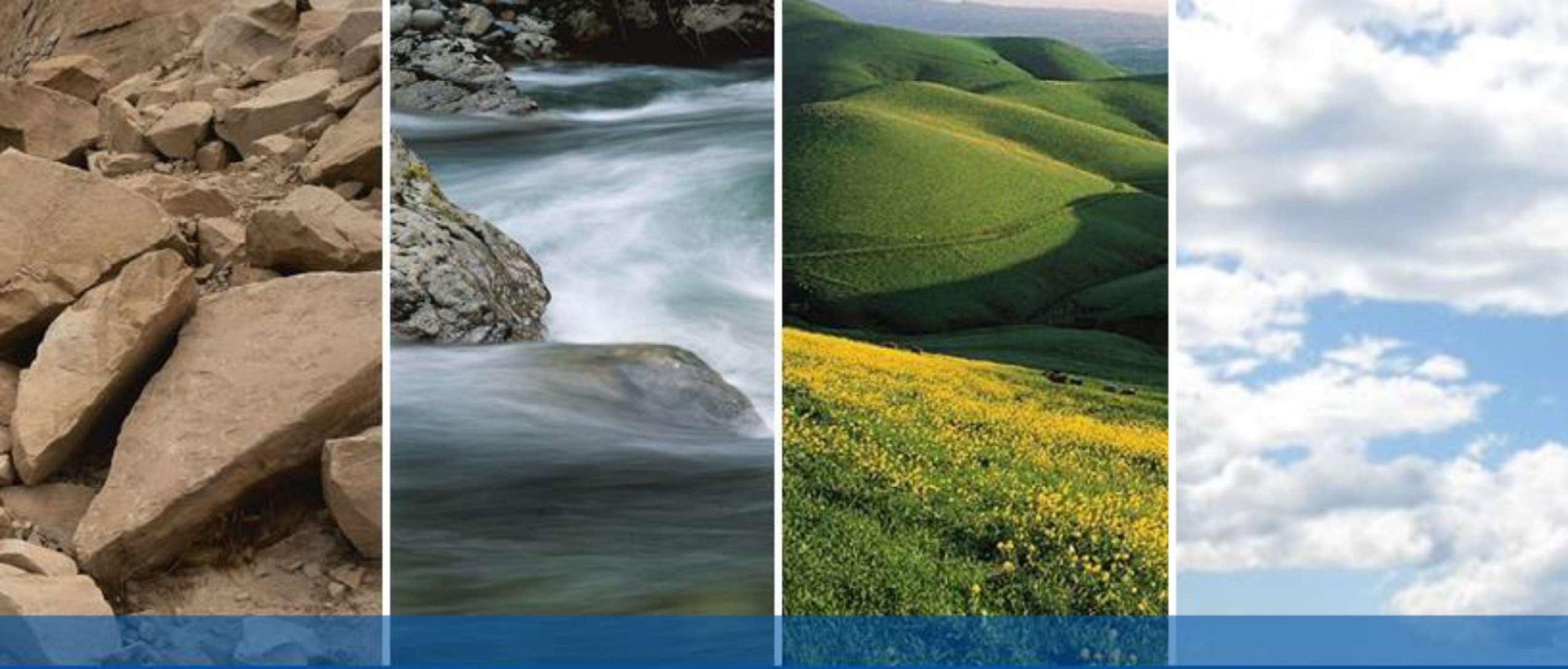
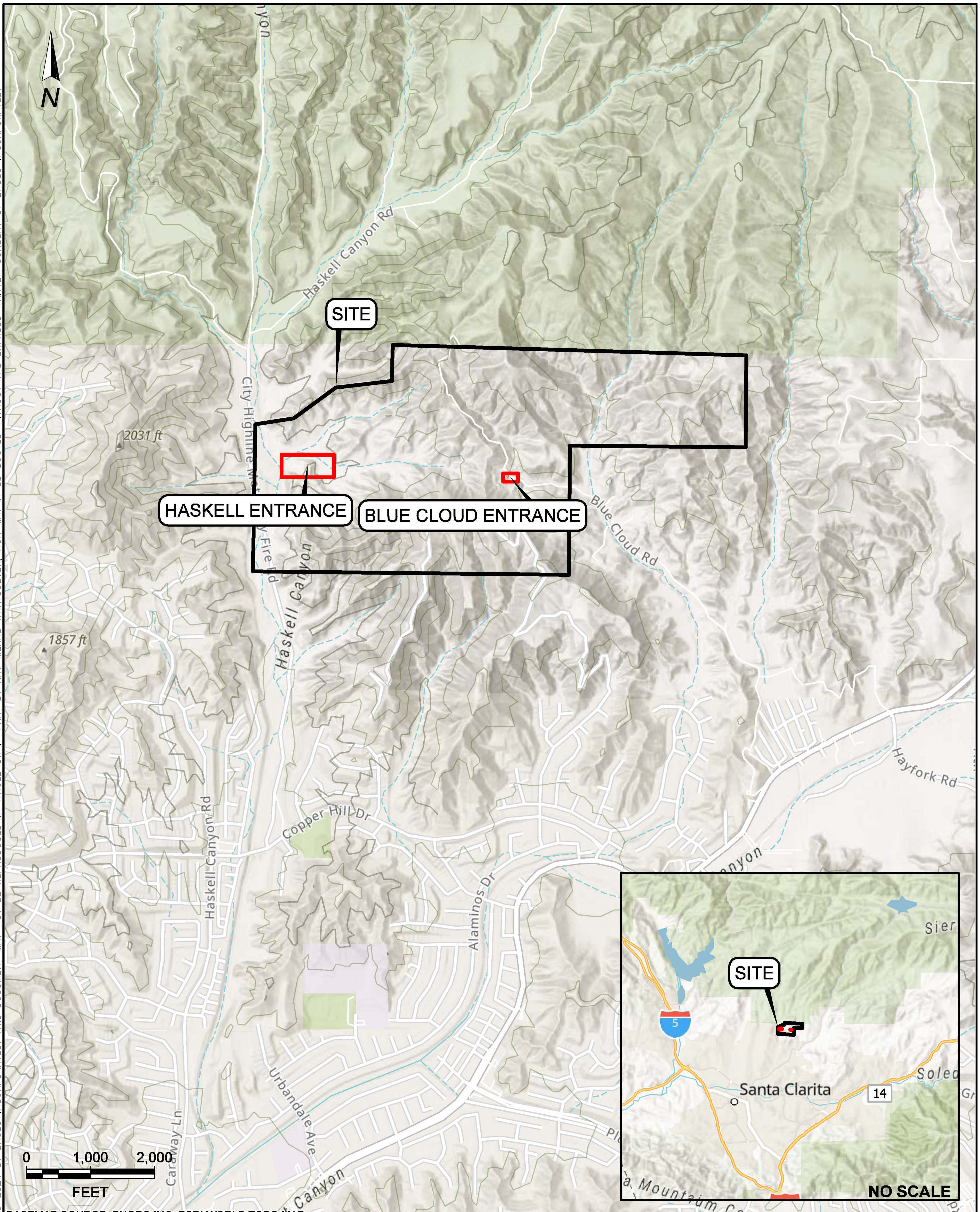


FIGURES



BASEMAP SOURCE: ENGEO INC, ESRI WORLD TOPO MAP

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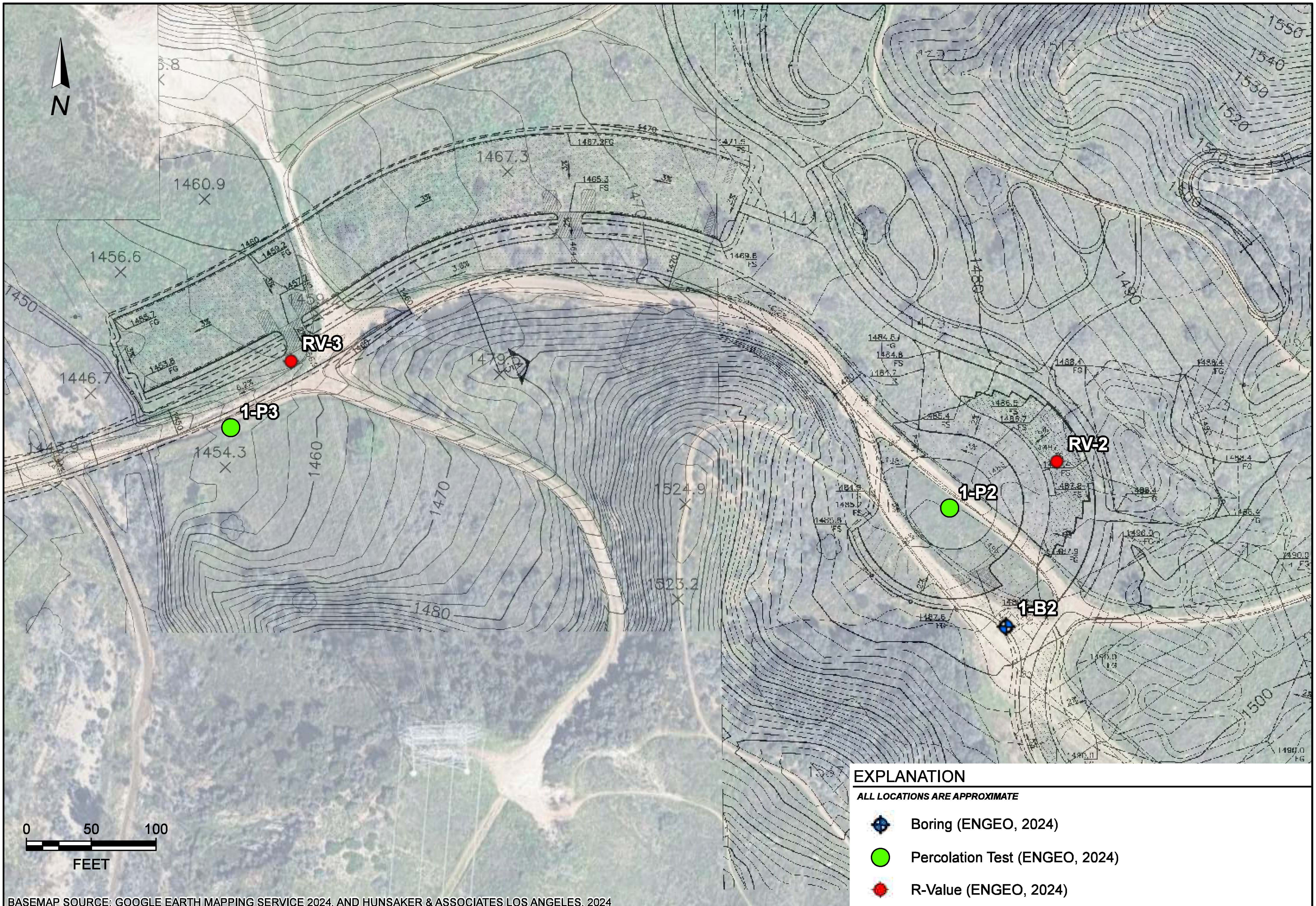
VICINITY MAP
BLUE CLOUD BIKE PARK
SANTA CLARITA, CALIFORNIA

PROJECT NO.: 26461.000.001	FIGURE NO. 1
SCALE: AS SHOWN	
DRAWN BY: NWC	CHECKED BY: JAM

PATH: G:\DRAFTING\PROJECTS_26000 TO 27999\26461\26461.000.001 BLUE CLOUD BIKE\GEOTECHNICAL\GEX\26461000001_BLUECLOUDBIKEPARK – GEX.APRX
LAYOUT: 01. VICINITY 8.5 X 11 PORTRAIT USER: NCLOUGH

ORIGINAL FIGURE PRINTED IN COLOR



EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

Boring (ENGEO, 2024)

Percolation Test (ENGEO, 2024)

R-Value (ENGEO, 2024)

BASEMAP SOURCE: GOOGLE EARTH MAPPING SERVICE 2024, AND HUNSAKER & ASSOCIATES LOS ANGELES, 2024

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SITE PLAN

BLUE CLOUD BIKE PARK - HASKELL ENTRANCE

SANTA CLARITA, CALIFORNIA

PROJECT NO. : 26461.000.001	FIGURE NO. 2A
SCALE: AS SHOWN	
DRAWN BY: NWC	CHECKED BY: JAM

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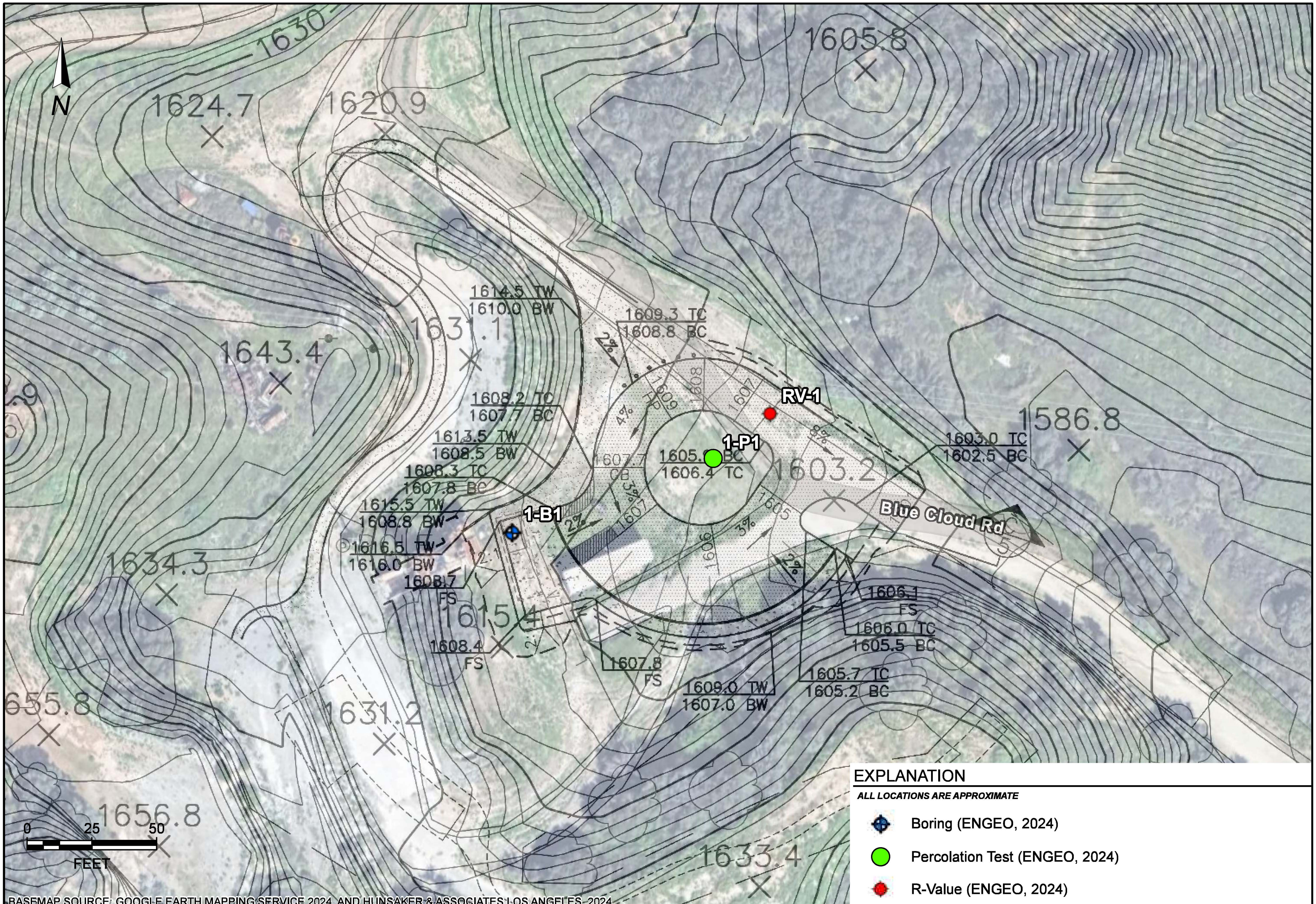
LAYOUT: 02A. SITE PLAN 8.5 X11 LANDSCAPE USER: NCLOUGH



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SITE PLAN

BLUE CLOUD BIKE PARK - BLUE CLOUD ENTRANCE

SANTA CLARITA, CALIFORNIA

PROJECT NO. : 26461.000.001

SCALE: AS SHOWN

DRAWN BY: NWC | CHECKED BY: JAM

FIGURE NO. 2B

ORIGINAL FIGURE PRINTED IN COLOR

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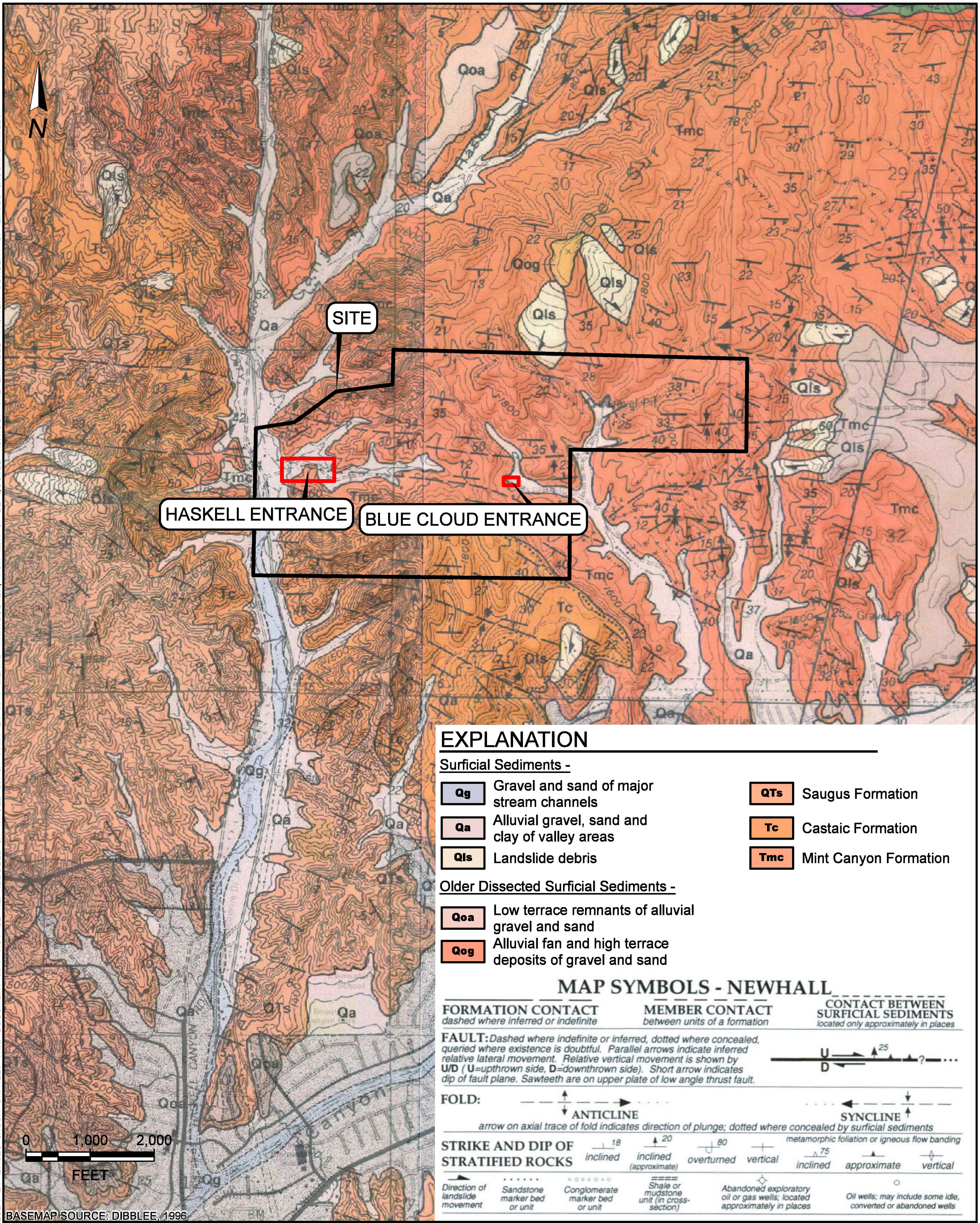
LAYOUT: 2B. SITE PLAN 8.5 X 11 LANDSCAPE USER: NCLOUGH



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GEOLOGIC MAP

BLUE CLOUD BIKE PARK

SANTA CLARITA, CALIFORNIA

PROJECT NO. : 26461.000.001	FIGURE NO. 3
SCALE: AS SHOWN	
DRAWN BY: NWC	CHECKED BY: JAM

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LAYOUT: 03. GEOLOGIC 8.5 X 11 PORTRAIT USER: NCLOUGH

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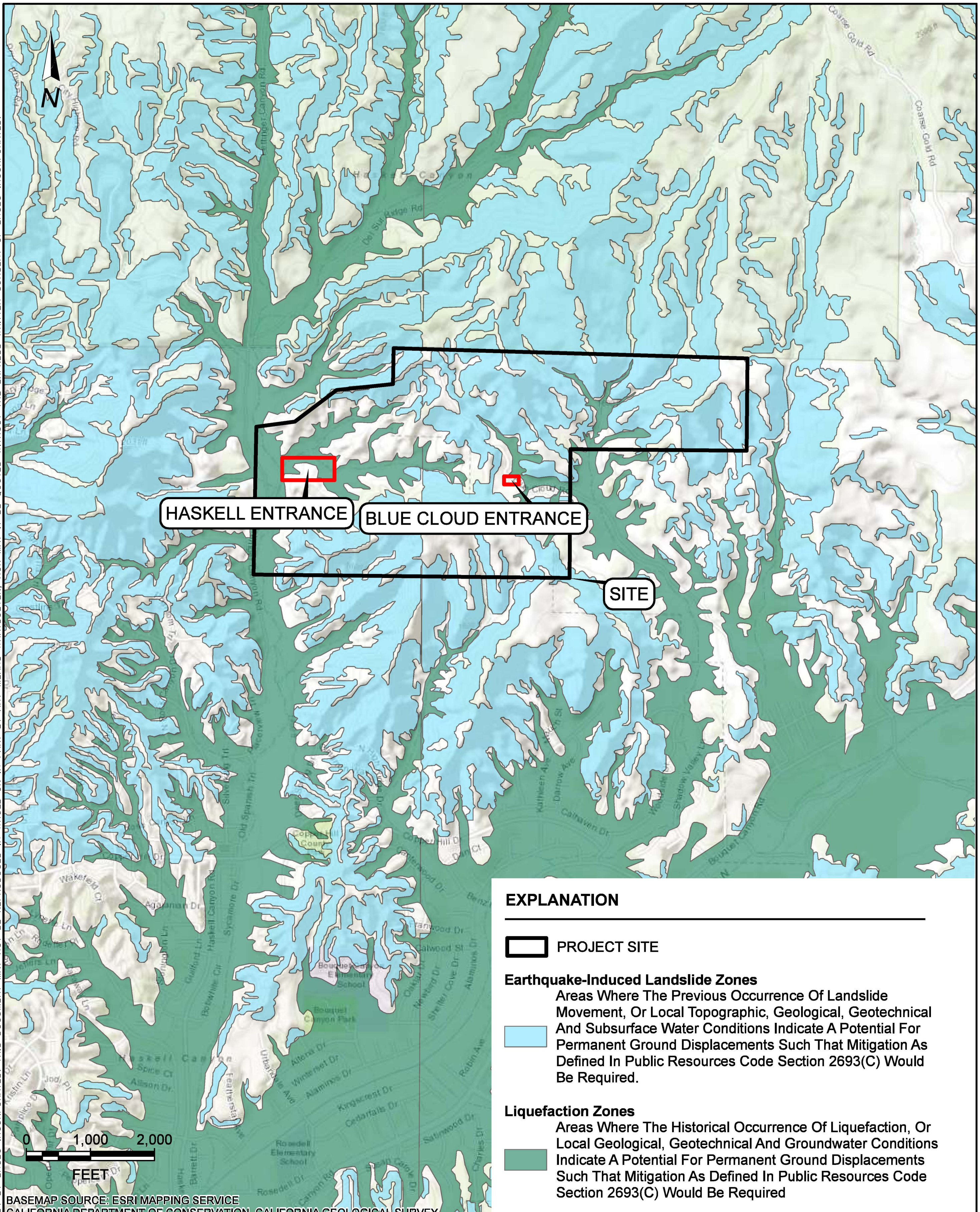

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SEISMIC HAZARD ZONE MAP
BLUE CLOUD BIKE PARK
SANTA CLARITA, CALIFORNIA

PROJECT NO. :	26461.000.001
SCALE:	AS SHOWN
DRAWN BY: NWC	CHECKED BY: JAM
FIGURE NO.	4

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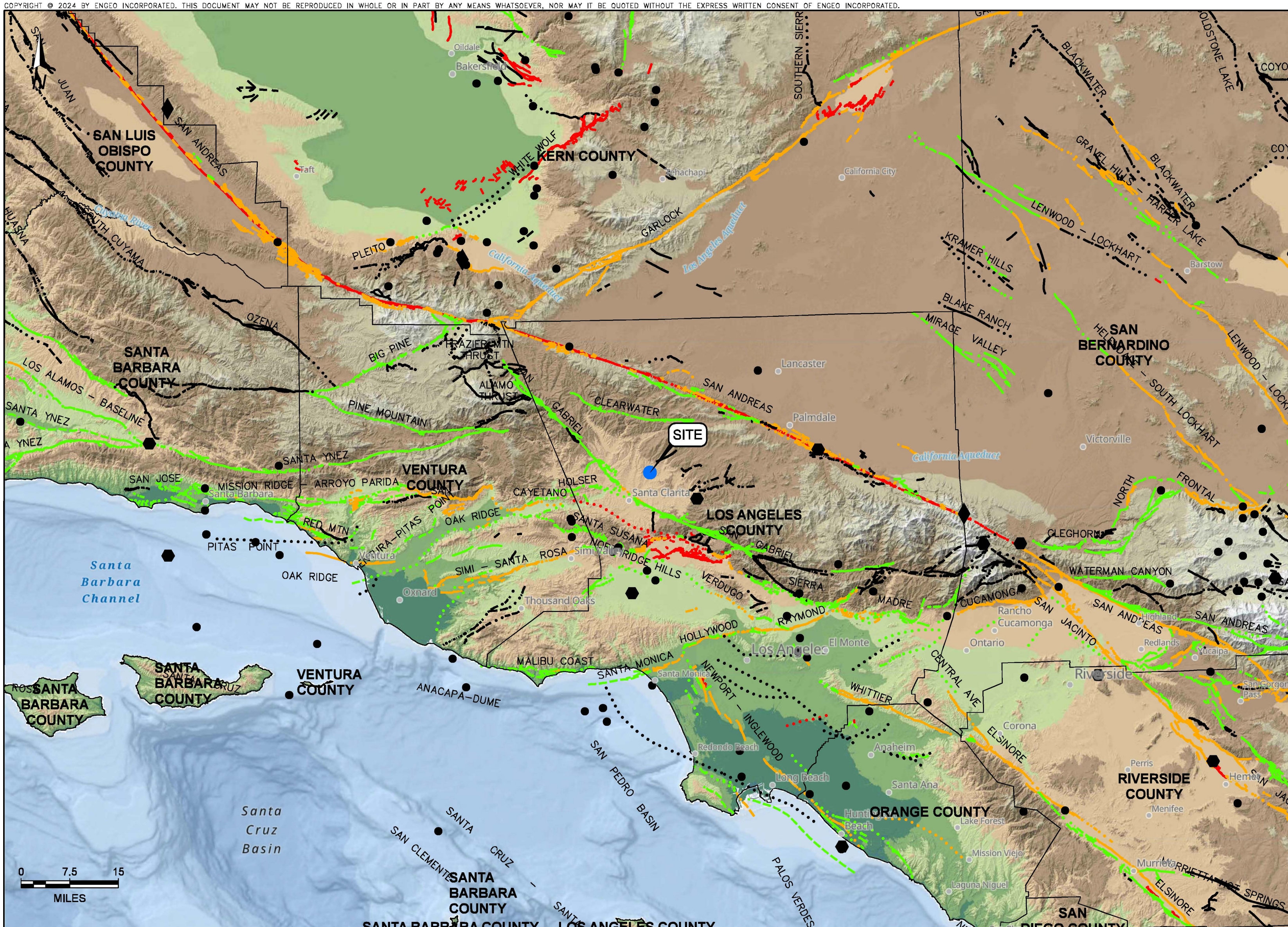
LAYOUT: 04. SEISMIC HAZARD ZONE MAP 8.5 X 11 PORTRAIT USER: NCLOUGH

ORIGINAL FIGURE PRINTED IN COLOR



EXPLANATION

- Project Site

HISTORIC EARTHQUAKE EPICENTERS

- Magnitude 5-6
- Magnitude 6-7
- Magnitude 7+
- Historic Blind Thrust Fault Zone

QUATERNARY FAULTS 2020

Based on time of most recent surface deformation

- Historical (<150 Years), Well Constrained Location
- Historical (<150 Years), Moderately Constrained Location
- Historical (<150 Years), Inferred Location
- Latest Quaternary (<15,000 Years), Well Constrained Location
- Latest Quaternary (<15,000 Years), Moderately Constrained Location
- Latest Quaternary (<15,000 Years), Inferred Location
- Latest Quaternary (<15,000 Years), Inferred Location
- Late Quaternary (<130,000 Years), Moderately Constrained Location
- Late Quaternary (<130,000 Years), Inferred Location
- Middle And Late Quaternary (<750,000 Years), Well Constrained Location
- Middle And Late Quaternary (<750,000 Years), Moderately Constrained Location
- Middle And Late Quaternary (<750,000 Years), Inferred Location
- Undifferentiated Quaternary(<1.6 Million Years), Well Constrained Location
- Undifferentiated Quaternary(<1.6 Million Years), Moderately Constrained Location
- Undifferentiated Quaternary(<1.6 Million Years), Inferred Location
- Class B (Various Age), Well Constrained Location
- Class B (Various Age), Moderately Constrained Location
- Class B (Various Age), Inferred Location

BASE MAP SOURCE:
CSUMB, ESRI, GARMIN, NATURALVUE, ESRI, GEBCO, GARMIN, NATURALVUE, COUNTY OF LOS ANGELES, CALIFORNIA STATE PARKS, ESRI, TOMTOM, GARMIN, SAFEGRAPH, GEOTECHNOLOGIES, INC, METI/NASA, USGS, BUREAU OF LAND MANAGEMENT, EPA, NPS, USDA, USFWS, COUNTY OF LOS ANGELES, CALIFORNIA STATE PARKS, ESRI, TOMTOM, GARMIN, SAFEGRAPH, FAO, METI/NASA, USGS, BUREAU OF LAND MANAGEMENT, EPA, NPS, USFWS
COLOR HILLSHADE IMAGE BASED ON THE NATIONAL ELEVATION DATA SET (NED) AT 30 METER RESOLUTION
U.S.G.S. QUATERNARY FAULT DATABASE, 2020
C.G.S. HISTORIC EARTHQUAKE DATABASE

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REGIONAL FAULTING AND SEISMICITY MAP	PROJECT NO. : 26461.000.001		FIGURE NO.
BLUE CLOUD BIKE PARK	SCALE: AS SHOWN		5
SANTA CLARITA, CALIFORNIA	DRAWN BY: NWC	CHECKED BY: JAM	

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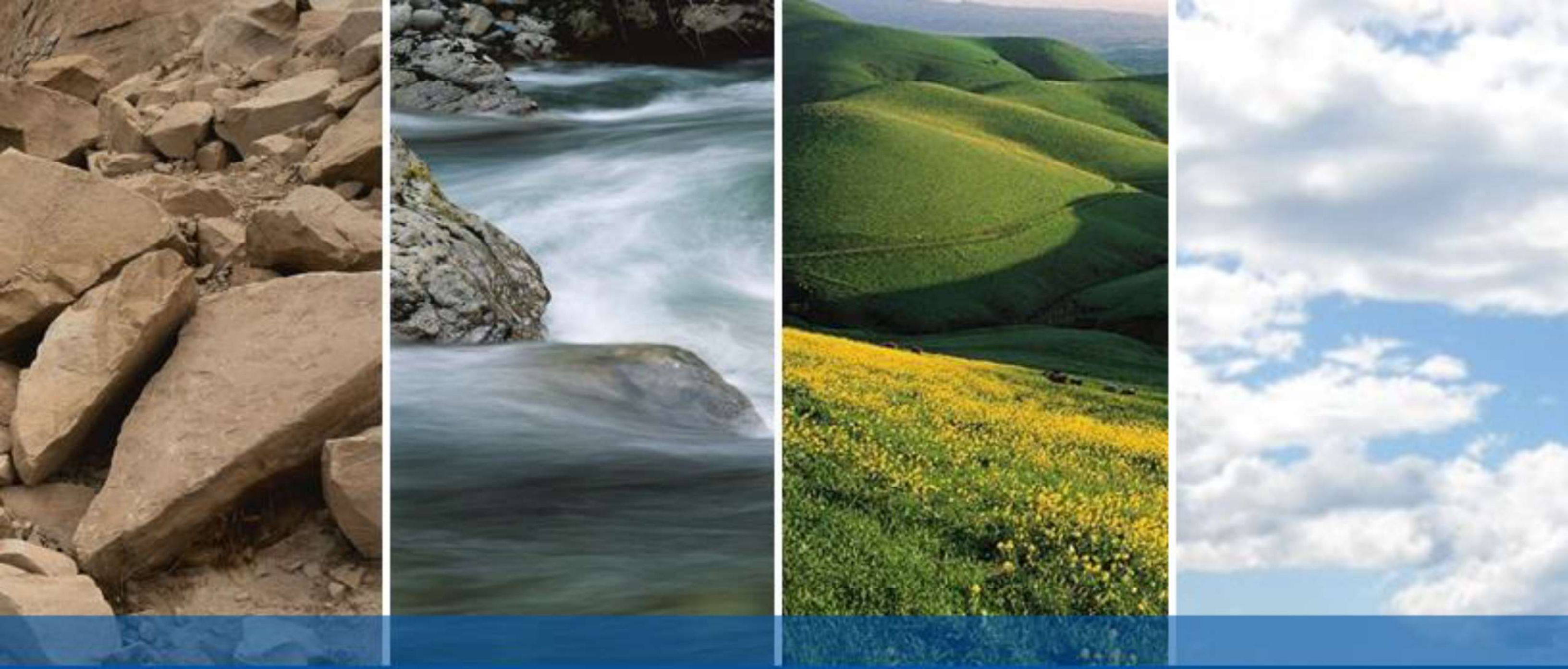

APPENDIX A

KEY TO BORING LOGS
EXPLORATION LOGS
(ENGEO, 2024)

KEY TO BORING LOGS

MAJOR TYPES			DESCRIPTION
COARSE-GRAINED SOILS MORE THAN HALF OF MAT'L LARGER THAN #200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW - Well graded gravels or gravel-sand mixtures
			GP - Poorly graded gravels or gravel-sand mixtures
		GRAVELS WITH OVER 12 % FINES	GM - Silty gravels, gravel-sand and silt mixtures
			GC - Clayey gravels, gravel-sand and clay mixtures
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW - Well graded sands, or gravelly sand mixtures
			SP - Poorly graded sands or gravelly sand mixtures
		SANDS WITH OVER 12 % FINES	SM - Silty sand, sand-silt mixtures
			SC - Clayey sand, sand-clay mixtures
FINE-GRAINED SOILS MORE THAN HALF OF MAT'L SMALLER THAN #200 SIEVE	SILTS AND CLAYS LIQUID LIMITS 50% OR LESS		ML - Inorganic silt with low to medium plasticity
			CL - Inorganic clay with low to medium plasticity
			OL - Low plasticity organic silts and clays
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH - Inorganic silt with high plasticity
			CH - Inorganic clay with high plasticity
			OH - Highly plastic organic silts and clays
	HIGHLY ORGANIC SOILS		PT - Peat and other highly organic soils

GRAIN SIZES

U.S. STANDARD SERIES SIEVE SIZE: 200, 40, 10, 4
CLEAR SQUARE SIEVE OPENINGS: 3/4 ", 3", 12"

SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

RELATIVE DENSITY

SANDS AND GRAVELS	BLOWS/FOOT (S.P.T.)[1]
VERY LOOSE	0-4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	OVER 50

CONSISTENCY

SILTS AND CLAYS	APPROXIMATE SHEAR STRENGTH (PSF)[2]
VERY SOFT	0-250
SOFT	250-500
MEDIUM STIFF	500-1,000
STIFF	1,000-2,000
VERY STIFF	2,000-4,000
HARD	> 4,000

MOISTURE CONDITION

DRY	Absence of moisture, dusty, dry to touch
MOIST	Damp but no visible water
WET	Visible freewater

LINE TYPES

Solid - Layer Break

Dashed - Gradational or approximate layer break

SAMPLER SYMBOLS

- Modified California (3-inch O.D.) Sampler
- California (2.5-inch O.D.) Sampler
- S.P.T. Split Spoon (2-inch O.D.) Sampler
- Shelby Tube
- Continuous Core
- Bag Samples
- Grab Samples
- No Recovery

GROUND-WATER SYMBOLS

- Groundwater level during drilling
- Stabilized groundwater level

NOTES

1. Standard Penetration Tests (S.P.T.) number of blows for a 140-pound hammer falling 30 inches to drive a 2-inch O.D. (1-3/8-inch I.D.) sampler, assuming 60% hammer efficiency
2. Approximate shear strength measured in field at time of drilling in units of pounds per square foot

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SOIL BORING 1-B1

LATITUDE: 34.476006 LONGITUDE: -118.496294

Blue Cloud Bike Park
Santa Clarita, California
26461.000.001

DATE DRILLED: 10/09/2024
HOLE DEPTH: 9.5 ft
HOLE DIAMETER: 8 in
SURFACE ELEV.: 1607 ft (WGS84)

LOGGED BY / REVIEWED BY: BJC / THZ
DRILLING CONTRACTOR: Martini Drilling
DRILLING METHOD: Hollow Stem Auger
HAMMER TYPE: 140 lb. Auto Trip

Depth (ft)	Elevation (ft)	Sample Graphic	Visual Classification and Remarks	Graphic Log	Water Levels	Uncorrected N-Value	Atterberg Limits (LL-PL-PI)	Fines (%)	Moisture Content (%)	Dry Density (pcf)	Shear Strength (psf)	Compressive Strength (psf)	Pocket Penetrometer (tsf)	Torvane (psf)
	1605		**SILT (ML)**, light gray, very stiff, dry, medium plasticity, fine-grained sand, trace subrounded fine gravel											
						19	36-26-10	73.1	9.4					
						41								
5			**LEAN CLAY (CL)**, brown, hard, moist, medium plasticity, trace fine-grained sand, trace subrounded fine gravel						13.8	115.5	3969	7939	>4.5	
	1600		decrease in subrounded fine gravel, Fe staining			20		92						
			CLAYEY SAND (SC), light gray, very dense, moist, fine-grained sand			50/5								
10			End of boring at 9½ feet below ground surface. No groundwater encountered at the time of drilling.											

SOIL BORING 1-B2

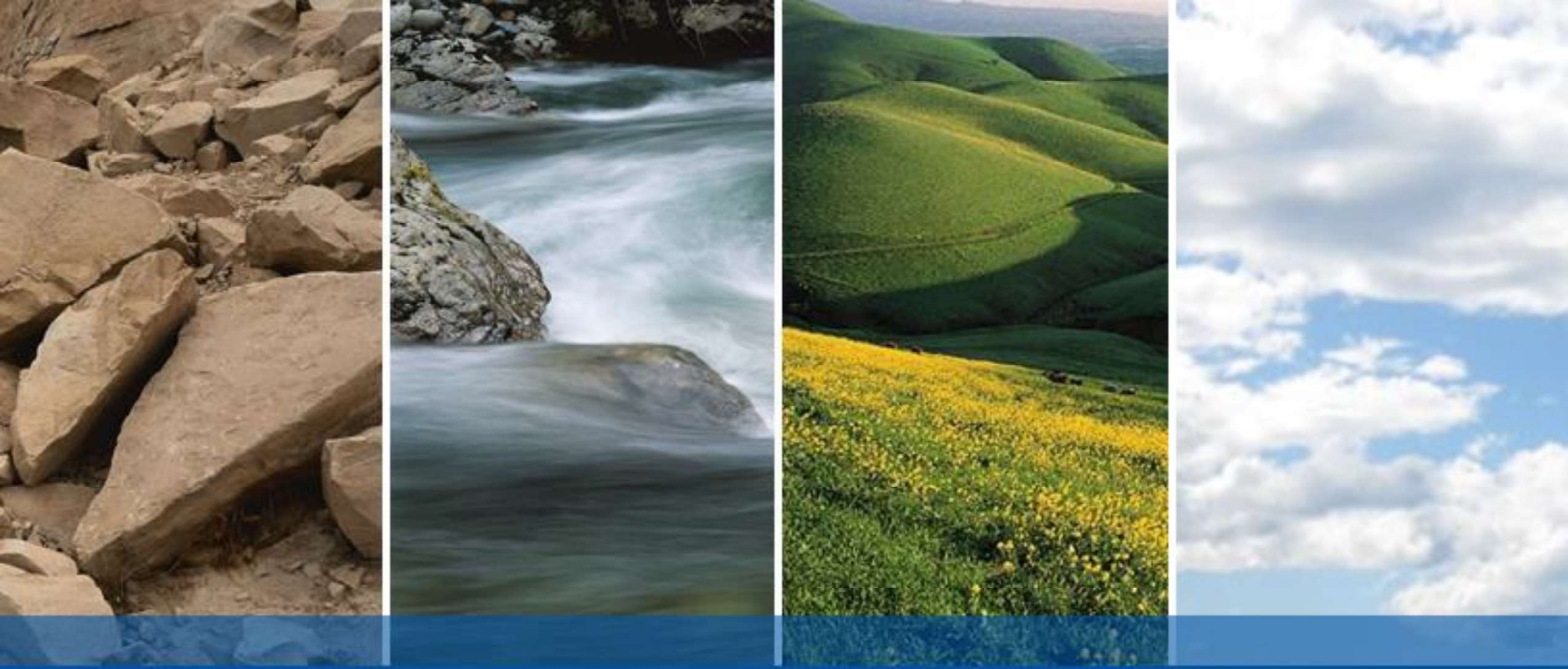
LATITUDE: 34.476121 LONGITUDE: -118.505945

Blue Cloud Bike Park
Santa Clarita, California
26461.000.001

DATE DRILLED: 10/09/2024
HOLE DEPTH: 9.5 ft
HOLE DIAMETER: 8 in
SURFACE ELEV.: 1488 ft (WGS84)

LOGGED BY / REVIEWED BY: BJC / THZ
DRILLING CONTRACTOR: Martini Drilling
DRILLING METHOD: Hollow Stem Auger
HAMMER TYPE: 140 lb. Auto Trip

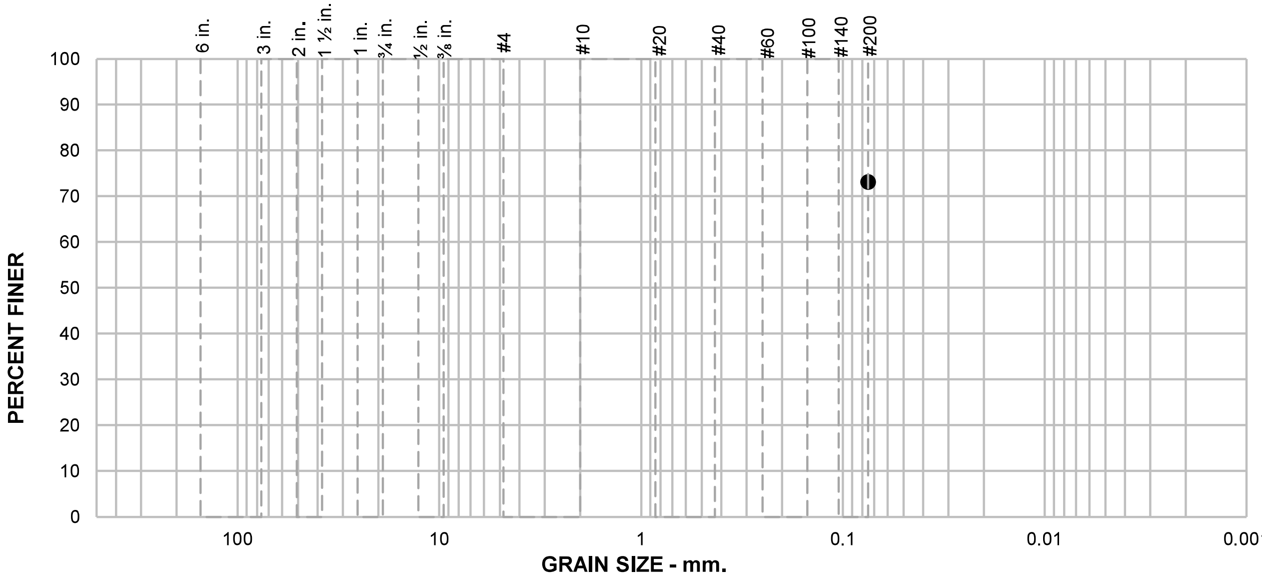
Depth (ft)	Elevation (ft)	Sample Graphic	Visual Classification and Remarks	Graphic Log	Water Levels	Uncorrected N-Value	Atterberg Limits (LL-PL-PI)	Fines (%)	Moisture Content (%)	Dry Density (pcf)	Shear Strength (psf)	Compressive Strength (psf)	Pocket Penetrometer (tsf)	Torvane (psf)
			SANDY LEAN CLAY (**CL**), brown, very stiff, dry, medium plasticity, fine- to medium-grained sand											
	1485					26	35-19-16	59	7.7					
5			**LEAN CLAY WITH SAND** (**CL**), brown, stiff, dry, medium plasticity, fine- to medium-grained sand			28		71	10.2					
			SANDY LEAN CLAY (**CL**), brown, stiff, dry to moist, medium plasticity, fine-grained sand			11		70	9.0	96.5				
	1480					34							>4.5	
10			End of boring at 9½ feet below ground surface. No groundwater encountered at the time of drilling.											



APPENDIX B

LABORATORY TEST DATA
(ENGEO, 2024)

PARTICLE SIZE DISTRIBUTION REPORT
ASTM D1140, Method A



SAMPLE ID: 1-B1@2-3.5

DEPTH (ft): 2-3.5

LOCATION: 1-B1

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
						73.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	73.1		

SOIL DESCRIPTION

See Exploration Logs

ATTERBERG LIMITS

PL = 26	LL = 36	PI = 10

COEFFICIENTS

D_{90} =	D_{85} =	D_{60} =
D_{50} =	D_{30} =	D_{15} =
D_{10} =	C_u =	C_c =

CLASSIFICATION

USCS = ML

REMARKS

PI: ASTM D4318, Wet Method

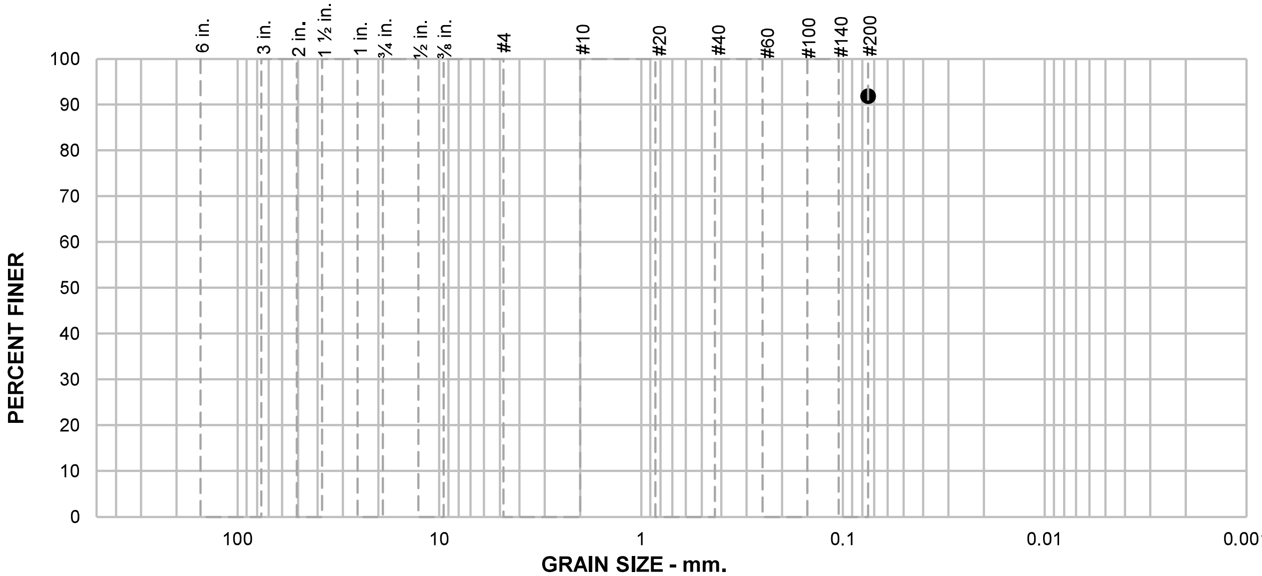
Soak time = 180 min
Dry sample weight = 137.6 g
Largest particle size < No. 4 Sieve

* (no specification provided)

ENGEO
Expect Excellence

CLIENT: Hunsaker & Associates
PROJECT NAME: Santa Clarita Blue Cloud Bike Park
PROJECT NO: 26461.000.001 PH001
PROJECT LOCATION: Santa Clarita, CA
REPORT DATE: 10/21/2024
TESTED BY: K. Paul
REVIEWED BY: K. Lecce

PARTICLE SIZE DISTRIBUTION REPORT
ASTM D1140, Method A



SAMPLE ID: 1-B1@6-7.5
DEPTH (ft): 6-7.5
LOCATION: 1-B1

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
						92	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	92		

SOIL DESCRIPTION
See Exploration Logs

ATTERBERG LIMITS
PL = LL = PI =

COEFFICIENTS

D_{90} =	D_{85} =	D_{60} =
D_{50} =	D_{30} =	D_{15} =
D_{10} =	C_u =	C_c =

CLASSIFICATION
USCS =

REMARKS
Soak time = 180 min
Dry sample weight = 233.6 g
Largest particle size ≥ No. 4 Sieve

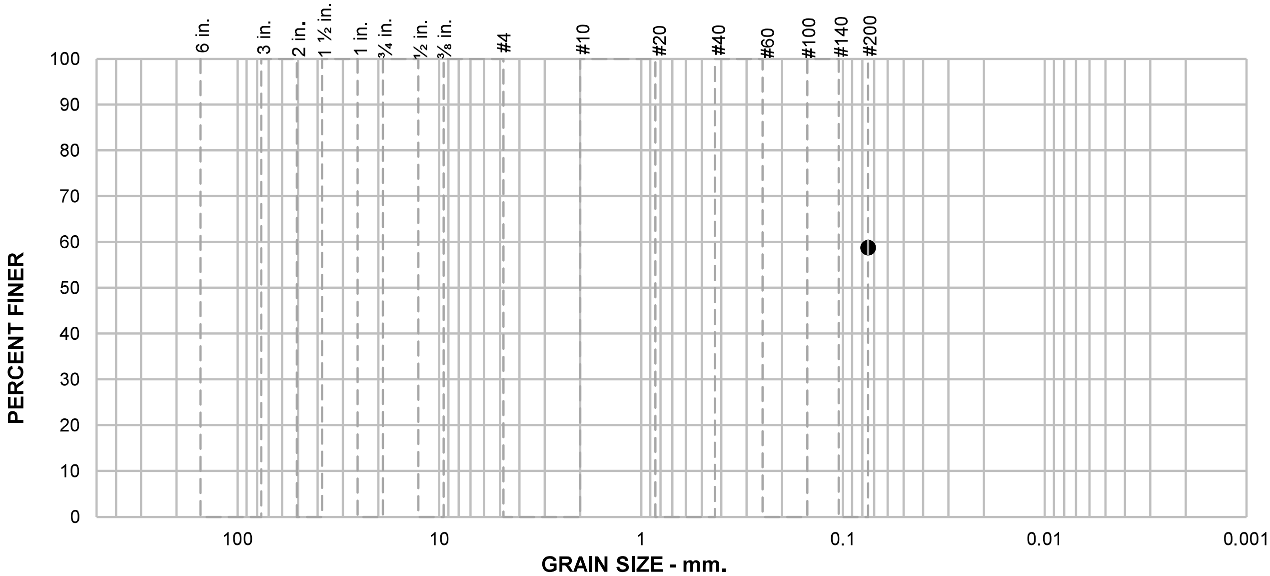
* (no specification provided)

ENGEO
Expect Excellence

CLIENT: Hunsaker & Associates
PROJECT NAME: Santa Clarita Blue Cloud Bike Park
PROJECT NO: 26461.000.001 PH001
PROJECT LOCATION: Santa Clarita, CA
REPORT DATE: 10/21/2024
TESTED BY: K. Paul
REVIEWED BY: K. Lecce

PARTICLE SIZE DISTRIBUTION REPORT

ASTM D1140, Method A



SAMPLE ID: 1-B2@2-3.5

DEPTH (ft): 2-3.5

LOCATION: 1-B2

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
						59	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	59		

SOIL DESCRIPTION

See Exploration Logs

ATTERBERG LIMITS

PL = 19	LL = 35	PI = 16

COEFFICIENTS

D_{90} =	D_{85} =	D_{60} =
D_{50} =	D_{30} =	D_{15} =
D_{10} =	C_u =	C_c =

CLASSIFICATION

USCS = CL

REMARKS

PI: ASTM D4318, Wet Method

Soak time = 180 min
Dry sample weight = 187 g
Largest particle size ≥ No. 4 Sieve

* (no specification provided)

CLIENT: Hunsaker & Associates

PROJECT NAME: Santa Clarita Blue Cloud Bike Park

PROJECT NO: 26461.000.001 PH001

PROJECT LOCATION: Santa Clarita, CA

REPORT DATE: 10/21/2024

TESTED BY: K. Paul

REVIEWED BY: K. Lecce

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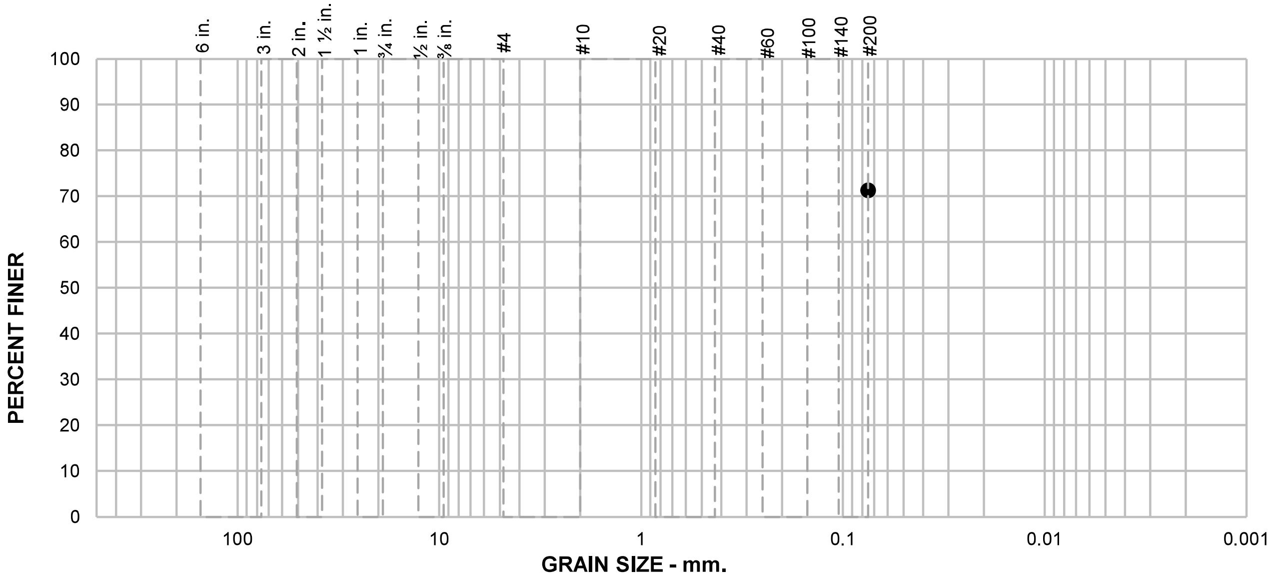
PARTICLE SIZE DISTRIBUTION REPORT

ASTM D1140, Method A



SAMPLE ID: 1-B2@5-5.5

DEPTH (ft): 5-5.5

LOCATION: 1-B2

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
						71	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	71		

SOIL DESCRIPTION

See Exploration Logs

ATTERBERG LIMITS

PL = LL = PI =

COEFFICIENTS

D_{90} = D_{85} = D_{60} =

D_{50} = D_{30} = D_{15} =

D_{10} = C_u = C_c =

CLASSIFICATION

USCS =

REMARKS

Soak time = 180 min
Dry sample weight = 520.8 g
Largest particle size ≥ No. 4 Sieve

* (no specification provided)

CLIENT: Hunsaker & Associates

PROJECT NAME: Santa Clarita Blue Cloud Bike Park

PROJECT NO: 26461.000.001 PH001

PROJECT LOCATION: Santa Clarita, CA

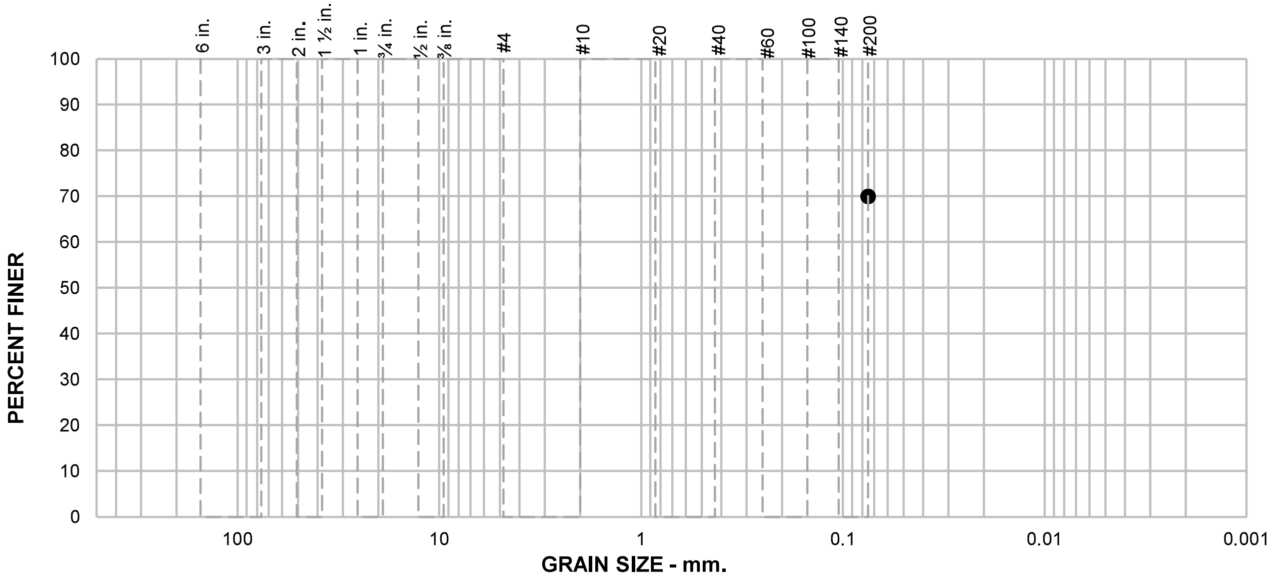
REPORT DATE: 10/21/2024

TESTED BY: K. Paul

REVIEWED BY: K. Lecce

ENGEO — Expect Excellence —

PARTICLE SIZE DISTRIBUTION REPORT
ASTM D1140, Method A



SAMPLE ID: 1-B2@6-7.5

DEPTH (ft): 6-7.5

LOCATION: 1-B2

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
						70	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	70		

SOIL DESCRIPTION

See Exploration Logs

ATTERBERG LIMITS

PL =	LL =	PI =

COEFFICIENTS

D_{90} =	D_{85} =	D_{60} =
D_{50} =	D_{30} =	D_{15} =
D_{10} =	C_u =	C_c =

CLASSIFICATION

USCS =

REMARKS

Soak time = 180 min
Dry sample weight = 394 g
Largest particle size ≥ No. 4 Sieve

* (no specification provided)

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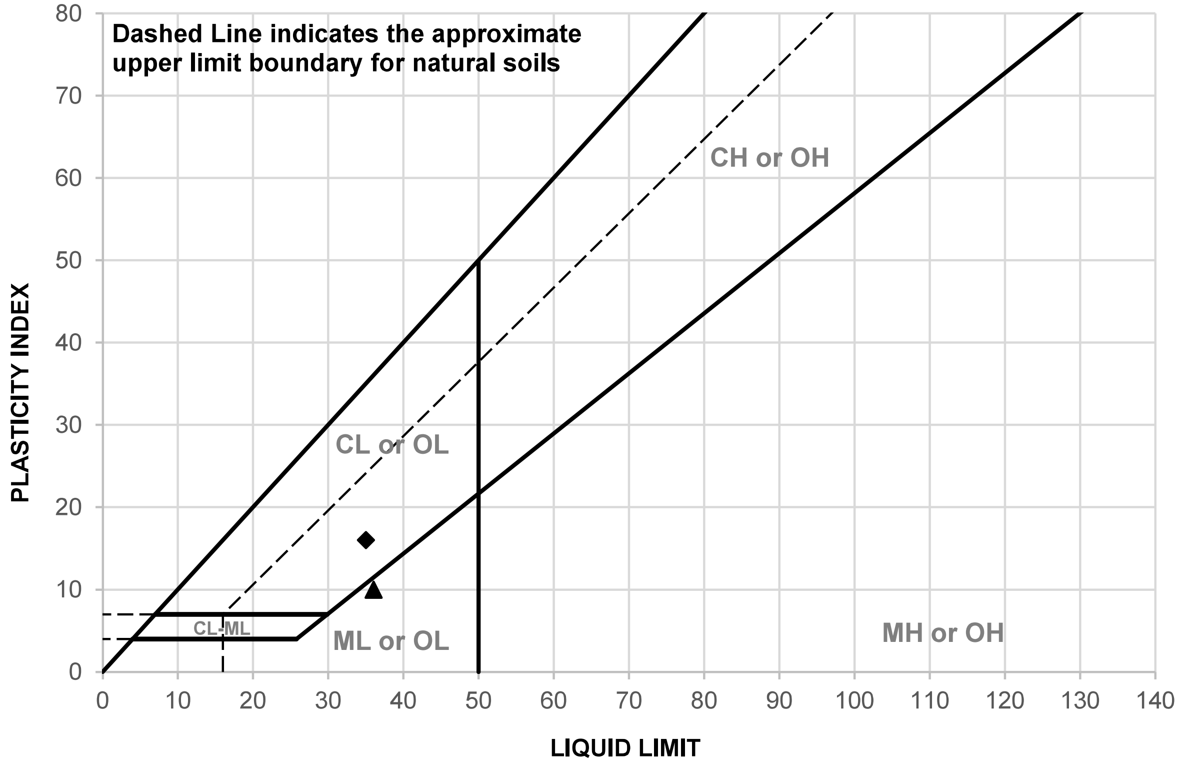
CLIENT: Hunsaker & Associates
PROJECT NAME: Santa Clarita Blue Cloud Bike Park
PROJECT NO: 26461.000.001 PH001
PROJECT LOCATION: Santa Clarita, CA
REPORT DATE: 10/21/2024
TESTED BY: K. Paul
REVIEWED BY: K. Lecce

LIQUID AND PLASTIC LIMITS TEST REPORT
ASTM D4318



	SAMPLE ID	DEPTH (ft)	MATERIAL DESCRIPTION	LL	PL	PI
▲	1-B1	2-3.5	See Exploration Logs	36	26	10
◆	1-B2	2-3.5	See Exploration Logs	35	19	16

	SAMPLE ID	TEST METHOD	REMARKS
▲	1-B1	PI: ASTM D4318, Wet Method	
◆	1-B2	PI: ASTM D4318, Wet Method	

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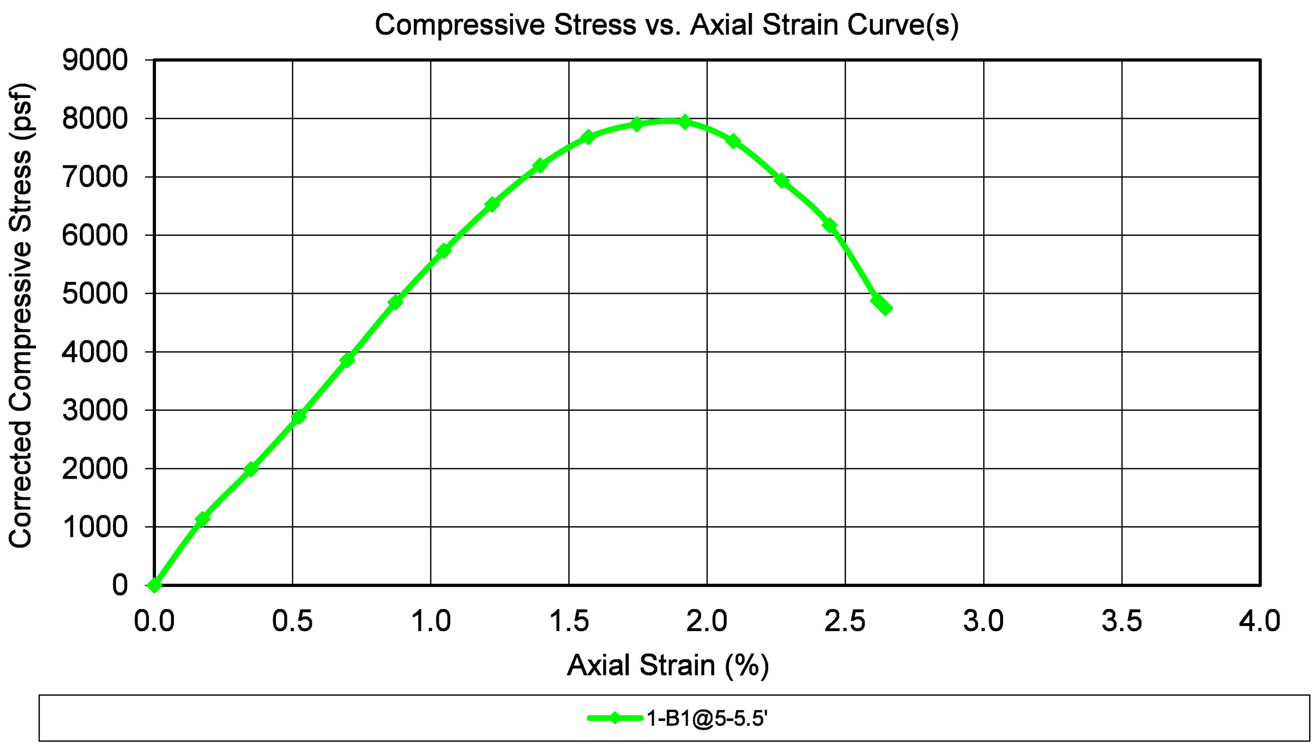
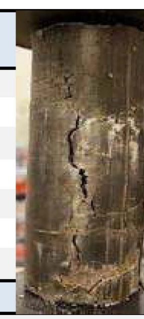
CLIENT: Hunsaker & Associates
PROJECT NAME: Santa Clarita Blue Cloud Bike Park
PROJECT NO: 26461.000.001 PH001
PROJECT LOCATION: Santa Clarita, CA
REPORT DATE: 10/21/2024
TESTED BY: K. Paul
REVIEWED BY: K. Lecce

UNCONFINED COMPRESSION TEST REPORT
(ASTM D2166)





BEFORE TEST	1-B1@5-5.5'
Test Moisture Content (%)	13.77
Dry Density (pcf)	115.5
Saturation (%)	79.6
Void Ratio	0.47
Diameter (in)	2.400
Height (in)	5.730
Height-To-Diameter Ratio	2.39
TEST DATA	
Unconfined Compressive Strength (psf)	7939
Undrained Shear Strength (psf)	3969
Strain Rate (in/min)	0.050
Specific Gravity (ASSUMED)	2.720
Strain at Failure(%)	1.92
Test Remarks	

SPECIMEN	DESCRIPTION
1-B1@5-5.5'	See Exploration Logs

PROJECT NAME:	Santa Clarita Blue Cloud Bike Park	**Test Date:**	10/21/2024
PROJECT NO:	26461.000.001 PH001	**Tested By:**	K. Paul
CLIENT:	Hunsaker & Associates	**Reviewed By:**	K. Lecce
LOCATION:	Santa Clarita, CA		

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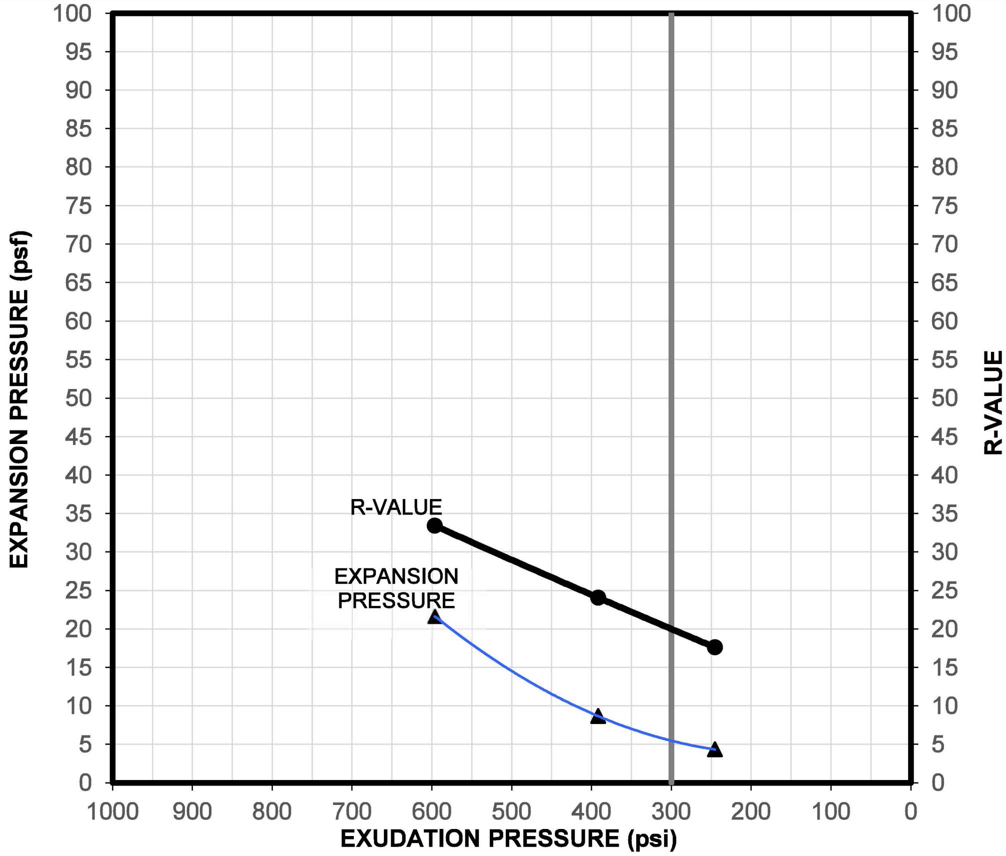
R-VALUE TEST REPORT

CTM 301



SAMPLE ID	MATERIAL DESCRIPTION	SAMPLE LOCATION		
RV-01	Very dark grayish brown silty CLAY	N/A		
SPECIMENS		**1**	**2**	**3**
EXUDATION PRESSURE (psi)		596	392	246
EXPANSION PRESSURE (psf)		22	9	4
R-VALUE		33	24	18
MOISTURE CONTENT (%)		14.5	15.4	16.2
DRY DENSITY (pcf)		121.3	117.6	118.8
EXPANSION PRESSURE (psf) AT EXUDATION PRESSURE OF 300 psi			5	
R-VALUE AT EXUDATION PRESSURE OF 300 psi			**TEST RESULT**	
			20	

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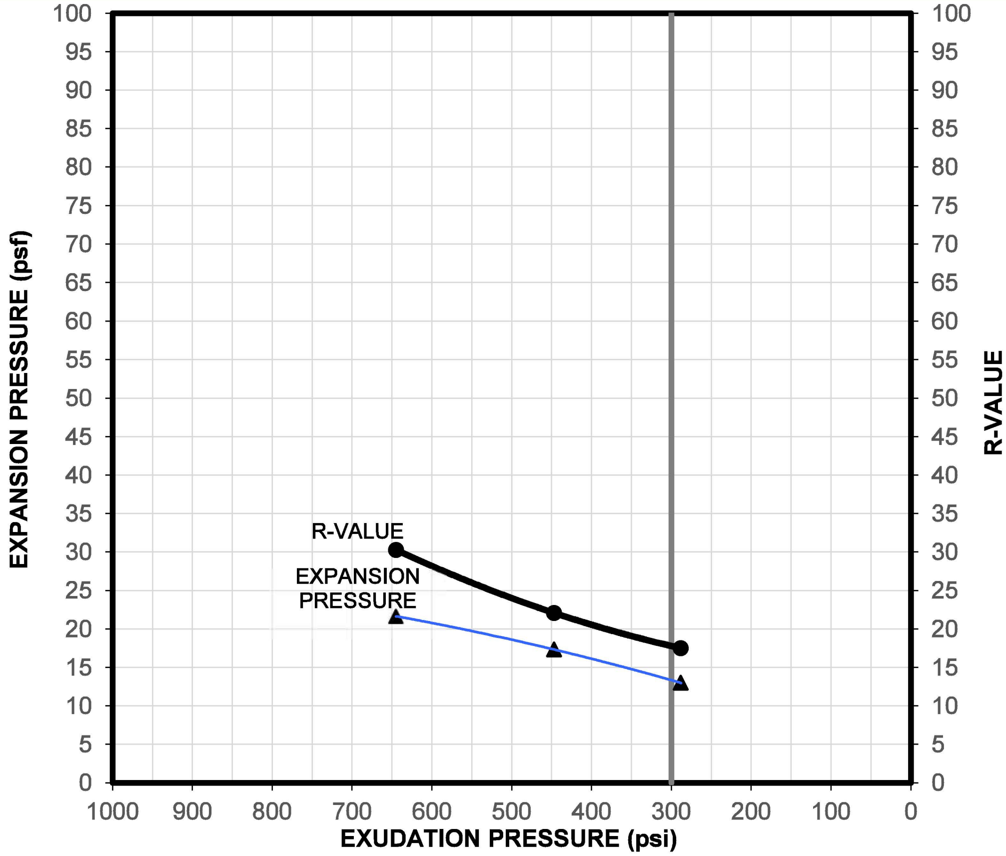
CLIENT: Hunsaker and Associates
PROJECT NAME: Santa Clarita Blue Cloud Bike Park
PROJECT NO: 26461.000.001 PH001
PROJECT LOCATION: Santa Clarita, CA
REPORT DATE: 10/15/2024
TESTED BY: K. Paul
REVIEWED BY: K. Lecce

R-VALUE TEST REPORT

CTM 301



SAMPLE ID	MATERIAL DESCRIPTION	SAMPLE LOCATION
RV-02	Very dark grayish brown silty CLAY	N/A

SPECIMENS	1	2	3
EXUDATION PRESSURE (psi)	645	447	288
EXPANSION PRESSURE (psf)	22	17	13
R-VALUE	30	22	18
MOISTURE CONTENT (%)	14.5	15.3	16.1
DRY DENSITY (pcf)	116.7	118.1	116.6
EXPANSION PRESSURE (psf) AT EXUDATION PRESSURE OF 300 psi		13	

	TEST RESULT
R-VALUE AT EXUDATION PRESSURE OF 300 psi	**18**

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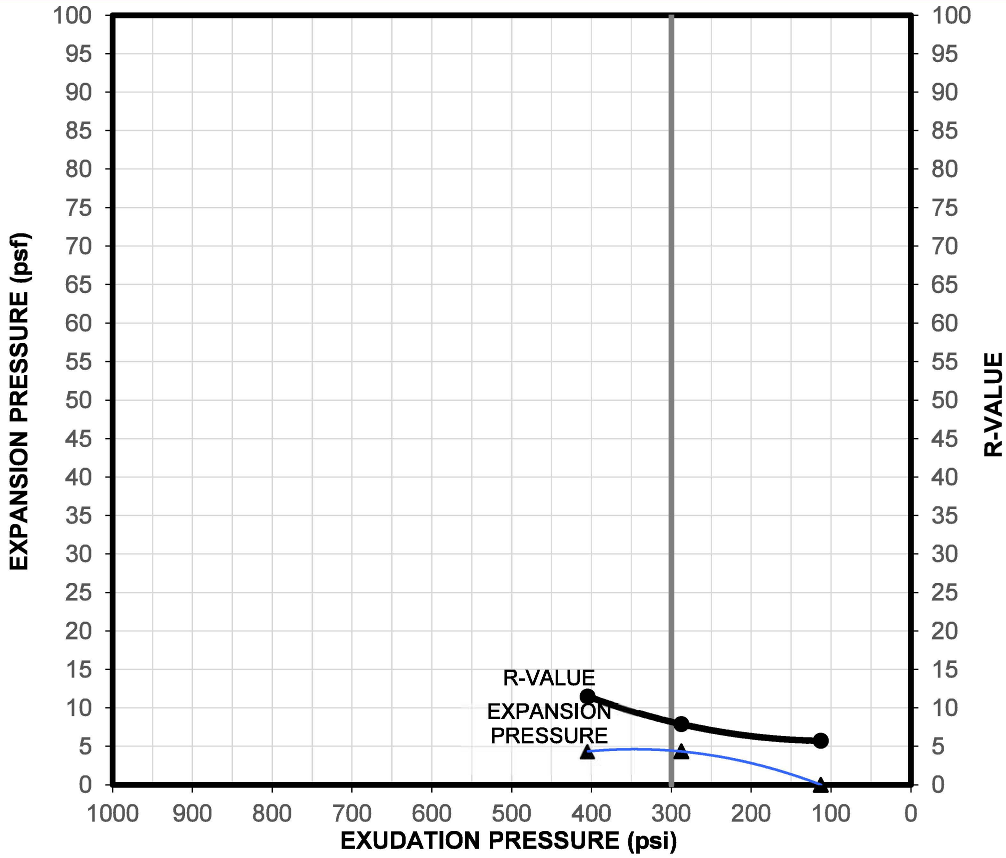
CLIENT: Hunsaker and Associates
PROJECT NAME: Santa Clarita Blue Cloud Bike Park
PROJECT NO: 26461.000.001 PH001
PROJECT LOCATION: Santa Clarita, CA
REPORT DATE: 10/15/2024
TESTED BY: K. Paul
REVIEWED BY: K. Lecce

R-VALUE TEST REPORT

CTM 301



SAMPLE ID	MATERIAL DESCRIPTION	SAMPLE LOCATION
RV-03	Very dark grayish brown clayey SILT	N/A

SPECIMENS	1	2	3
EXUDATION PRESSURE (psi)	405	288	113
EXPANSION PRESSURE (psf)	4	4	0
R-VALUE	11	8	6
MOISTURE CONTENT (%)	15.5	16.4	17.3
DRY DENSITY (pcf)	119.2	118.2	116.7
EXPANSION PRESSURE (psf) AT EXUDATION PRESSURE OF 300 psi		4	

	TEST RESULT
R-VALUE AT EXUDATION PRESSURE OF 300 psi	**8**

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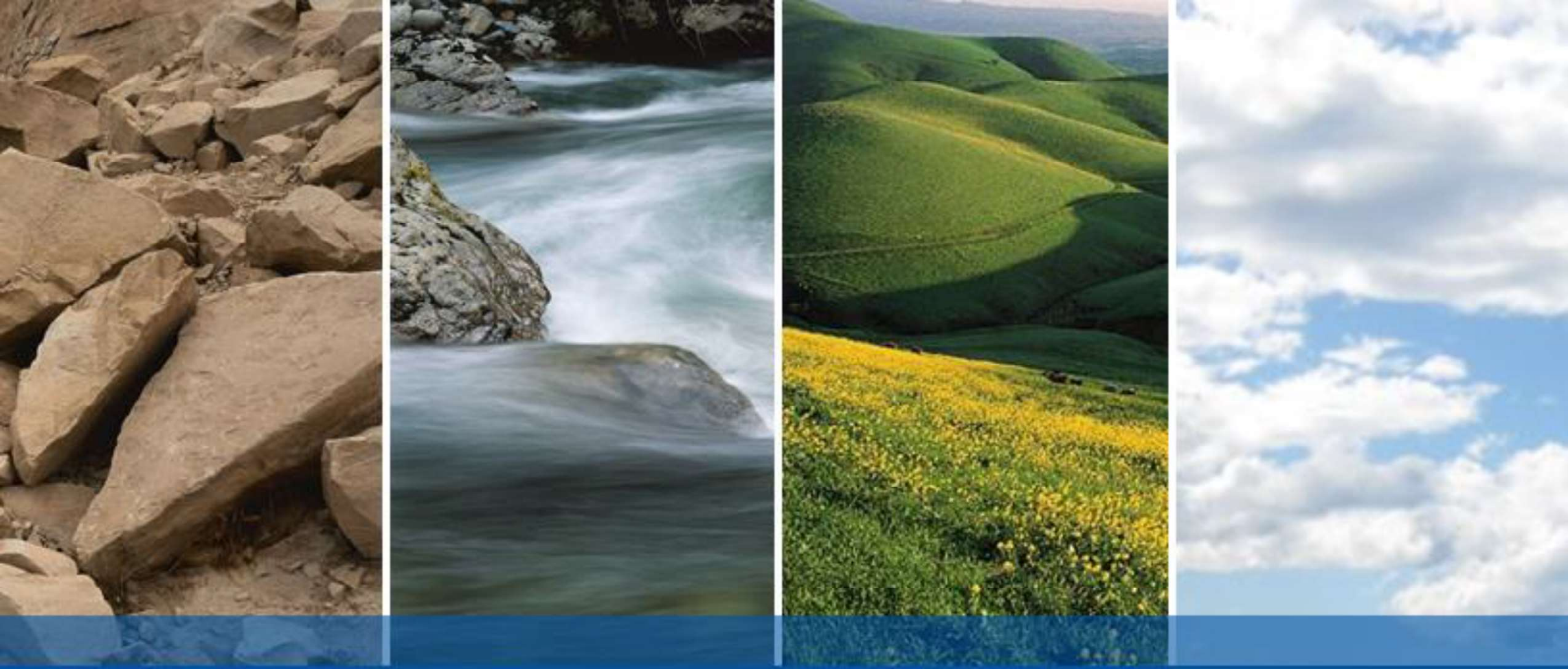
CLIENT: Hunsaker and Associates
PROJECT NAME: Santa Clarita Blue Cloud Bike Park
PROJECT NO: 26461.000.001 PH001
PROJECT LOCATION: Santa Clarita, CA
REPORT DATE: 10/16/2024
TESTED BY: K. Paul
REVIEWED BY: K. Lecce



APPENDIX C

LABORATORY TEST DATA
(CERCO, 2024)

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

21 October, 2024

Job No. 2410041
Cust. No. 13174

Ms. Tania Zakaria
ENGEO Inc.
27742 Hancock Parkway
Valencia, CA 91355

Subject: Project No.: 26309.000.001
Project Name: Blue Cloud Bike Park
Corrosivity Analysis – ASTM Test Methods

Dear Ms. Zakaria:

Pursuant to your request, CERCO Analytical has analyzed the soil samples submitted on October 15, 2024. Based on the analytical results, this brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurements, both samples are classified as "corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentrations are none detected and 21 mg/kg and are determined to be insufficient to attack steel embedded in a concrete mortar coating.

The sulfate ion concentrations are 21 mg/kg and 110 mg/kg and are determined to be insufficient to damage reinforced concrete structures and cement mortar-coated steel at these locations.

The pH of the soils are 8.25 and 7.28, which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potentials are 120-mV and 190-mV. Both samples are indicative of potentially "moderately corrosive" soils resulting from anaerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc. at (925) 927-6630.*

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.

for

J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

Client:	ENGEO, Incorporated
Client's Project No.:	26309.000.001
Client's Project Name:	Blue Cloud Bike Park
Date Sampled:	9-Oct-24
Date Received:	15-Oct-24
Matrix:	Soil
Authorization:	Chain of Custody

Date of Report: 21-Oct-2024

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Conductivity (umhos/cm)*	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
2410041-001	RV-1 @ 1'	190	8.25	-	600	-	N.D.	110
2410041-002	RV-2 @ 1'	120	7.28	-	1,500	-	21	21

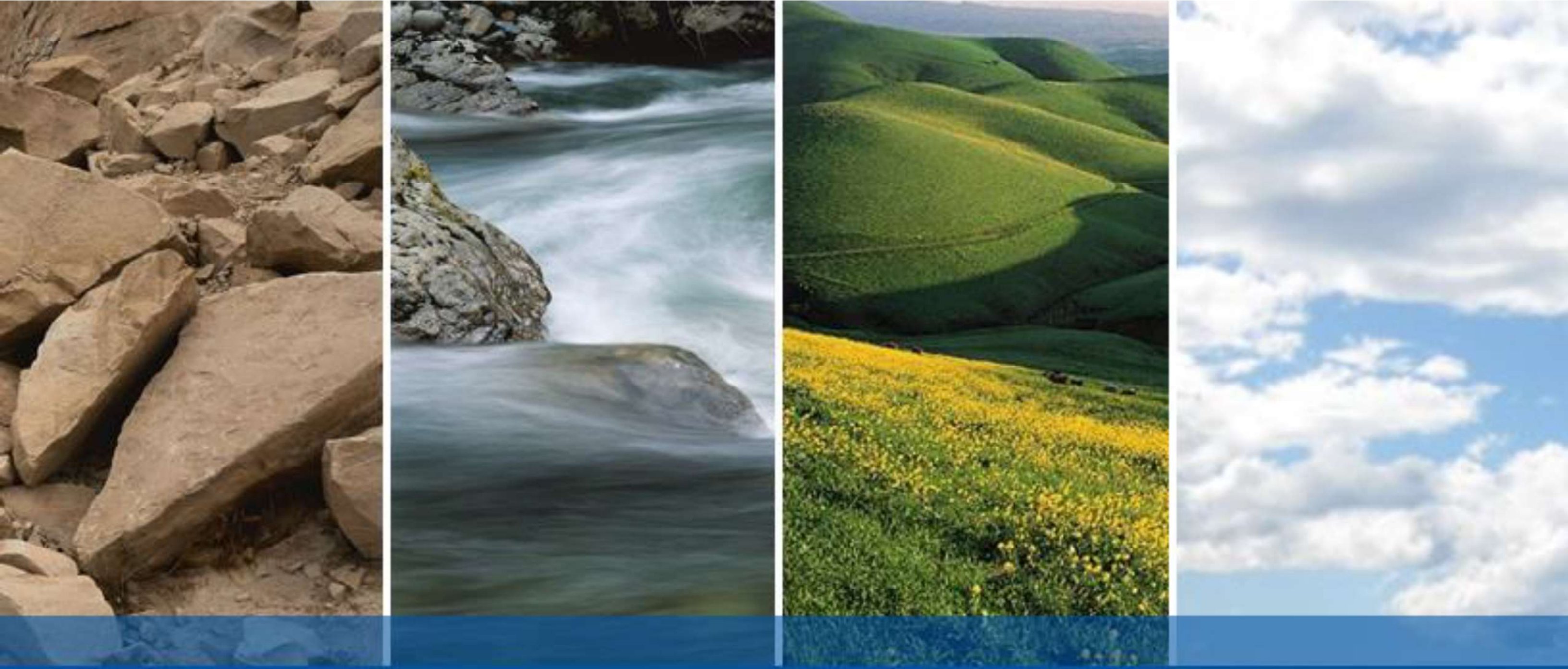
Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Reporting Limit:	-	-	-	-	-	15	15
Date Analyzed:	16-Oct-2024	16-Oct-2024	-	17-Oct-2024	-	16-Oct-2024	16-Oct-2024

Julia Clauson
Chemist

* Results Reported on "As Received" Basis

N.D. - None Detected

Quality Control Summary - All laboratory quality control parameters were found to be within established limits



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APPENDIX F:
HYDROLOGY STUDY

Hydrology Study
for
Blue Cloud Bike Park

City of Santa Clarita

Hunsaker Project No: 0317-001-001
November 15, 2024

Prepared for:

City of Santa Clarita
23920 Valencia Blvd. Suite 270
Santa Clarita, CA, 91355-2196

Prepared by:

Eumir Ruanto, PE/QSD
Hunsaker and Associates, LA Inc.
26074 Avenue Hall, Suite 23
Valencia, CA 91355
Telephone: (661) 294-2211 Fax: (661) 294-9890

Under the supervision of:

REGISTERED PROFESSIONAL ENGINEER
JASON H. FUKUMITSU
No. 40695
CIVIL
STATE OF CALIFORNIA

Jason H. Fukumitsu Date

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Report Summary

The purpose of this report is to present the hydrology design and analysis for Blue Cloud Bike Park. The report analyzes existing and proposed development conditions for the Design 2-year clear storm which will serve as the criteria for the design of onsite storm drain drainage devices; the rest of other storm frequencies are also provided as references namely: 50-yr burned & bulked, Clear Frequencies (50, 25, 10, 5 and LID 85th Percentile).

A 24-Hour storm analysis based upon the Los Angeles County Rational and Modified Rational Methods of Hydrology was used for clear, burned, and burned and bulked conditions for the project watershed.

This report is divided into several sections. Section 1 contains the introduction; Section 2 discusses the methodology used in the hydrologic analysis; Section 3 summarizes the design criteria used; Section 4 includes the conclusions and recommendations of this report; Section 5 includes the references, and Section 6 includes the compilation of the calculations and other data/information supporting the analysis.

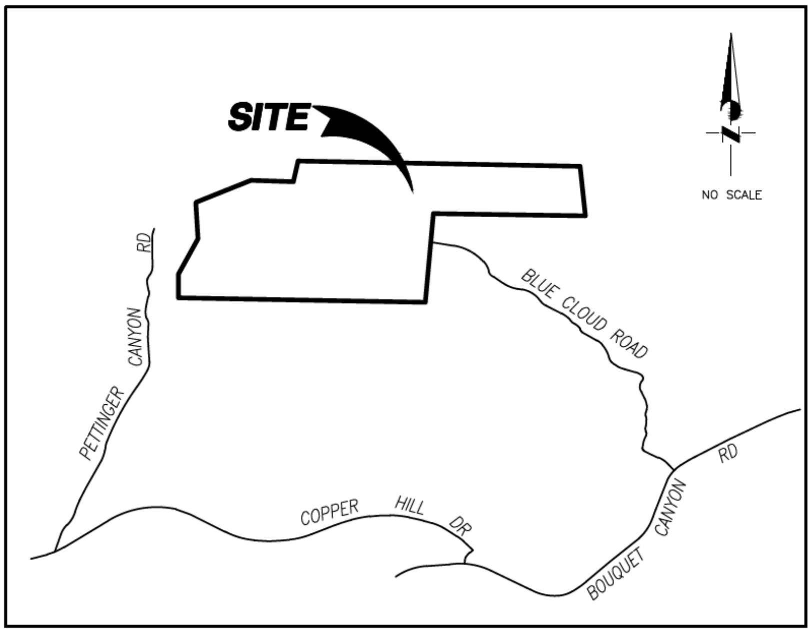
1.2 Project Description

The proposed project is located in the City of Santa Clarita, Los Angeles County and consists of approximately 5 acres of proposed disturbed grading area and an additional of about 5 acres of other activity areas within the adjacent natural terrain. The total property site is about 380 acres within its boundaries, see vicinity map below for reference.

At present, the entire property site is undeveloped and is being used as recreational hiking area with dirt trails. The proposed project site is a small development located on the west end of the property, within the Haskell Canyon Open Space, and just east of the Haskell Canyon. The watershed tributary to the project site is about 128 acres, draining overland from east to west, and directly discharging into the Haskell Canyon creek. The watersheds natural terrain has elevations ranging from high of 1957 to low of 1448.

The proposed Blue Cloud development is a bike park development consisting of beginner and intermediate pump tracks, roadway/driveway access coming from City Highline Motorway Fire Road, picnic area, parking lot, bike trails and other related bike activity areas, and a small bathroom area located near the east site boundary and adjacent to Blue Cloud Road, serving the existing dirt parking area.

The proposed condition drainage watershed follows the existing condition drainage pattern, draining overland from east to west. A concrete J-drain with 2 culvert crossings will convey the drainage flow from the east and north, while a concrete v-ditch will convey the flow from the south. Both of these drainage devices drain directly into the Haskell Canyon creek.



VICINITY MAP
NOT TO SCALE
THOMAS GUIDE 4461/ D-7

2. METHODOLOGY

The project site has a single tributary watershed of about 128 acres. The watershed is delineated based on the proposed site grading and existing topography from the tributary undeveloped areas. The proposed drainage watershed generally follows the natural drainage course. The watershed is then delineated into subareas of less than 40 acres for the hydrology analysis. Two hydrologic methods were used for the drainage analysis - the Rational Method and the Modified Rational Methods included in the Los Angeles County Hydrology Manual.

The time of concentration (T_c) for each subarea was computed using the Los Angeles County approved Time of Concentration calculator (HydroCalc Calculator). The calculator evaluates several hydrologic parameters such as soil type, land use, imperviousness, storm frequency, length and slope of each reach to calculate a time of concentration. This data was used with the Los Angeles County approved LAR04 software application to determine peak flow rates for the design storm event.

Using the times of concentration for each subarea, the Modified Rational Method was then used to calculate the various storm frequencies, 24-Hour peak runoff flow for each subarea. In addition, the undeveloped tributary areas were further analyzed using a burned coefficient to calculate peak burned runoff rates for the 50-yr burned and bulked storm frequency. No burned coefficients were used for proposed developed areas.

The project's land use and imperviousness were determined from the Land Use and Proportion Impervious Data provided in the Los Angeles County Hydrology Manual. Soil types and rainfall corresponding to each subarea were obtained from the isohyetal map (see Appendices).

The project site is located in a single debris potential area within the Santa Clara Basin: DPA- 8. Debris volumes were calculated for each undeveloped subarea based on the debris production rates. The project is located within the Santa Clara River Watershed and its undeveloped areas were analyzed for the debris potential, as well as peak burned and bulked runoff rates.

Bulking effects occur when debris is considered with the peak burned flows. Within the Santa Clara Watershed, DPA- 8, the burned and bulked peak runoff rates were calculated by multiplying the peak burned runoff rates by the appropriate bulking factor.

A summary of the project's burned and bulk flows, and debris volumes can be found in Hydrologic Summary Tables.

3. DESIGN CRITERIA

Los Angeles County requires that several design criteria be followed when using the Rational and Modified Rational Method of Hydrology to determine capital flood flow.

The 50-year, 24-hour rainfall isohyet used in the hydrologic calculations were obtained from the Los Angeles County Hydrology Manual's Hydrologic Maps, it is 5.5".

The soil number within the project site were also determined from the hydrologic map as 099.

The project used 1% imperviousness for existing natural or undeveloped areas, and 2% for developed regional parks and recreation areas, as listed on the Proportion Impervious Data table.

The project falls into a single debris potential area in the Santa Clara Basin, DPA-8. The respective debris and bulking factors are 35,500 cy / mi^2 and 1.360, respectively.

The design criteria used is summarized below:

Hydrology Method:	Los Angeles County Flood Control District Rational Method and Modified Rational Method.
Hydrology Modeling Software	LAR04
Design Storm:	2-year clear storm frequency
50-Year Isohyet:	5.5"
Soil Types:	099
Land Use and Imperviousness:	Natural or undeveloped areas (1%) Developed regional parks and recreation areas (2%)
Debris Potential Zone:	DPA-8 (35,500 cy / mi^2); area $\leq$ 0.1 mi^2
Peak Bulking Rate:	1.360; DPA-8 (area $\leq$ 0.1 mi^2)

4. CONCLUSIONS & RECOMMENDATIONS

The table below summarizes the conditions at the outlet area, pre- and post-development:

Outlet Summary

	Pre-Development		Post-Development		Delta	
	Area (Ac)	**Q_2** (cfs)	**Area** (Ac)	**Q_2** (cfs)	**Area** (Ac)	**Q_2** (cfs)
OUTLET	128.2	**36.0**	128.2	**35.3**	0	-0.7

Based upon the hydrologic analysis performed, the 2-year storm post-developed condition has resulted in an overall decrease of 0.7 cfs compared to its pre-development condition, therefore will not pose any adverse impact on downstream offsite properties.

The design storm of 2-year frequency, as the level of flood protection and drainage devices design criteria, was chosen per City of Santa Clarita's (client) request (see Appendix E: Technical Memorandum). However, this report provided other storm frequencies, as references.

In addition, (1) the onsite Low Impact development (LID) analysis will be provided under separate report; (2) the analysis and design of the access road/driveway and culvert crossings within the Haskell Canyon will also be provided under separate permit.

Finally, the proposed development will include drainage devices and infrastructures to sufficiently mitigate onsite impacts such as increased velocity --- will provide energy dissipaters consisting of riprap, as necessary, to prevent erosion. Preliminary layouts of the drainage devices are shown on the Proposed Conditions Map. Other detailed calculations and maps can be found in the Appendices.

5. REFERENCES

i. Los Angeles County Department of Public Works Hydrology Manual, January 2006

ii. Los Angeles County Department of Public Works Sedimentation Manual, March 2006

6. APPENDICES

A. Modified Rational Method of Hydrology (Existing Condition)

1. Capital Storm Hydrologic Summary Table
2. TC Calculations
3. Storm Modified Rational Method of Hydrology (LAR04) Result and Hydrograph

2-yr Clear (DESIGN STORM)								JUNCTION	
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**2-Yr Depth** (in)	**2-Yr Tc** (min)	**Q_2** (cfs)	**Σarea** (ac)	**ΣQ_2** (cfs)
1A		38.3	0.01	98	2.1285	25	12.1	38.3	12.1
2A		35.8	0.01	98	2.1285	30	9.8	74.1	21.0
3A		8.7	0.01	98	2.1285	20	3.2	82.8	23.8
4A		38.8	0.01	98	2.1285	30	10.6	121.6	34.0
5A		6.6	0.01	98	2.1285	19	2.6	128.2	36.0

50-yr BB										JUNCTION			
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**50-Yr Depth** (in)	**50-Yr Tc** (min)	Q_{50b} (cfs)	Q_{50bb} (cfs)	**DPV** (cy)	**Σarea** (ac)	ΣQ_{50b} (cfs)	ΣQ_{50bb} (cfs)	**ΣDPV** (cy)
1A		38.3	0.01	98	5.5	9	80.7	109.8	2,124	38.3	80.7		
2A		35.8	0.01	98	5.5	12	64.8	88.1	1,986	74.1	138.7		
	2A									74.1	138.7	187.2	3,850
3A		8.7	0.01	98	5.5	8	19.4	26.4	483	82.8	153.8		
	3A									82.8	153.8	206.8	4,108
4A		38.8	0.01	98	5.5	14	64.6	87.9	2,152	121.6	217.1		
	4A									121.6	217.1	286.6	4,940
5A		6.6	0.01	98	5.5	7	15.8	21.4	366	128.2	225.4		
	5A									128.2	225.4	296.8	5,108

50-yr Clear								JUNCTION	
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**50-Yr Depth** (in)	**50-Yr Tc** (min)	Q_{50} (cfs)	**Σarea** (ac)	ΣQ_{50} (cfs)
1A		38.3	0.01	98	5.5	9	78.4	38.3	78.4
2A		35.8	0.01	98	5.5	12	62.7	74.1	134.2
3A		8.7	0.01	98	5.5	8	18.9	82.8	148.7
4A		38.8	0.01	98	5.5	14	62.5	121.6	209.8
5A		6.6	0.01	98	5.5	7	15.3	128.2	217.6

25-yr Clear								JUNCTION	
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**25-Yr Depth** (in)	**25-Yr Tc** (min)	**Q_{25}** (cfs)	**Σarea** (ac)	**ΣQ_{25}** (cfs)
1A		38.3	0.01	98	4.829	10	62.3	38.3	62.3
2A		35.8	0.01	98	4.829	13	49.9	74.1	106.5
3A		8.7	0.01	98	4.829	9	14.9	82.8	118.4
4A		38.8	0.01	98	4.829	16	48.2	121.6	164.8
5A		6.6	0.01	98	4.829	8	11.9	128.2	172.2

10-yr Clear								JUNCTION	
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**10-Yr Depth** (in)	**10-Yr Tc** (min)	**Q_{10}** (cfs)	**Σarea** (ac)	**ΣQ_{10}** (cfs)
1A		38.3	0.01	98	3.927	12	44.5	38.3	44.5
2A		35.8	0.01	98	3.927	16	35.4	74.1	76.6
3A		8.7	0.01	98	3.927	10	11.3	82.8	85.8
4A		38.8	0.01	98	3.927	19	34.6	121.6	119.5
5A		6.6	0.01	98	3.927	10	8.6	128.2	125.5

5-yr Clear								JUNCTION	
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**5-Yr Depth** (in)	**5-Yr Tc** (min)	**Q_5** (cfs)	**Σarea** (ac)	**ΣQ_5** (cfs)
1A		38.3	0.01	98	3.212	15	29.6	38.3	29.6
2A		35.8	0.01	98	3.212	20	22.9	74.1	50.4
3A		8.7	0.01	98	3.212	13	7.3	82.8	56.6
4A		38.8	0.01	98	3.212	24	22.1	121.6	78.3
5A		6.6	0.01	98	3.212	12	5.8	128.2	82.5

85th Percentile								JUNCTION	
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**LID Depth** (in)	**LID Tc** (min)	**Q_{LID}** (cfs)	**Σarea** (ac)	**$ΣQ_{LID}$** (cfs)
1A		38.3	0.01	98	0.85	30	8.8	38.3	8.8
2A		35.8	0.01	98	0.85	30	8.2	74.1	16.1
3A		8.7	0.01	98	0.85	30	2.0	82.8	18.0
4A		38.8	0.01	98	0.85	30	8.9	121.6	26.4
5A		6.6	0.01	98	0.85	30	1.5	128.2	27.7

Peak Flow Hydrologic Analysis

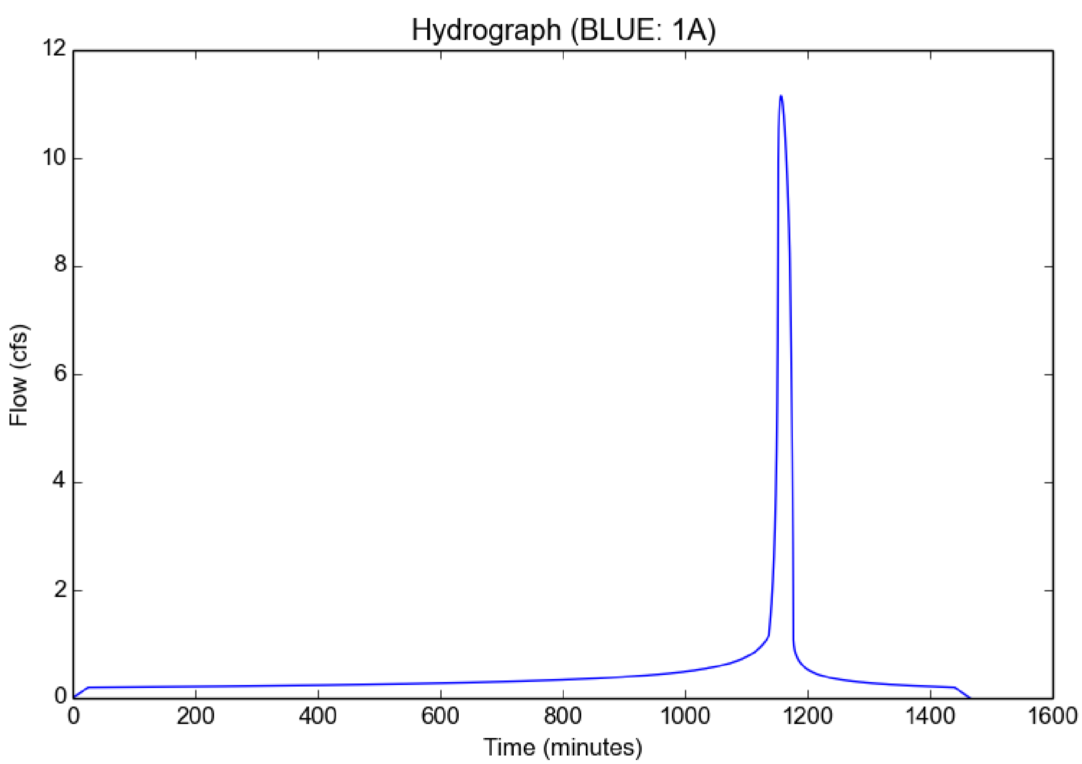
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	1A
Area (ac)	38.3
Flow Path Length (ft)	1583.0
Flow Path Slope (vft/hft)	0.239
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.1285
Peak Intensity (in/hr)	0.596
Undeveloped Runoff Coefficient (Cu)	0.4842
Developed Runoff Coefficient (Cd)	0.4884
Time of Concentration (min)	25.0
Clear Peak Flow Rate (cfs)	11.1487
Burned Peak Flow Rate (cfs)	11.1487
24-Hr Clear Runoff Volume (ac-ft)	0.998
24-Hr Clear Runoff Volume (cu-ft)	43472.5092



Peak Flow Hydrologic Analysis

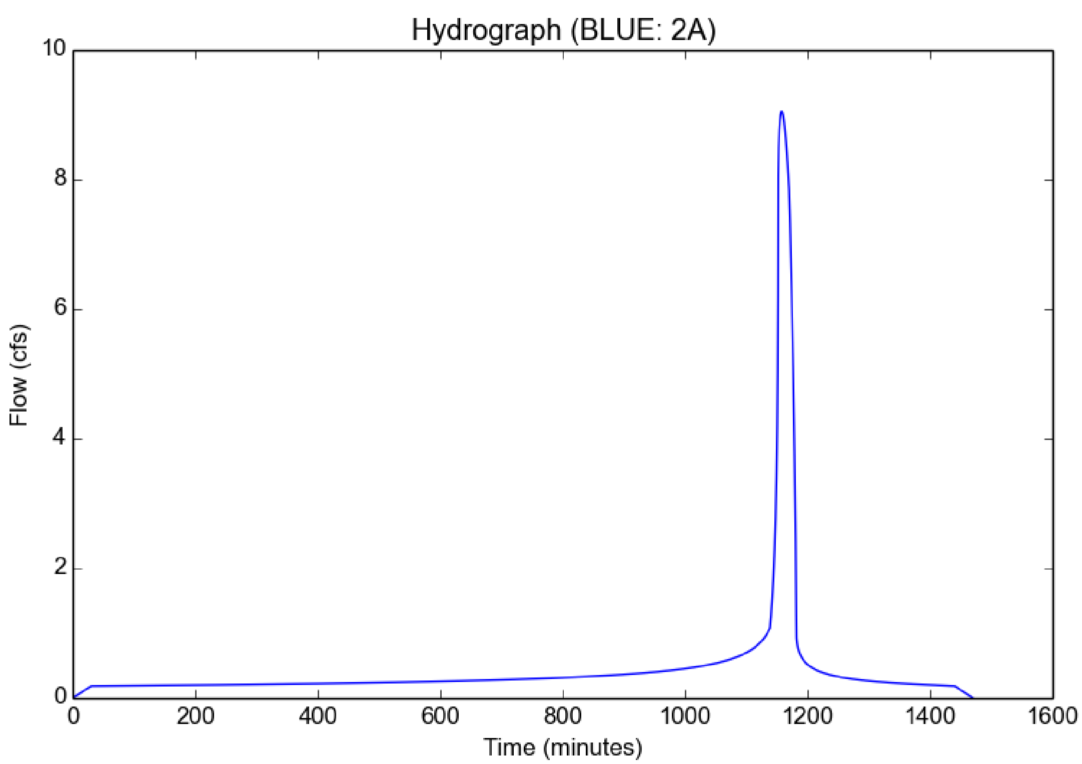
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	2A
Area (ac)	35.8
Flow Path Length (ft)	1984.0
Flow Path Slope (vft/hft)	0.137
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.1285
Peak Intensity (in/hr)	0.5471
Undeveloped Runoff Coefficient (Cu)	0.4578
Developed Runoff Coefficient (Cd)	0.4622
Time of Concentration (min)	30.0
Clear Peak Flow Rate (cfs)	9.0528
Burned Peak Flow Rate (cfs)	9.0528
24-Hr Clear Runoff Volume (ac-ft)	0.9231
24-Hr Clear Runoff Volume (cu-ft)	40208.846



Peak Flow Hydrologic Analysis

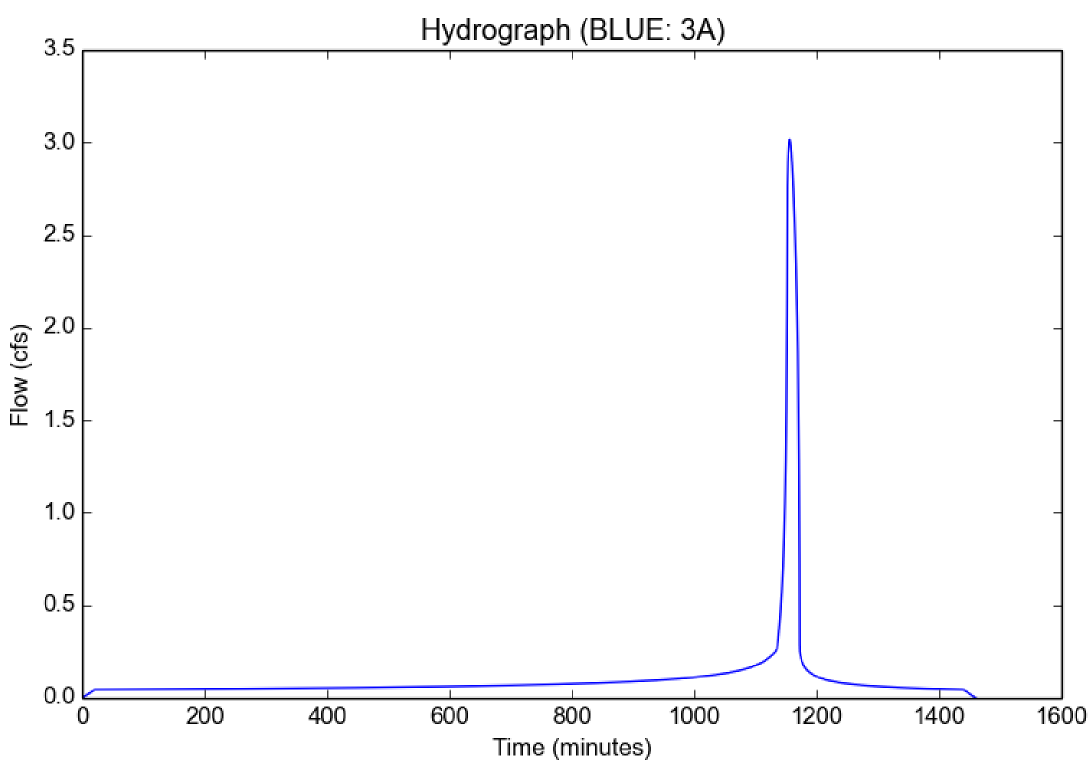
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	3A
Area (ac)	8.7
Flow Path Length (ft)	1267.0
Flow Path Slope (vft/hft)	0.262
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.1285
Peak Intensity (in/hr)	0.6619
Undeveloped Runoff Coefficient (Cu)	0.5198
Developed Runoff Coefficient (Cd)	0.5236
Time of Concentration (min)	20.0
Clear Peak Flow Rate (cfs)	3.0153
Burned Peak Flow Rate (cfs)	3.0153
24-Hr Clear Runoff Volume (ac-ft)	0.2289
24-Hr Clear Runoff Volume (cu-ft)	9969.706



Peak Flow Hydrologic Analysis

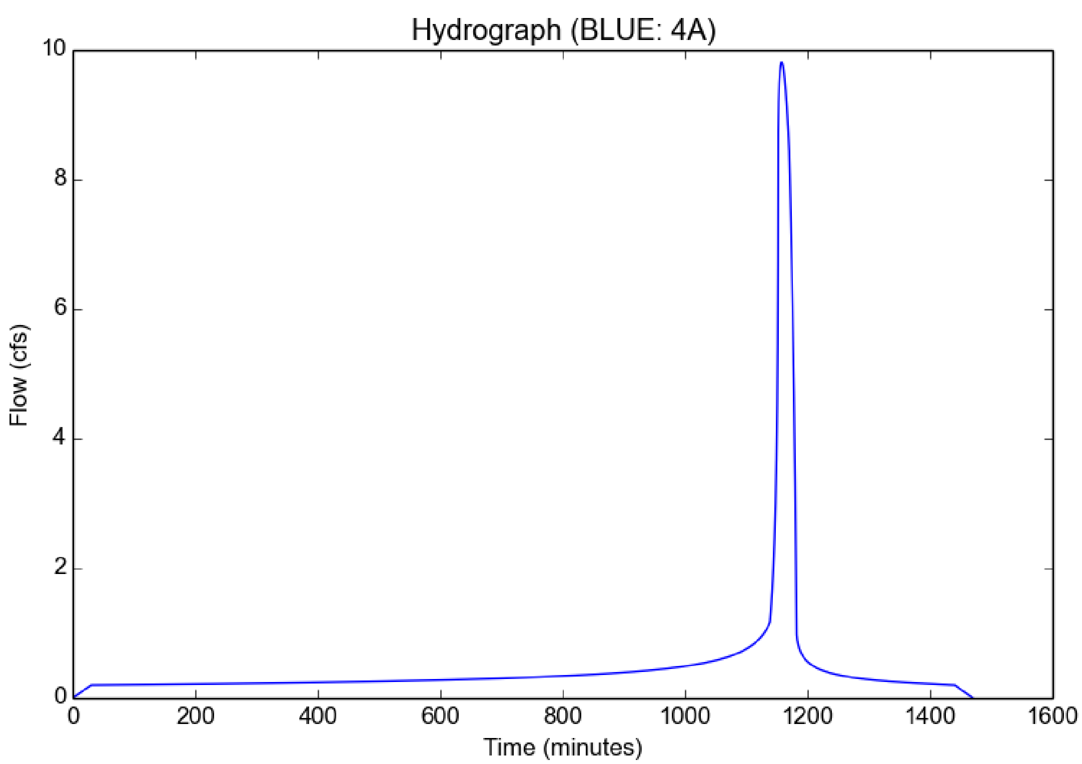
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	4A
Area (ac)	38.8
Flow Path Length (ft)	2601.0
Flow Path Slope (vft/hft)	0.161
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.1285
Peak Intensity (in/hr)	0.5471
Undeveloped Runoff Coefficient (Cu)	0.4578
Developed Runoff Coefficient (Cd)	0.4622
Time of Concentration (min)	30.0
Clear Peak Flow Rate (cfs)	9.8114
Burned Peak Flow Rate (cfs)	9.8114
24-Hr Clear Runoff Volume (ac-ft)	1.0004
24-Hr Clear Runoff Volume (cu-ft)	43578.3024



Peak Flow Hydrologic Analysis

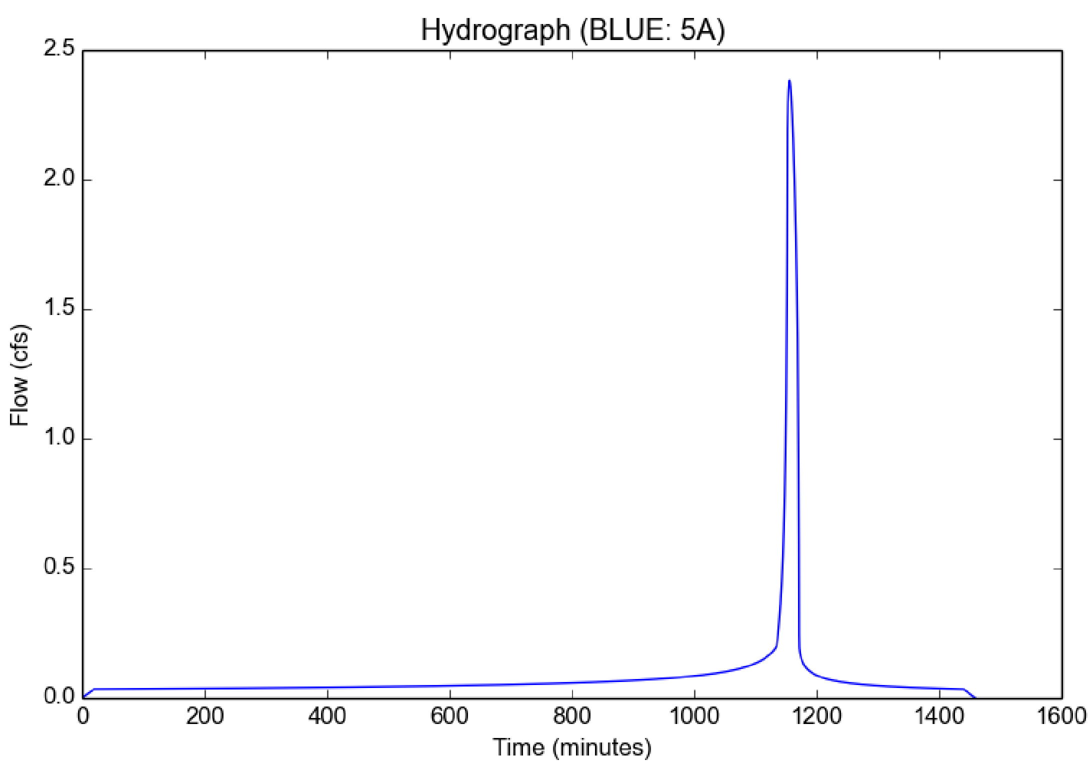
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	5A
Area (ac)	6.6
Flow Path Length (ft)	994.0
Flow Path Slope (vft/hft)	0.157
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.1285
Peak Intensity (in/hr)	0.6781
Undeveloped Runoff Coefficient (Cu)	0.5285
Developed Runoff Coefficient (Cd)	0.5322
Time of Concentration (min)	19.0
Clear Peak Flow Rate (cfs)	2.3819
Burned Peak Flow Rate (cfs)	2.3819
24-Hr Clear Runoff Volume (ac-ft)	0.174
24-Hr Clear Runoff Volume (cu-ft)	7577.9166



Peak Flow Hydrologic Analysis

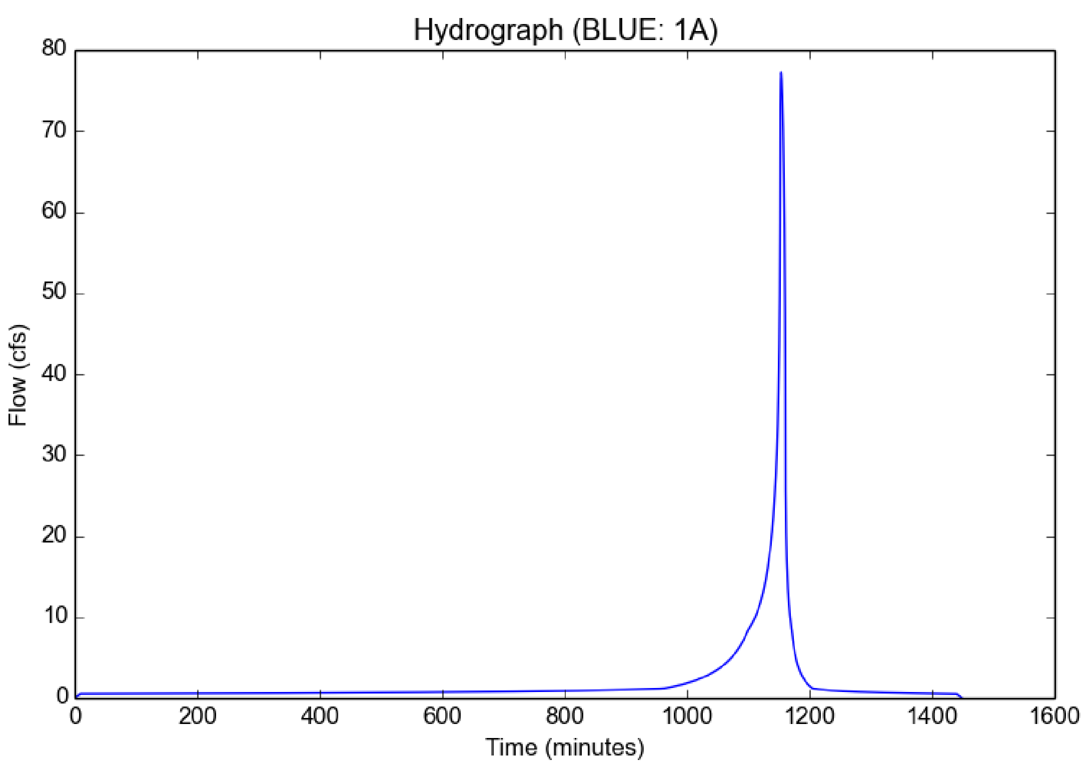
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	1A
Area (ac)	38.3
Flow Path Length (ft)	1583.0
Flow Path Slope (vft/hft)	0.239
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.5
Peak Intensity (in/hr)	2.4894
Undeveloped Runoff Coefficient (Cu)	0.8094
Developed Runoff Coefficient (Cd)	0.8103
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	77.255
Burned Peak Flow Rate (cfs)	77.255
24-Hr Clear Runoff Volume (ac-ft)	4.1839
24-Hr Clear Runoff Volume (cu-ft)	182251.6223



Peak Flow Hydrologic Analysis

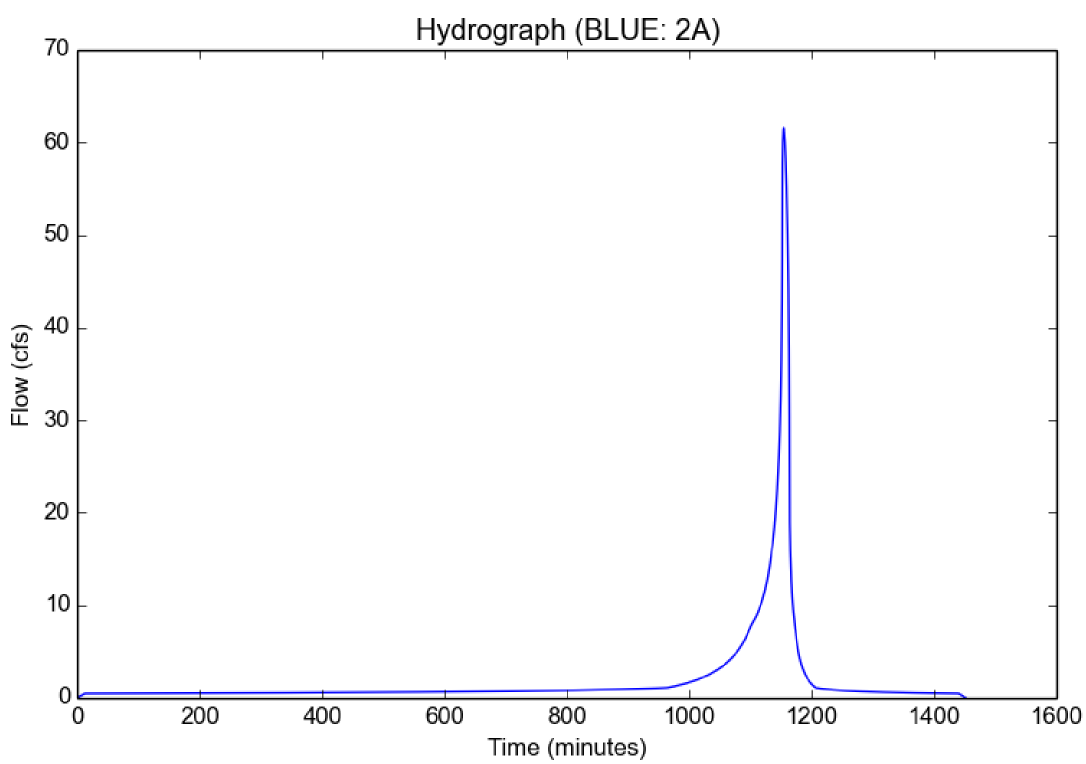
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	2A
Area (ac)	35.8
Flow Path Length (ft)	1984.0
Flow Path Slope (vft/hft)	0.137
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.5
Peak Intensity (in/hr)	2.1745
Undeveloped Runoff Coefficient (Cu)	0.7898
Developed Runoff Coefficient (Cd)	0.7909
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	61.5675
Burned Peak Flow Rate (cfs)	61.5675
24-Hr Clear Runoff Volume (ac-ft)	3.9071
24-Hr Clear Runoff Volume (cu-ft)	170193.9051



Peak Flow Hydrologic Analysis

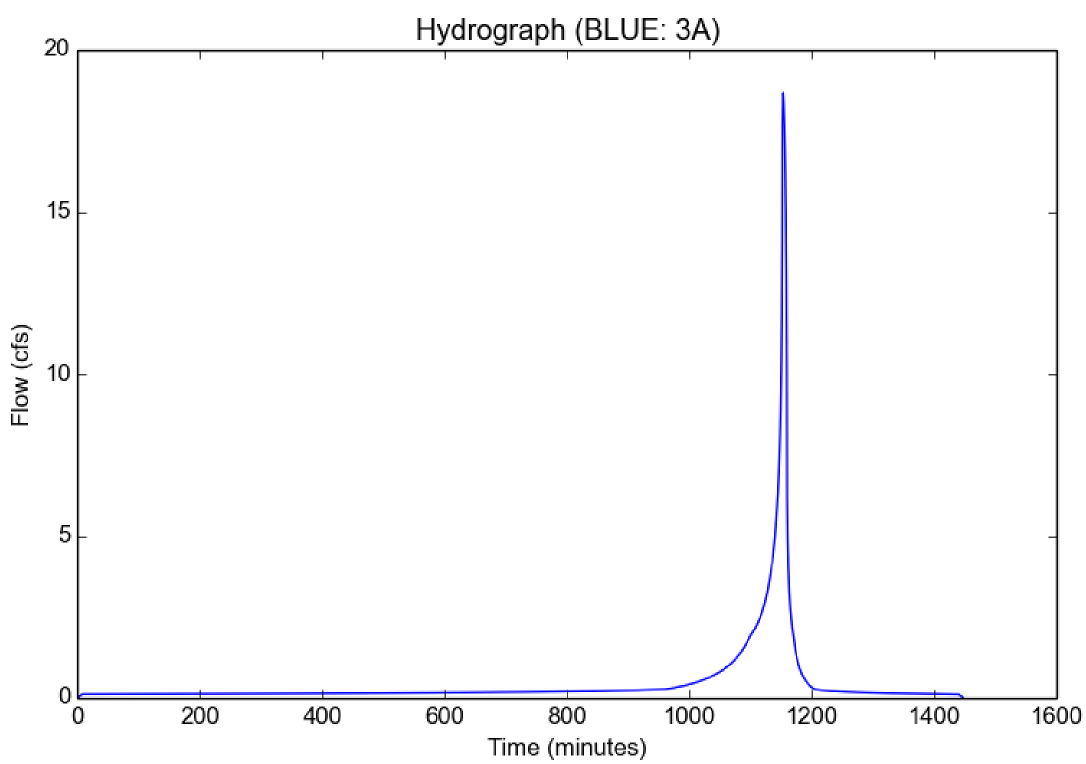
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	3A
Area (ac)	8.7
Flow Path Length (ft)	1267.0
Flow Path Slope (vft/hft)	0.262
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.5
Peak Intensity (in/hr)	2.6311
Undeveloped Runoff Coefficient (Cu)	0.815
Developed Runoff Coefficient (Cd)	0.8159
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	18.6751
Burned Peak Flow Rate (cfs)	18.6751
24-Hr Clear Runoff Volume (ac-ft)	0.9506
24-Hr Clear Runoff Volume (cu-ft)	41408.7232



Peak Flow Hydrologic Analysis

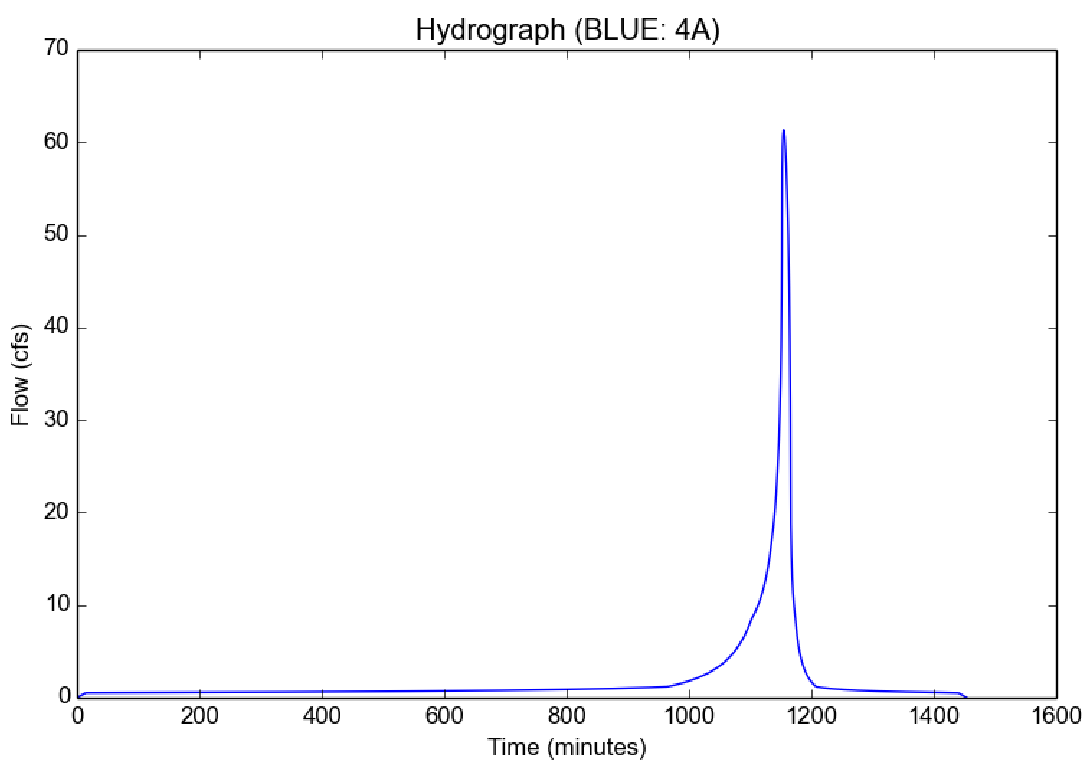
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	4A
Area (ac)	38.8
Flow Path Length (ft)	2601.0
Flow Path Slope (vft/hft)	0.161
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.5
Peak Intensity (in/hr)	2.0226
Undeveloped Runoff Coefficient (Cu)	0.7803
Developed Runoff Coefficient (Cd)	0.7815
Time of Concentration (min)	14.0
Clear Peak Flow Rate (cfs)	61.3276
Burned Peak Flow Rate (cfs)	61.3276
24-Hr Clear Runoff Volume (ac-ft)	4.2323
24-Hr Clear Runoff Volume (cu-ft)	184357.4058



Peak Flow Hydrologic Analysis

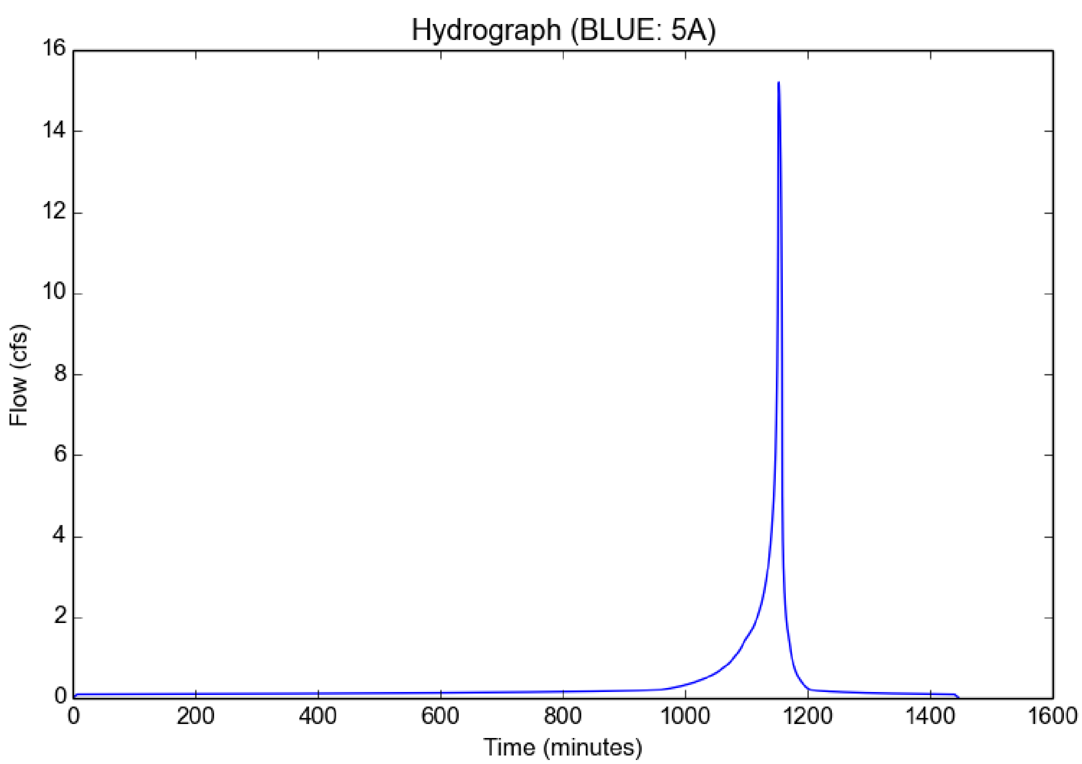
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	5A
Area (ac)	6.6
Flow Path Length (ft)	994.0
Flow Path Slope (vft/hft)	0.157
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.5
Peak Intensity (in/hr)	2.8015
Undeveloped Runoff Coefficient (Cu)	0.8215
Developed Runoff Coefficient (Cd)	0.8222
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	15.203
Burned Peak Flow Rate (cfs)	15.203
24-Hr Clear Runoff Volume (ac-ft)	0.7212
24-Hr Clear Runoff Volume (cu-ft)	31417.2034



Peak Flow Hydrologic Analysis

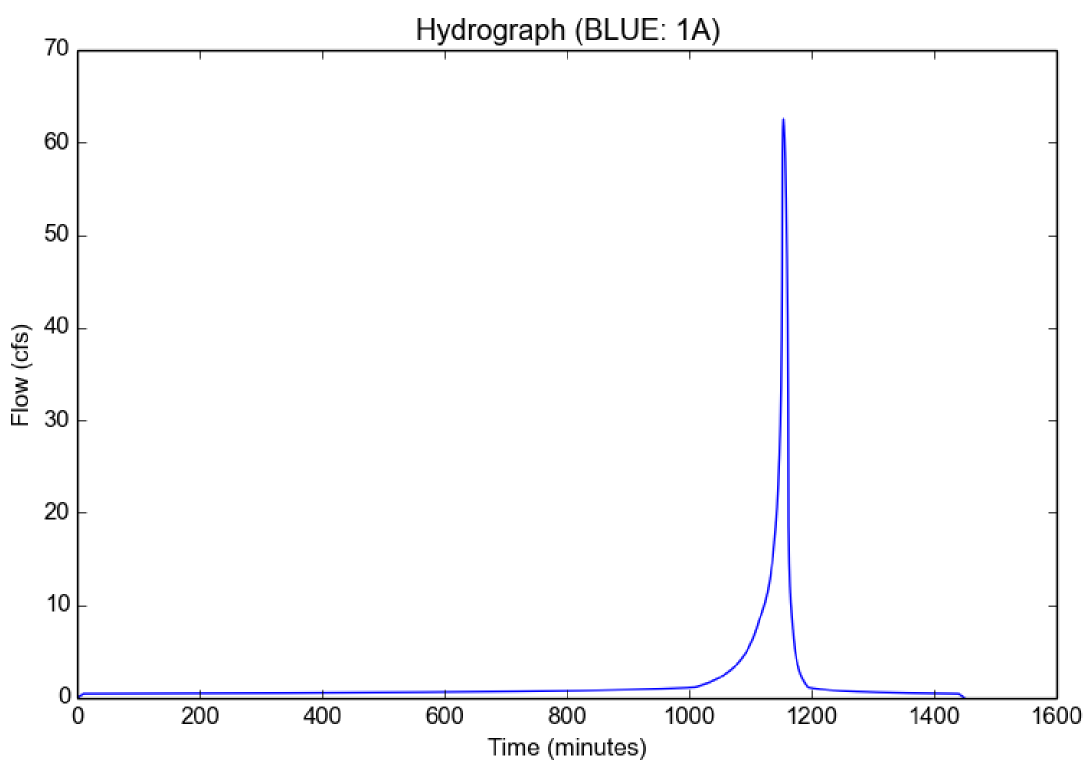
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	1A
Area (ac)	38.3
Flow Path Length (ft)	1583.0
Flow Path Slope (vft/hft)	0.239
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.829
Peak Intensity (in/hr)	2.0801
Undeveloped Runoff Coefficient (Cu)	0.7839
Developed Runoff Coefficient (Cd)	0.785
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	62.541
Burned Peak Flow Rate (cfs)	62.541
24-Hr Clear Runoff Volume (ac-ft)	3.3935
24-Hr Clear Runoff Volume (cu-ft)	147822.3506



Peak Flow Hydrologic Analysis

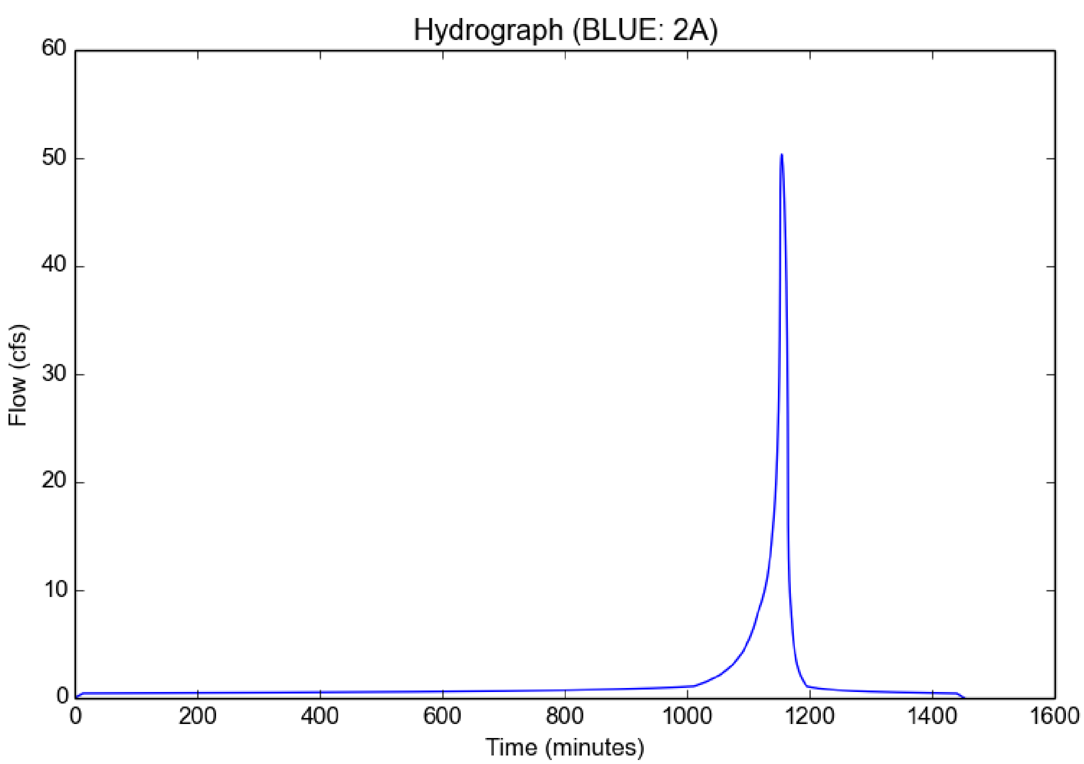
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	2A
Area (ac)	35.8
Flow Path Length (ft)	1984.0
Flow Path Slope (vft/hft)	0.137
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.829
Peak Intensity (in/hr)	1.8388
Undeveloped Runoff Coefficient (Cu)	0.7633
Developed Runoff Coefficient (Cd)	0.7646
Time of Concentration (min)	13.0
Clear Peak Flow Rate (cfs)	50.3332
Burned Peak Flow Rate (cfs)	50.3332
24-Hr Clear Runoff Volume (ac-ft)	3.1674
24-Hr Clear Runoff Volume (cu-ft)	137971.8965



Peak Flow Hydrologic Analysis

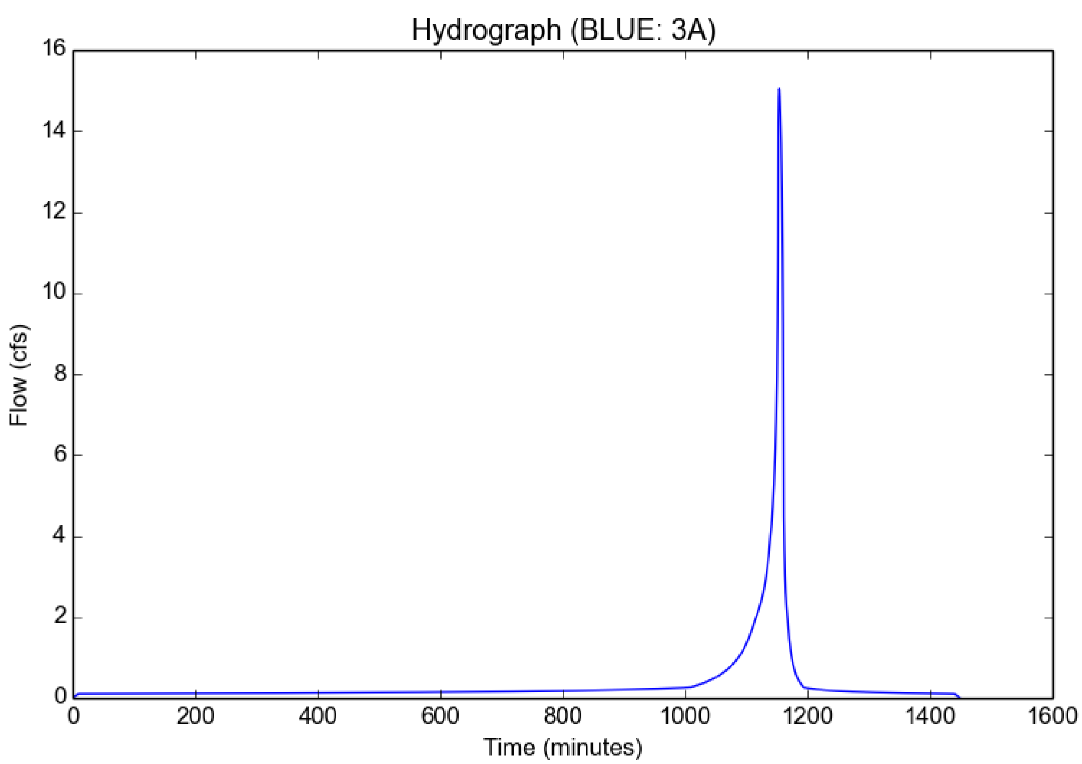
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	3A
Area (ac)	8.7
Flow Path Length (ft)	1267.0
Flow Path Slope (vft/hft)	0.262
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.829
Peak Intensity (in/hr)	2.1857
Undeveloped Runoff Coefficient (Cu)	0.7905
Developed Runoff Coefficient (Cd)	0.7916
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	15.0515
Burned Peak Flow Rate (cfs)	15.0515
24-Hr Clear Runoff Volume (ac-ft)	0.7711
24-Hr Clear Runoff Volume (cu-ft)	33588.6407



Peak Flow Hydrologic Analysis

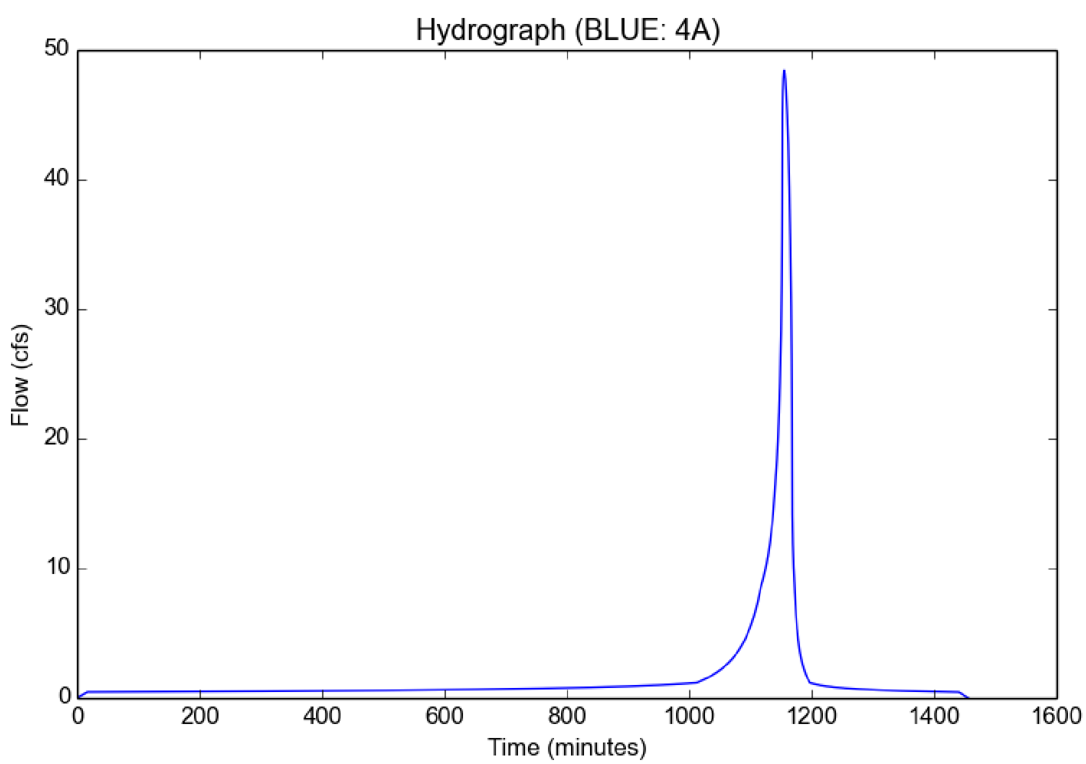
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	4A
Area (ac)	38.8
Flow Path Length (ft)	2601.0
Flow Path Slope (vft/hft)	0.161
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.829
Peak Intensity (in/hr)	1.6678
Undeveloped Runoff Coefficient (Cu)	0.7467
Developed Runoff Coefficient (Cd)	0.7482
Time of Concentration (min)	16.0
Clear Peak Flow Rate (cfs)	48.4174
Burned Peak Flow Rate (cfs)	48.4174
24-Hr Clear Runoff Volume (ac-ft)	3.4294
24-Hr Clear Runoff Volume (cu-ft)	149384.5901



Peak Flow Hydrologic Analysis

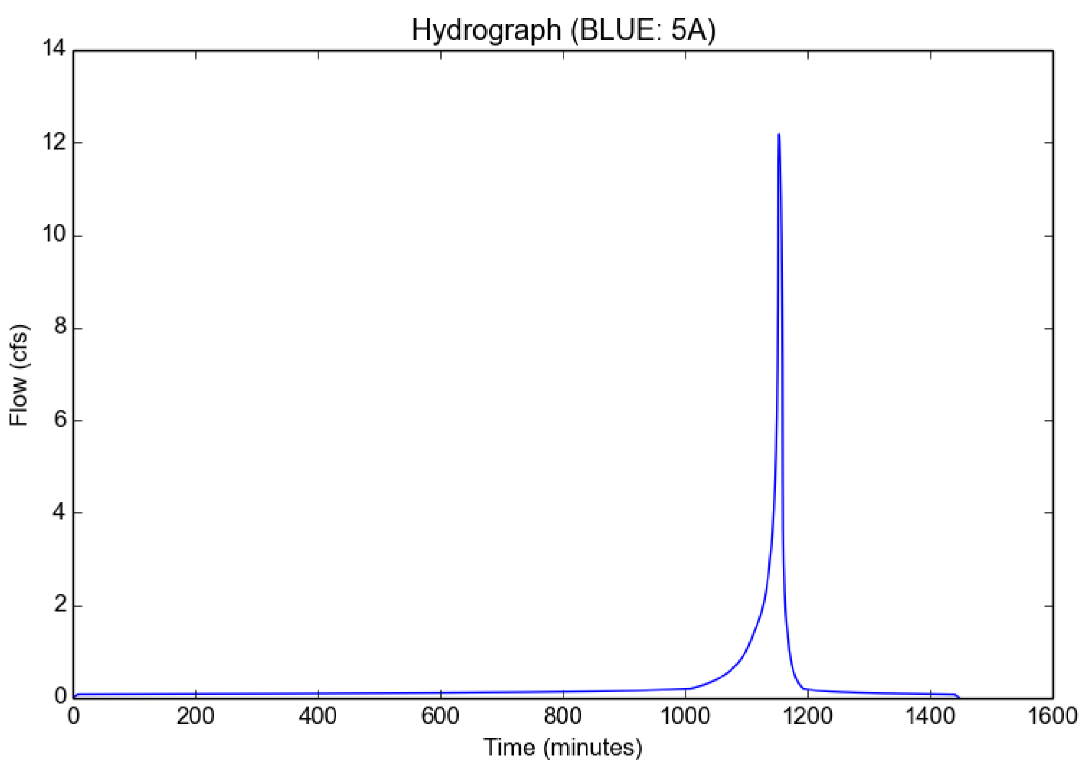
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	5A
Area (ac)	6.6
Flow Path Length (ft)	994.0
Flow Path Slope (vft/hft)	0.157
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.829
Peak Intensity (in/hr)	2.3101
Undeveloped Runoff Coefficient (Cu)	0.7982
Developed Runoff Coefficient (Cd)	0.7992
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	12.1853
Burned Peak Flow Rate (cfs)	12.1853
24-Hr Clear Runoff Volume (ac-ft)	0.5852
24-Hr Clear Runoff Volume (cu-ft)	25489.3607



Peak Flow Hydrologic Analysis

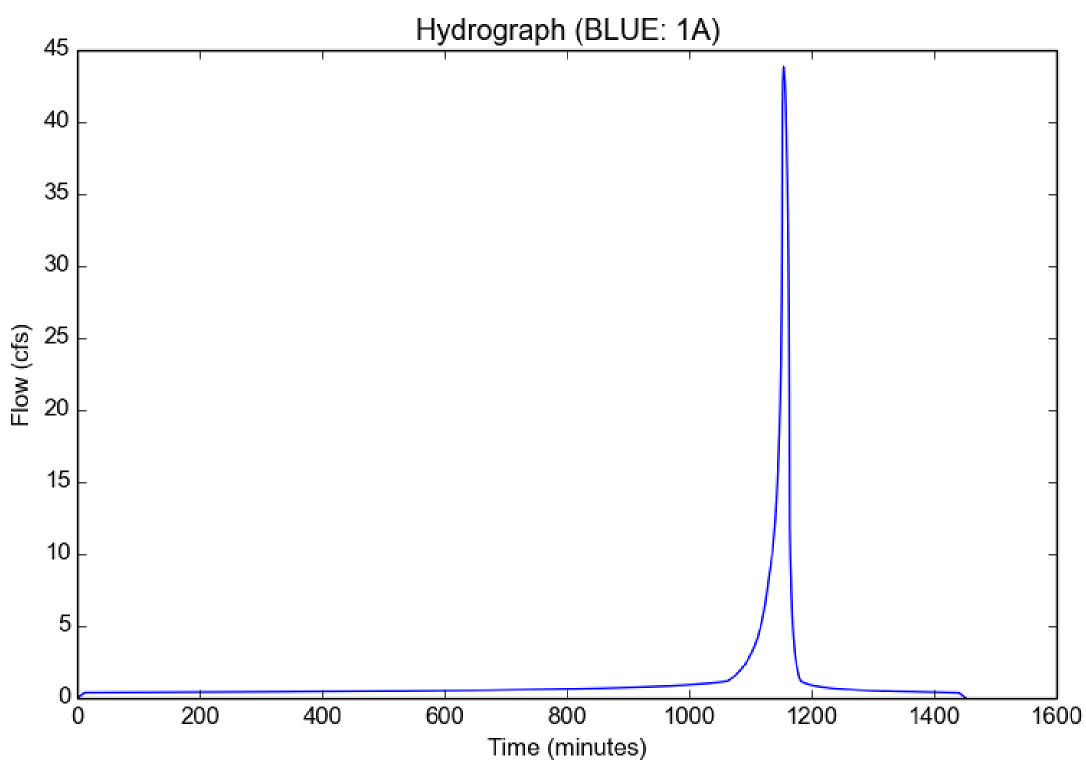
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	1A
Area (ac)	38.3
Flow Path Length (ft)	1583.0
Flow Path Slope (vft/hft)	0.239
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.927
Peak Intensity (in/hr)	1.5526
Undeveloped Runoff Coefficient (Cu)	0.7355
Developed Runoff Coefficient (Cd)	0.7372
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	43.8361
Burned Peak Flow Rate (cfs)	43.8361
24-Hr Clear Runoff Volume (ac-ft)	2.4579
24-Hr Clear Runoff Volume (cu-ft)	107068.1453



Peak Flow Hydrologic Analysis

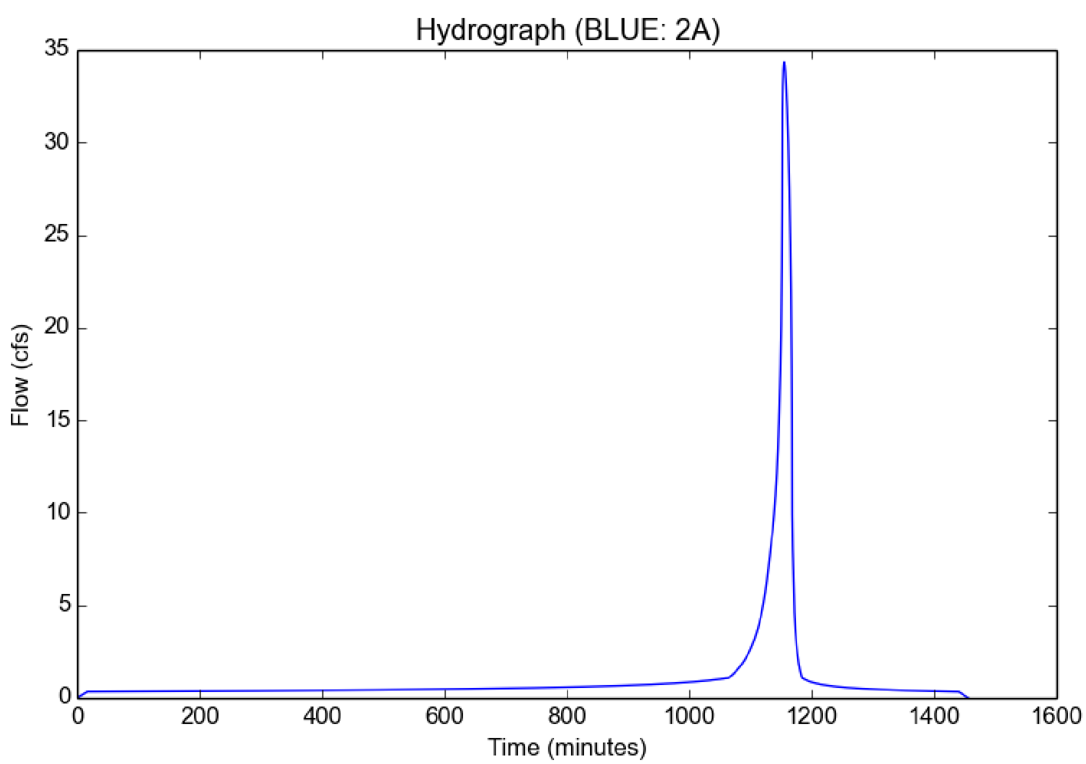
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	2A
Area (ac)	35.8
Flow Path Length (ft)	1984.0
Flow Path Slope (vft/hft)	0.137
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.927
Peak Intensity (in/hr)	1.3563
Undeveloped Runoff Coefficient (Cu)	0.7055
Developed Runoff Coefficient (Cd)	0.7075
Time of Concentration (min)	16.0
Clear Peak Flow Rate (cfs)	34.3512
Burned Peak Flow Rate (cfs)	34.3512
24-Hr Clear Runoff Volume (ac-ft)	2.2906
24-Hr Clear Runoff Volume (cu-ft)	99780.235



Peak Flow Hydrologic Analysis

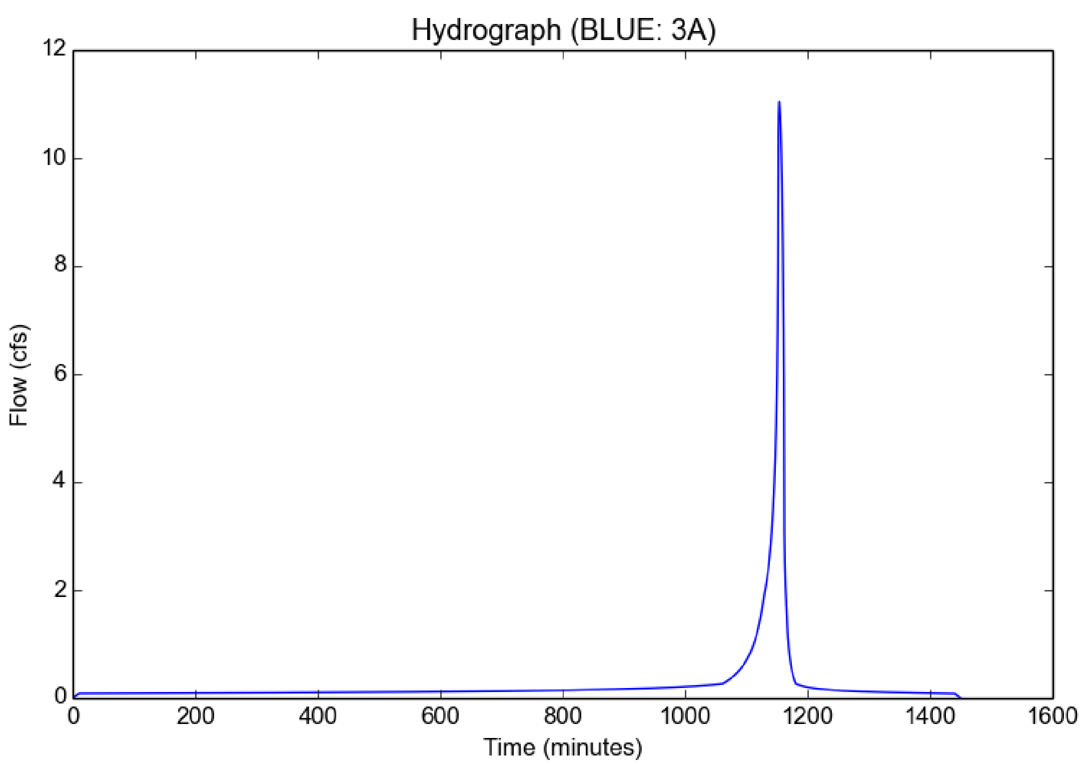
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	3A
Area (ac)	8.7
Flow Path Length (ft)	1267.0
Flow Path Slope (vft/hft)	0.262
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.927
Peak Intensity (in/hr)	1.6915
Undeveloped Runoff Coefficient (Cu)	0.749
Developed Runoff Coefficient (Cd)	0.7505
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	11.0446
Burned Peak Flow Rate (cfs)	11.0446
24-Hr Clear Runoff Volume (ac-ft)	0.5588
24-Hr Clear Runoff Volume (cu-ft)	24339.8255



Peak Flow Hydrologic Analysis

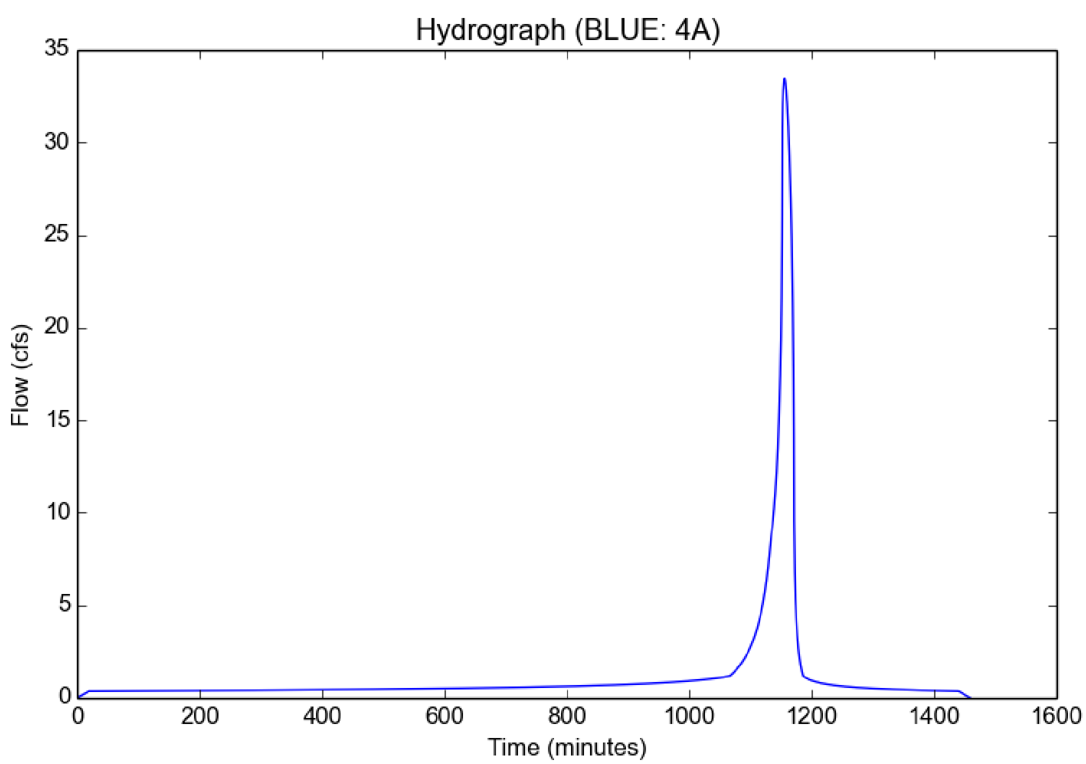
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	4A
Area (ac)	38.8
Flow Path Length (ft)	2601.0
Flow Path Slope (vft/hft)	0.161
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.927
Peak Intensity (in/hr)	1.251
Undeveloped Runoff Coefficient (Cu)	0.6873
Developed Runoff Coefficient (Cd)	0.6894
Time of Concentration (min)	19.0
Clear Peak Flow Rate (cfs)	33.4654
Burned Peak Flow Rate (cfs)	33.4654
24-Hr Clear Runoff Volume (ac-ft)	2.479
24-Hr Clear Runoff Volume (cu-ft)	107983.7584



Peak Flow Hydrologic Analysis

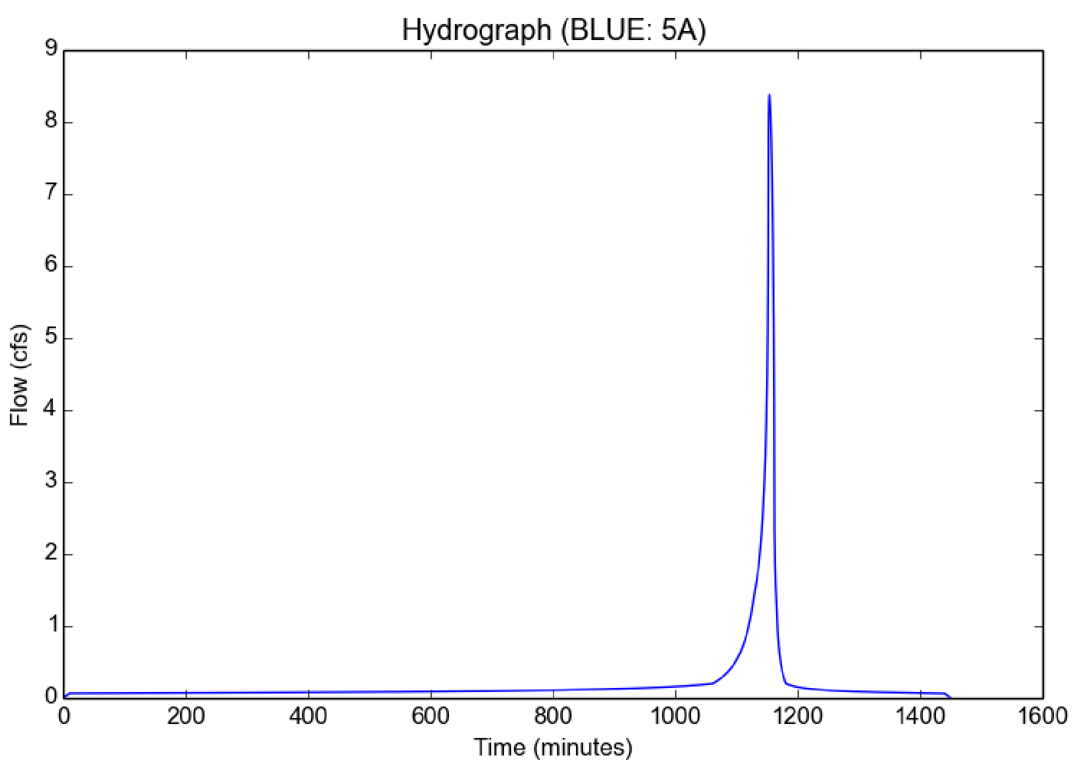
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	5A
Area (ac)	6.6
Flow Path Length (ft)	994.0
Flow Path Slope (vft/hft)	0.157
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.927
Peak Intensity (in/hr)	1.6915
Undeveloped Runoff Coefficient (Cu)	0.749
Developed Runoff Coefficient (Cd)	0.7505
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	8.3787
Burned Peak Flow Rate (cfs)	8.3787
24-Hr Clear Runoff Volume (ac-ft)	0.4239
24-Hr Clear Runoff Volume (cu-ft)	18464.6952



Peak Flow Hydrologic Analysis

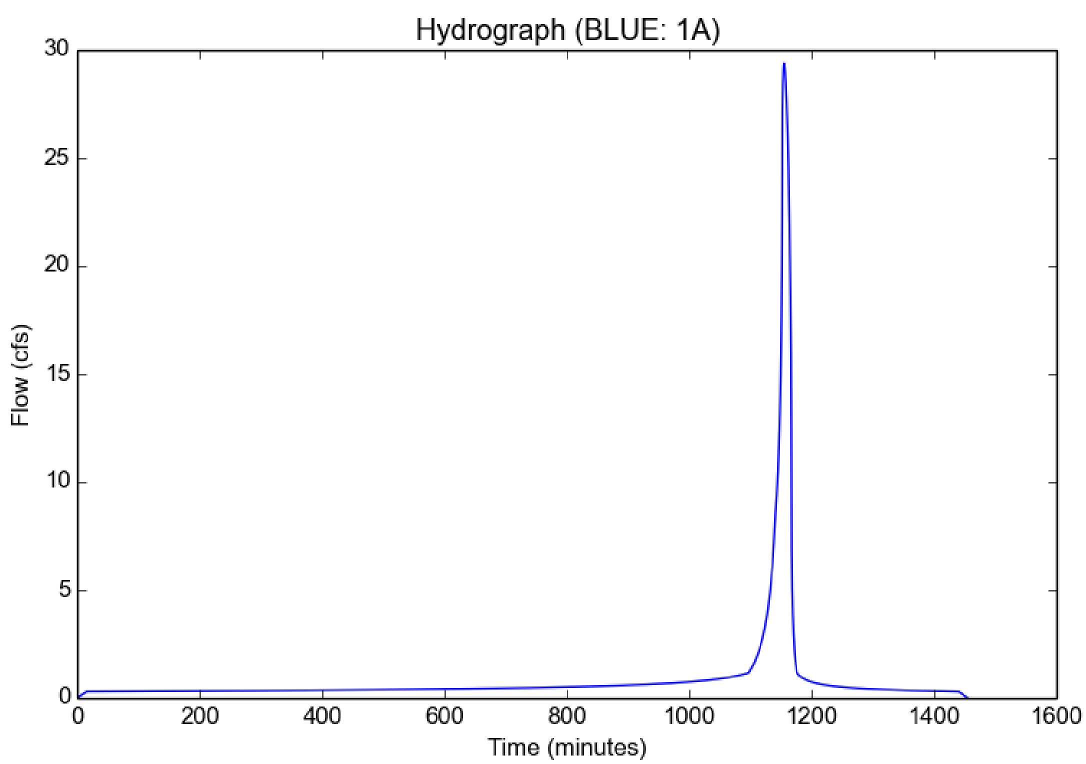
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	1A
Area (ac)	38.3
Flow Path Length (ft)	1583.0
Flow Path Slope (vft/hft)	0.239
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.212
Peak Intensity (in/hr)	1.1435
Undeveloped Runoff Coefficient (Cu)	0.6687
Developed Runoff Coefficient (Cd)	0.671
Time of Concentration (min)	15.0
Clear Peak Flow Rate (cfs)	29.3872
Burned Peak Flow Rate (cfs)	29.3872
24-Hr Clear Runoff Volume (ac-ft)	1.8165
24-Hr Clear Runoff Volume (cu-ft)	79124.9286



Peak Flow Hydrologic Analysis

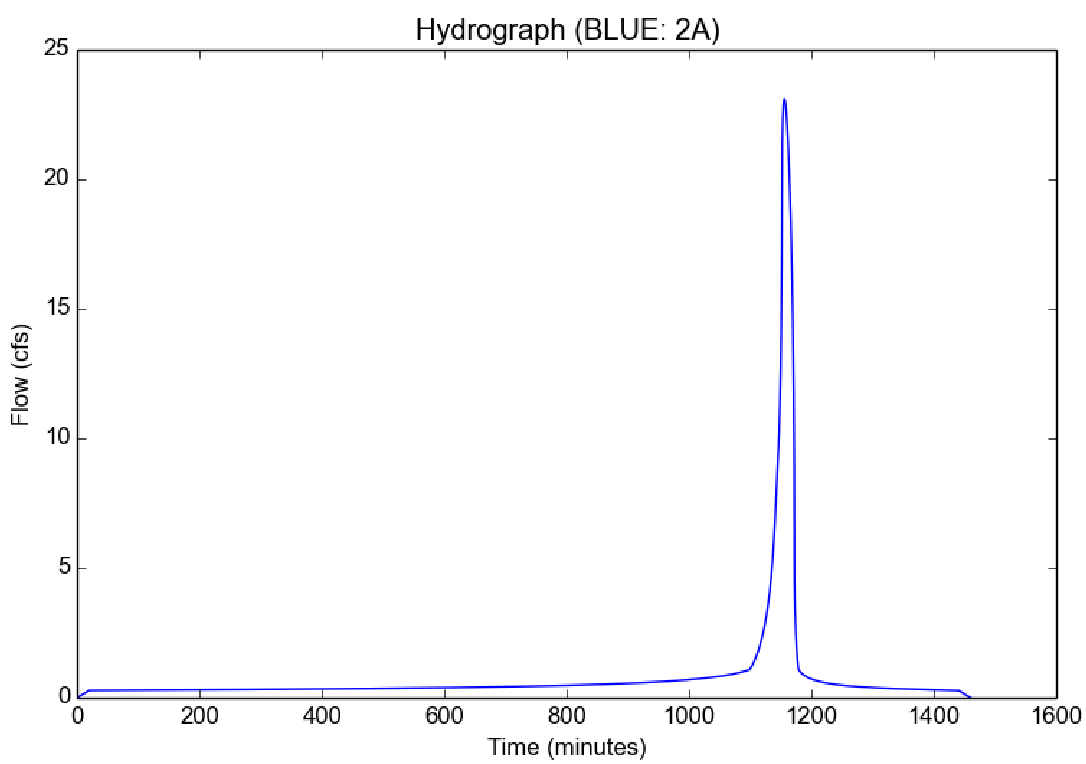
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	2A
Area (ac)	35.8
Flow Path Length (ft)	1984.0
Flow Path Slope (vft/hft)	0.137
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.212
Peak Intensity (in/hr)	0.9989
Undeveloped Runoff Coefficient (Cu)	0.6435
Developed Runoff Coefficient (Cd)	0.6461
Time of Concentration (min)	20.0
Clear Peak Flow Rate (cfs)	23.1033
Burned Peak Flow Rate (cfs)	23.1033
24-Hr Clear Runoff Volume (ac-ft)	1.6951
24-Hr Clear Runoff Volume (cu-ft)	73837.929



Peak Flow Hydrologic Analysis

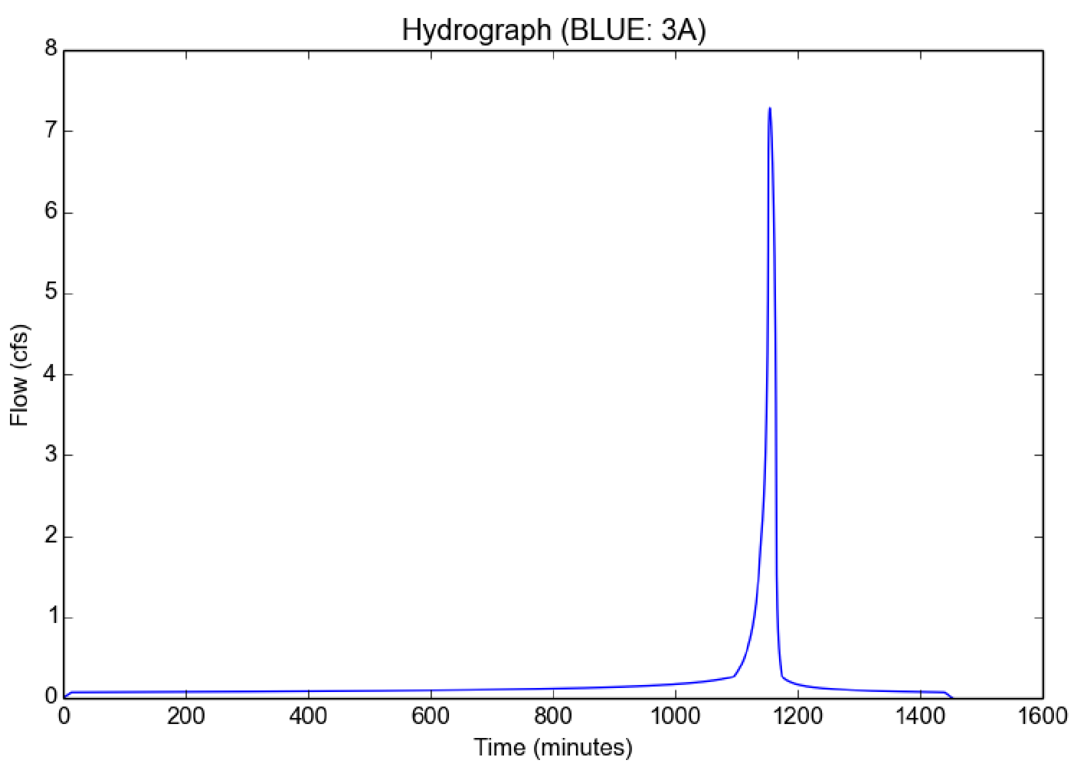
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	3A
Area (ac)	8.7
Flow Path Length (ft)	1267.0
Flow Path Slope (vft/hft)	0.262
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.212
Peak Intensity (in/hr)	1.223
Undeveloped Runoff Coefficient (Cu)	0.6825
Developed Runoff Coefficient (Cd)	0.6846
Time of Concentration (min)	13.0
Clear Peak Flow Rate (cfs)	7.285
Burned Peak Flow Rate (cfs)	7.285
24-Hr Clear Runoff Volume (ac-ft)	0.4129
24-Hr Clear Runoff Volume (cu-ft)	17986.1744



Peak Flow Hydrologic Analysis

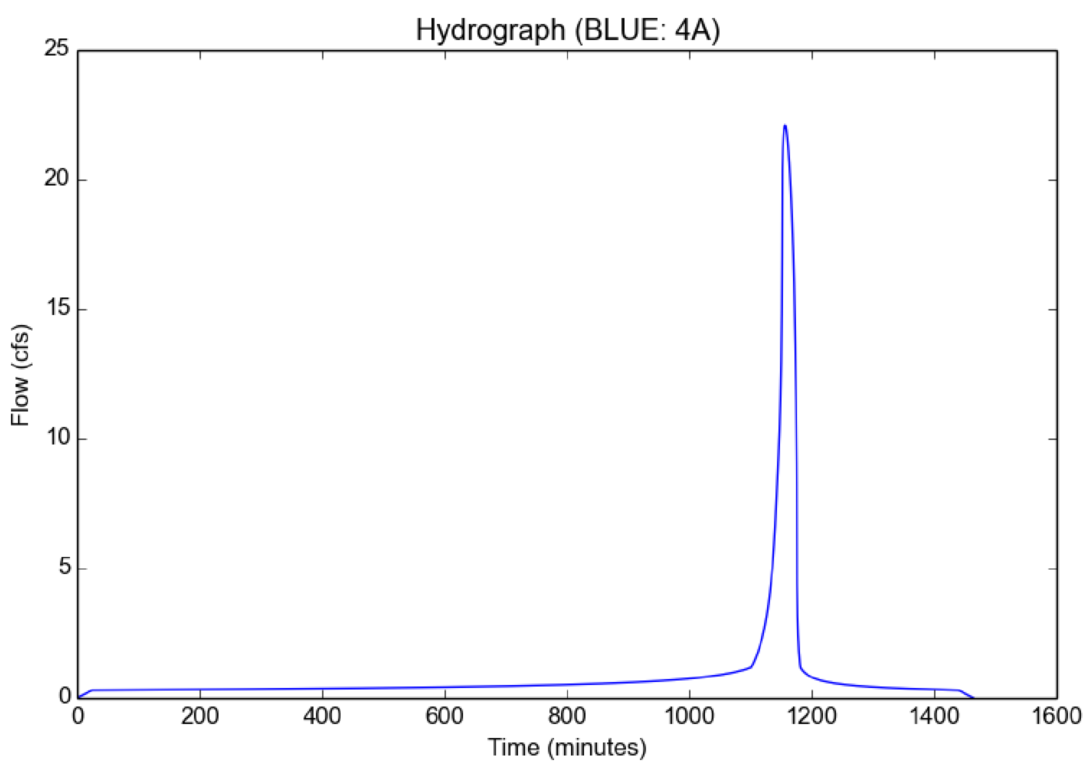
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	4A
Area (ac)	38.8
Flow Path Length (ft)	2601.0
Flow Path Slope (vft/hft)	0.161
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.212
Peak Intensity (in/hr)	0.9168
Undeveloped Runoff Coefficient (Cu)	0.6184
Developed Runoff Coefficient (Cd)	0.6212
Time of Concentration (min)	24.0
Clear Peak Flow Rate (cfs)	22.0991
Burned Peak Flow Rate (cfs)	22.0991
24-Hr Clear Runoff Volume (ac-ft)	1.8316
24-Hr Clear Runoff Volume (cu-ft)	79784.2178



Peak Flow Hydrologic Analysis

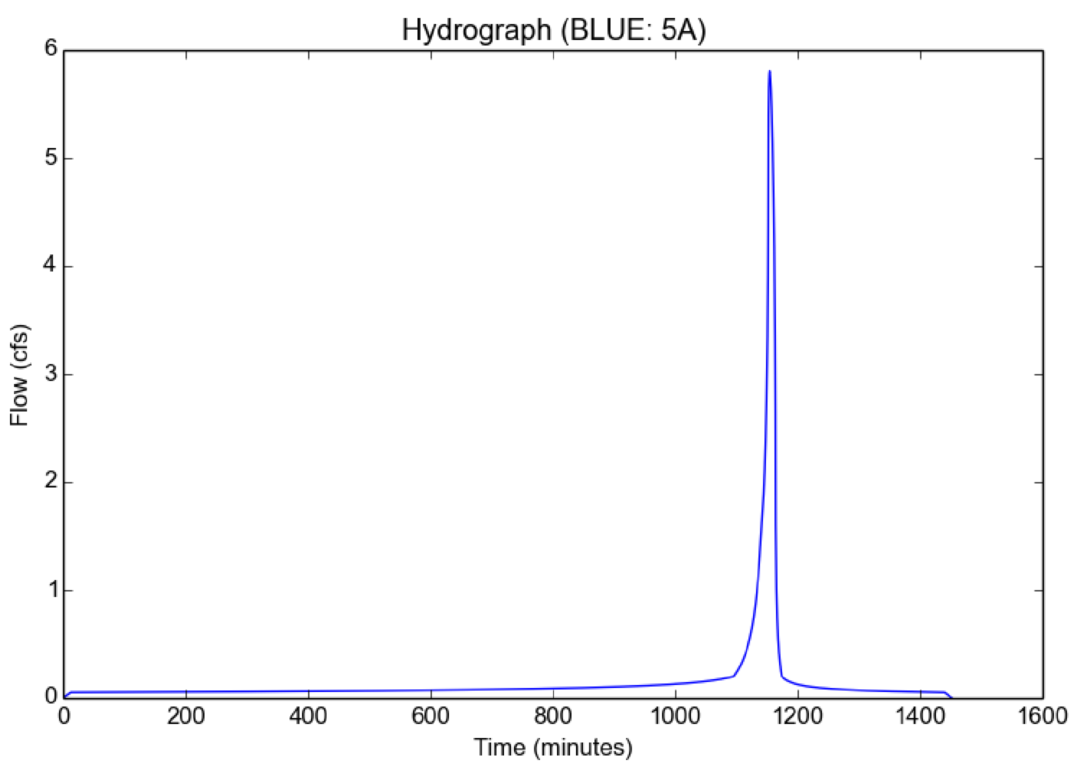
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	5A
Area (ac)	6.6
Flow Path Length (ft)	994.0
Flow Path Slope (vft/hft)	0.157
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.212
Peak Intensity (in/hr)	1.2699
Undeveloped Runoff Coefficient (Cu)	0.6906
Developed Runoff Coefficient (Cd)	0.6927
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	5.8057
Burned Peak Flow Rate (cfs)	5.8057
24-Hr Clear Runoff Volume (ac-ft)	0.3134
24-Hr Clear Runoff Volume (cu-ft)	13651.4641



Peak Flow Hydrologic Analysis

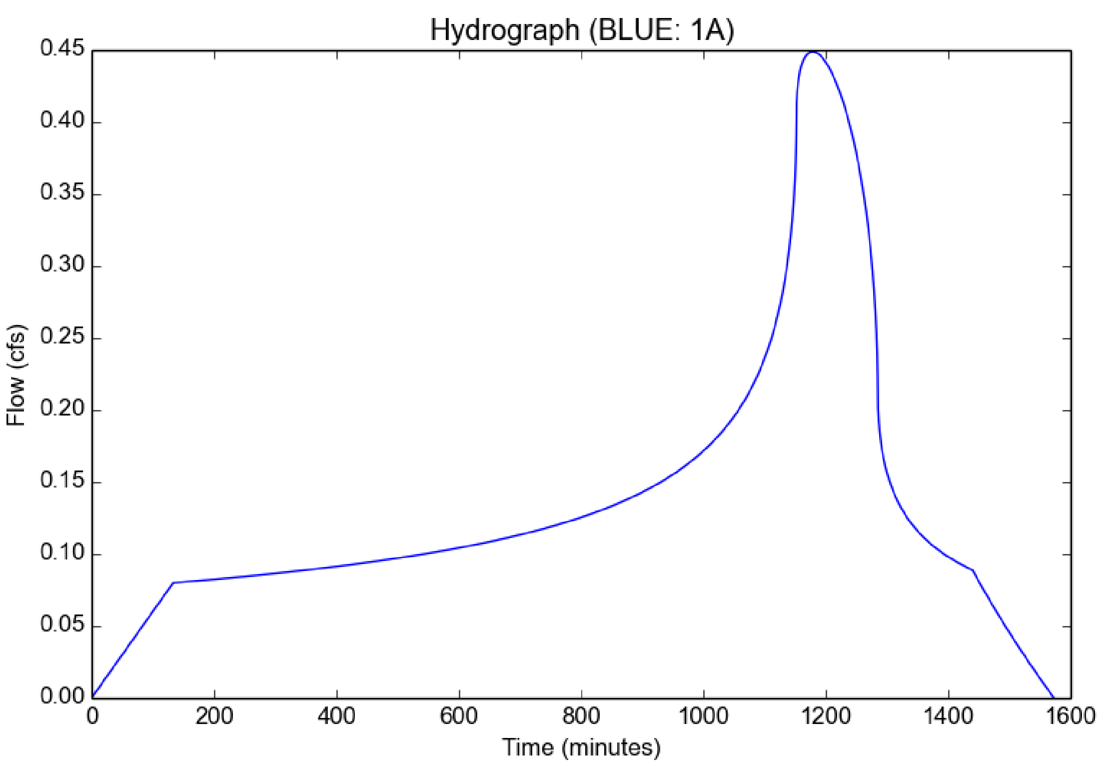
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	1A
Area (ac)	38.3
Flow Path Length (ft)	1583.0
Flow Path Slope (vft/hft)	0.239
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.1085
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.108
Time of Concentration (min)	133.0
Clear Peak Flow Rate (cfs)	0.4488
Burned Peak Flow Rate (cfs)	0.4488
24-Hr Clear Runoff Volume (ac-ft)	0.2906
24-Hr Clear Runoff Volume (cu-ft)	12660.4458



Peak Flow Hydrologic Analysis

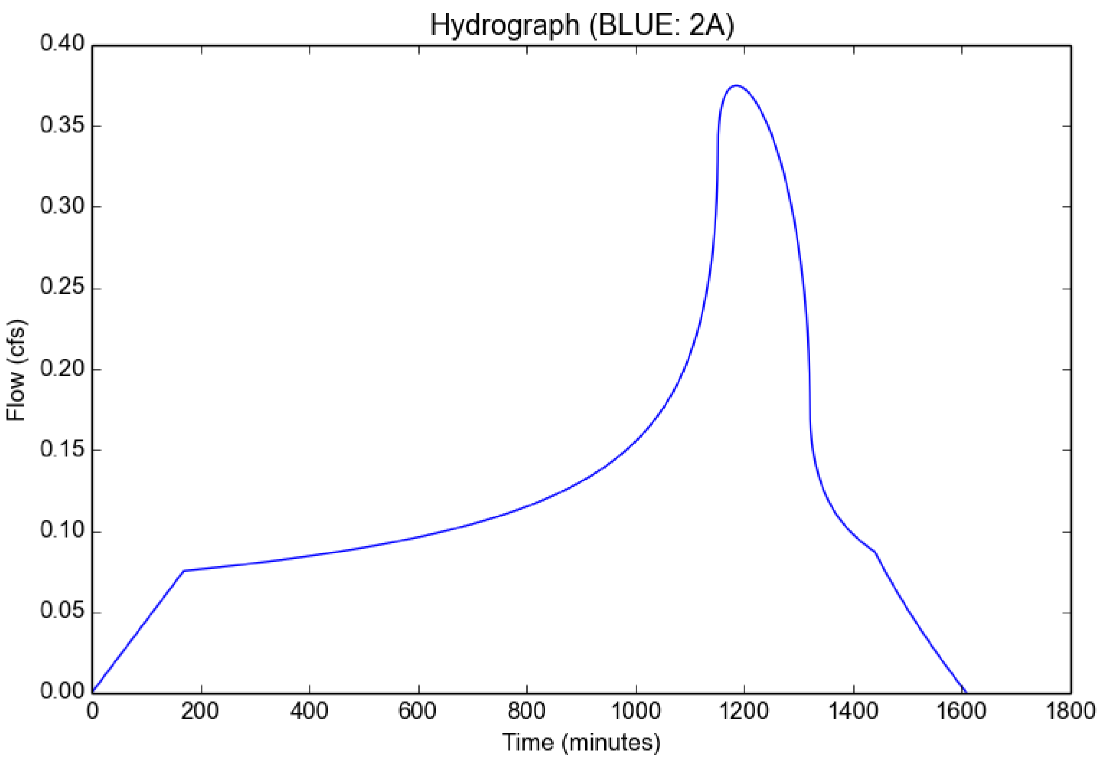
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	2A
Area (ac)	35.8
Flow Path Length (ft)	1984.0
Flow Path Slope (vft/hft)	0.137
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.0969
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.108
Time of Concentration (min)	169.0
Clear Peak Flow Rate (cfs)	0.3748
Burned Peak Flow Rate (cfs)	0.3748
24-Hr Clear Runoff Volume (ac-ft)	0.2717
24-Hr Clear Runoff Volume (cu-ft)	11835.9243



Peak Flow Hydrologic Analysis

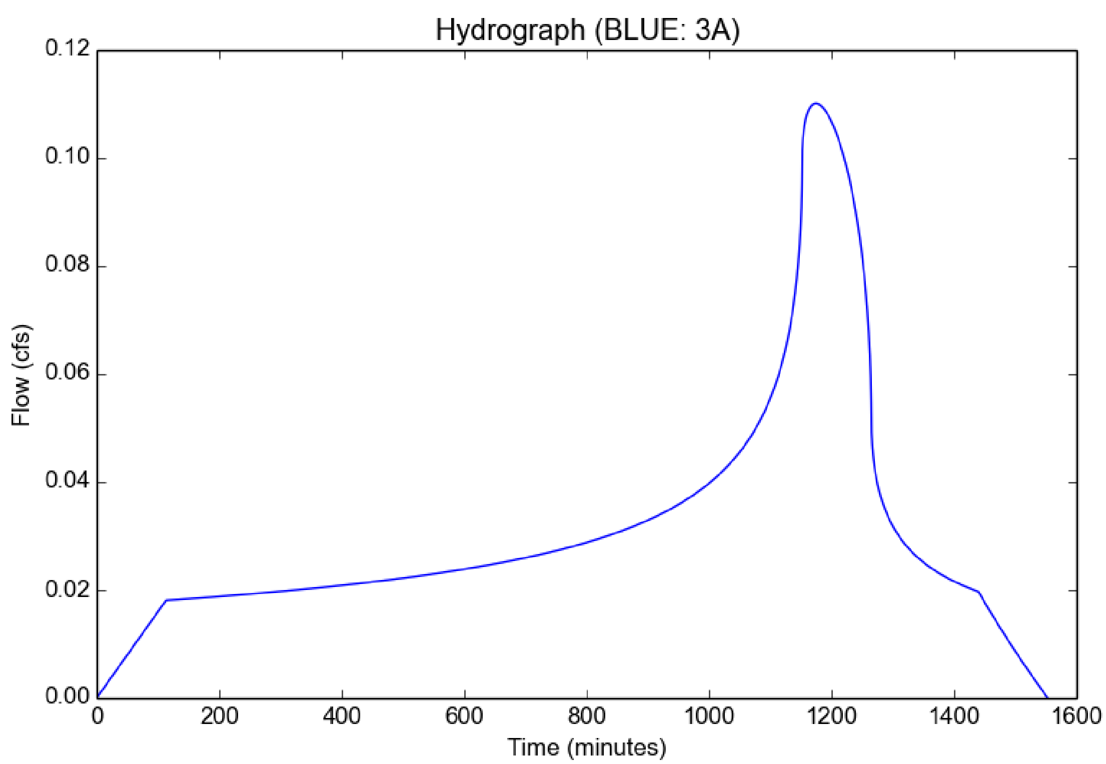
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	3A
Area (ac)	8.7
Flow Path Length (ft)	1267.0
Flow Path Slope (vft/hft)	0.262
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.1171
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.108
Time of Concentration (min)	113.0
Clear Peak Flow Rate (cfs)	0.1101
Burned Peak Flow Rate (cfs)	0.1101
24-Hr Clear Runoff Volume (ac-ft)	0.066
24-Hr Clear Runoff Volume (cu-ft)	2875.6711



Peak Flow Hydrologic Analysis

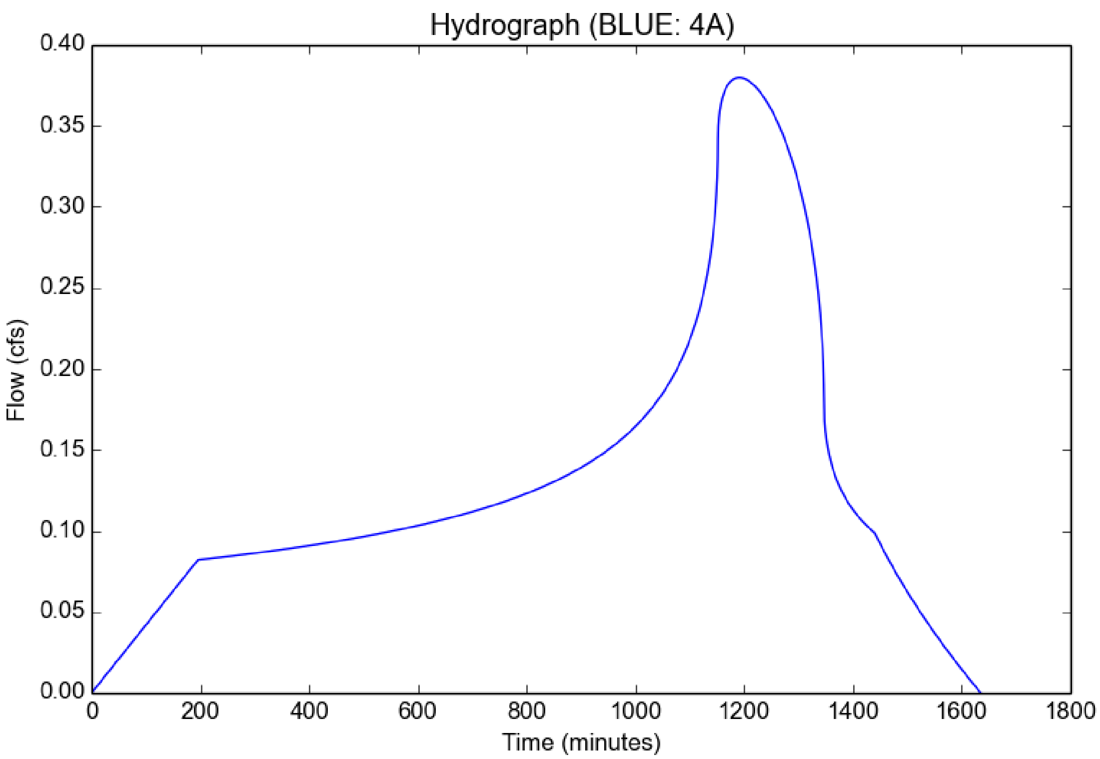
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	4A
Area (ac)	38.8
Flow Path Length (ft)	2601.0
Flow Path Slope (vft/hft)	0.161
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.0906
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.108
Time of Concentration (min)	195.0
Clear Peak Flow Rate (cfs)	0.3798
Burned Peak Flow Rate (cfs)	0.3798
24-Hr Clear Runoff Volume (ac-ft)	0.2945
24-Hr Clear Runoff Volume (cu-ft)	12829.594



Peak Flow Hydrologic Analysis

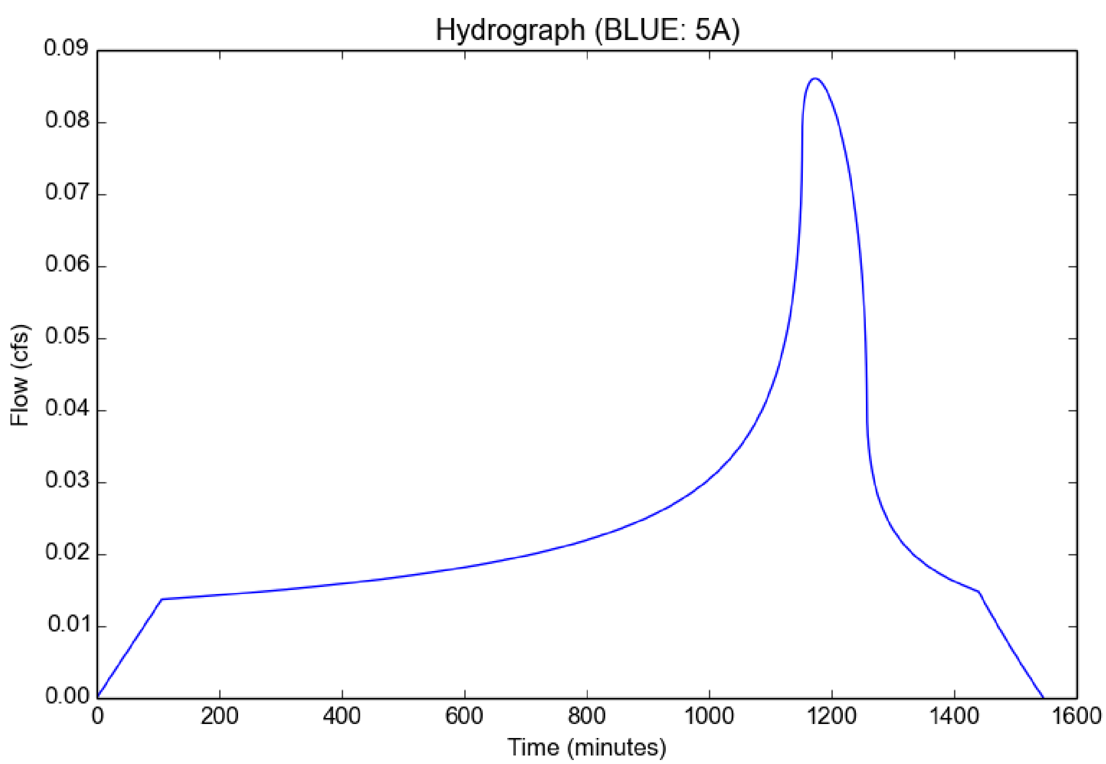
File location: C:/Users/eumirr/Documents/EX BLUE Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE
Subarea ID	5A
Area (ac)	6.6
Flow Path Length (ft)	994.0
Flow Path Slope (vft/hft)	0.157
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.1207
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.108
Time of Concentration (min)	106.0
Clear Peak Flow Rate (cfs)	0.086
Burned Peak Flow Rate (cfs)	0.086
24-Hr Clear Runoff Volume (ac-ft)	0.0501
24-Hr Clear Runoff Volume (cu-ft)	2181.4969



Program Package Serial Number: 2061

11/13/24 FILE: A50B INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat

BLUE CLOUD, EXIST 50-YR DESIGN BURN STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	80.74	38.3	80.74	2	1198.	.03800	.00	.00	0.	299	9	A28	.01
1	2A	35.8	64.79	74.1	138.65	2	288.	.03500	.00	.00	0.	299	12	A28	.01
1	3A	8.7	19.40	82.8	153.79	2	154.	.03900	.00	.00	0.	299	8	A28	.01
1	4A	38.8	64.64	121.6	217.10	2	485.	.04900	.00	.00	0.	299	14	A28	.01
1	5A	6.6	15.75	128.2	225.37	0	0.	.00000	.00	.00	0.	299	7	A28	.01

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, EXIST 50-YR DESIGN BURN, OUTLET HYD
HYDROGRAPH AT 1 5A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.60	100	2.84	200	2.95	300	3.10	400	3.27
500	3.51	600	3.77	700	4.09	800	4.56	900	5.23
1000	6.55	1050	13.24	1100	24.36	1110	31.38	1120	40.68
1130	50.74	1131	51.96	1132	53.20	1133	54.64	1134	56.16
1135	57.77	1136	59.28	1137	60.84	1138	62.52	1139	64.46
1140	66.45	1141	68.93	1142	71.75	1143	74.95	1144	78.30
1145	82.28	1146	86.88	1147	92.13	1148	97.34	1149	106.01
1150	119.09	1151	136.43	1152	156.21	1153	178.08	1154	197.68
1155	212.76	1156	221.14	1157	225.37	1158	224.92	1159	219.82
1160	211.29	1161	201.29	1162	188.25	1163	171.18	1164	150.55
1165	129.12	1166	108.53	1167	89.60	1168	74.29	1169	63.60
1170	56.45	1171	50.93	1172	46.54	1173	42.83	1174	39.75
1175	37.13	1176	34.79	1177	32.68	1178	30.86	1179	29.21
1180	27.60	1181	26.17	1182	24.95	1183	23.81	1184	22.79
1185	21.79	1186	20.87	1187	19.96	1188	19.09	1189	18.23
1190	17.48	1191	16.75	1192	16.06	1193	15.39	1194	14.80
1195	14.27	1196	13.69	1197	13.11	1198	12.66	1199	12.22
1200	11.72	1201	11.31	1202	10.84	1203	10.38	1204	10.01
1205	9.63	1206	9.27	1207	8.97	1208	8.59	1209	8.21
1210	7.88	1211	7.57	1212	7.30	1213	7.08	1214	6.88
1215	6.73	1216	6.60	1217	6.49	1218	6.40	1219	6.31
1220	6.22	1221	6.15	1222	6.08	1223	6.00	1224	5.94
1225	5.88	1226	5.83	1227	5.78	1228	5.74	1229	5.70
1230	5.66	1231	5.62	1232	5.57	1233	5.52	1234	5.49
1235	5.45	1236	5.42	1237	5.40	1238	5.36	1239	5.33
1240	5.28	1241	5.25	1242	5.22	1243	5.17	1244	5.14
1245	5.11	1246	5.09	1247	5.07	1248	5.04	1249	4.99
1250	4.98	1251	4.94	1252	4.92	1253	4.89	1254	4.86
1255	4.83	1256	4.82	1257	4.78	1258	4.75	1259	4.74
1260	4.70	1261	4.68	1262	4.66	1263	4.63	1264	4.61
1265	4.59	1266	4.56	1267	4.55	1268	4.53	1269	4.52
1270	4.50	1271	4.48	1272	4.46	1273	4.44	1274	4.41
1275	4.38	1276	4.37	1277	4.36	1278	4.35	1279	4.33
1280	4.32	1281	4.31	1282	4.30	1283	4.26	1284	4.24
1285	4.23	1286	4.22	1287	4.20	1288	4.20	1289	4.18
1290	4.17	1291	4.14	1292	4.11	1293	4.08	1294	4.06
1295	4.04	1296	4.04	1297	4.03	1298	4.01	1299	3.99
1300	3.98	1310	3.84	1320	3.76	1330	3.63	1340	3.49
1350	3.41	1360	3.38	1370	3.27	1380	3.20	1390	3.12
1400	3.06	1420	2.96	1440	2.84	1460	2.69	1500	2.69

TOTAL VOLUME THIS HYDROGRAPH = 17.67(Ac.Ft)

Program Package Serial Number: 2061
11/13/24   FILE: A50   INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units   PAGE   1

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT   PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat

BLUE CLOUD, EXIST 50-YR CLEAR   STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	78.37	38.3	78.37	2	1198.	.03800	.00	.00	0.	99	9	A28	.01
1	2A	35.8	62.72	74.1	134.17	2	288.	.03500	.00	.00	0.	99	12	A28	.01
1	3A	8.7	18.85	82.8	148.73	2	154.	.03900	.00	.00	0.	99	8	A28	.01
1	4A	38.8	62.46	121.6	209.84	2	485.	.04900	.00	.00	0.	99	14	A28	.01
1	5A	6.6	15.32	128.2	217.64	0	0.	.00000	.00	.00	0.	99	7	A28	.01

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, EXIST 50-YR CLEAR, OUTLET HYD
HYDROGRAPH AT 1 5A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.60	100	1.75	200	1.82	300	1.91	400	2.02
500	2.16	600	2.31	700	2.51	800	2.79	900	3.19
1000	4.08	1050	10.43	1100	21.22	1110	27.90	1120	36.90
1130	46.64	1131	47.81	1132	49.00	1133	50.40	1134	51.87
1135	53.43	1136	54.91	1137	56.43	1138	58.05	1139	59.93
1140	61.86	1141	64.28	1142	67.00	1143	70.12	1144	73.38
1145	77.26	1146	81.74	1147	86.86	1148	91.96	1149	100.41
1150	113.13	1151	130.06	1152	149.41	1153	170.85	1154	190.11
1155	205.01	1156	213.34	1157	217.64	1158	217.28	1159	212.50
1160	204.23	1161	194.53	1162	181.86	1163	165.24	1164	145.12
1165	124.18	1166	104.07	1167	85.53	1168	70.51	1169	59.96
1170	52.91	1171	47.46	1172	43.16	1173	39.52	1174	36.48
1175	33.93	1176	31.64	1177	29.57	1178	27.77	1179	26.18
1180	24.63	1181	23.23	1182	22.04	1183	20.90	1184	19.93
1185	18.97	1186	18.08	1187	17.20	1188	16.36	1189	15.52
1190	14.79	1191	14.08	1192	13.41	1193	12.76	1194	12.19
1195	11.67	1196	11.11	1197	10.53	1198	10.11	1199	9.68
1200	9.21	1201	8.82	1202	8.37	1203	7.93	1204	7.57
1205	7.20	1206	6.85	1207	6.56	1208	6.20	1209	5.85
1210	5.53	1211	5.23	1212	4.97	1213	4.75	1214	4.57
1215	4.42	1216	4.29	1217	4.18	1218	4.08	1219	4.00
1220	3.93	1221	3.87	1222	3.81	1223	3.75	1224	3.70
1225	3.66	1226	3.62	1227	3.58	1228	3.55	1229	3.52
1230	3.49	1231	3.46	1232	3.43	1233	3.40	1234	3.38
1235	3.35	1236	3.33	1237	3.32	1238	3.29	1239	3.27
1240	3.25	1241	3.22	1242	3.21	1243	3.18	1244	3.16
1245	3.14	1246	3.13	1247	3.11	1248	3.09	1249	3.07
1250	3.06	1251	3.04	1252	3.02	1253	3.00	1254	2.99
1255	2.97	1256	2.96	1257	2.94	1258	2.92	1259	2.91
1260	2.89	1261	2.88	1262	2.86	1263	2.85	1264	2.83
1265	2.82	1266	2.80	1267	2.80	1268	2.79	1269	2.78
1270	2.76	1271	2.75	1272	2.74	1273	2.73	1274	2.71
1275	2.69	1276	2.69	1277	2.68	1278	2.67	1279	2.66
1280	2.65	1281	2.65	1282	2.64	1283	2.62	1284	2.61
1285	2.60	1286	2.59	1287	2.58	1288	2.58	1289	2.57
1290	2.56	1291	2.55	1292	2.53	1293	2.51	1294	2.50
1295	2.49	1296	2.49	1297	2.48	1298	2.47	1299	2.46
1300	2.45	1310	2.37	1320	2.31	1330	2.24	1340	2.16
1350	2.10	1360	2.08	1370	2.02	1380	1.98	1390	1.93
1400	1.89	1420	1.83	1440	1.76	1460	1.66	1500	1.66

TOTAL VOLUME THIS HYDROGRAPH = 14.17(Ac.Ft)

Program Package Serial Number: 2061

11/13/24 FILE: A25 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat

BLUE CLOUD, EXIST 25-YR CLEAR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	62.27	38.3	62.27	2	1198.	.03800	.00	.00	0.	99	10	A24	.01
1	2A	35.8	49.85	74.1	106.48	2	288.	.03500	.00	.00	0.	99	13	A24	.01
1	3A	8.7	14.88	82.8	118.43	2	154.	.03900	.00	.00	0.	99	9	A24	.01
1	4A	38.8	48.24	121.6	164.79	2	485.	.04900	.00	.00	0.	99	16	A24	.01
1	5A	6.6	11.93	128.2	172.16	0	0.	.00000	.00	.00	0.	99	8	A24	.01

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, EXIST 25-YR CLEAR, OUTLET HYD
HYDROGRAPH AT   1   5A   STORM DAY 4   REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.60	100	1.50	200	1.56	300	1.64	400	1.73
500	1.85	600	1.98	700	2.15	800	2.39	900	2.73
1000	3.30	1050	5.71	1100	14.01	1110	19.39	1120	27.21
1130	35.72	1131	36.65	1132	37.62	1133	38.68	1134	39.84
1135	41.08	1136	42.38	1137	43.73	1138	45.12	1139	46.51
1140	48.04	1141	49.81	1142	51.78	1143	54.16	1144	56.68
1145	59.70	1146	63.21	1147	67.19	1148	71.36	1149	77.74
1150	87.23	1151	99.84	1152	114.60	1153	130.68	1154	145.56
1155	157.51	1156	166.09	1157	170.64	1158	172.16	1159	170.51
1160	166.15	1161	159.69	1162	152.31	1163	142.84	1164	131.44
1165	118.12	1166	102.88	1167	87.32	1168	72.89	1169	60.29
1170	50.12	1171	42.92	1172	37.95	1173	34.08	1174	30.94
1175	28.13	1176	25.80	1177	23.74	1178	21.88	1179	20.30
1180	18.87	1181	17.65	1182	16.49	1183	15.43	1184	14.43
1185	13.56	1186	12.81	1187	11.99	1188	11.22	1189	10.48
1190	9.72	1191	9.11	1192	8.55	1193	8.04	1194	7.50
1195	7.00	1196	6.50	1197	6.05	1198	5.67	1199	5.35
1200	5.07	1201	4.83	1202	4.63	1203	4.46	1204	4.31
1205	4.18	1206	4.07	1207	3.96	1208	3.87	1209	3.79
1210	3.71	1211	3.65	1212	3.59	1213	3.54	1214	3.49
1215	3.44	1216	3.40	1217	3.36	1218	3.33	1219	3.30
1220	3.26	1221	3.22	1222	3.20	1223	3.17	1224	3.14
1225	3.12	1226	3.09	1227	3.07	1228	3.04	1229	3.02
1230	2.99	1231	2.97	1232	2.95	1233	2.93	1234	2.91
1235	2.88	1236	2.86	1237	2.84	1238	2.83	1239	2.80
1240	2.79	1241	2.77	1242	2.76	1243	2.74	1244	2.71
1245	2.69	1246	2.68	1247	2.66	1248	2.65	1249	2.63
1250	2.62	1251	2.60	1252	2.60	1253	2.58	1254	2.57
1255	2.56	1256	2.55	1257	2.53	1258	2.52	1259	2.51
1260	2.50	1261	2.49	1262	2.47	1263	2.46	1264	2.45
1265	2.45	1266	2.43	1267	2.42	1268	2.41	1269	2.40
1270	2.39	1271	2.37	1272	2.36	1273	2.34	1274	2.34
1275	2.33	1276	2.32	1277	2.31	1278	2.30	1279	2.29
1280	2.28	1281	2.27	1282	2.26	1283	2.25	1284	2.24
1285	2.23	1286	2.22	1287	2.21	1288	2.20	1289	2.19
1290	2.18	1291	2.18	1292	2.17	1293	2.16	1294	2.15
1295	2.15	1296	2.14	1297	2.13	1298	2.12	1299	2.11
1300	2.11	1310	2.03	1320	1.96	1330	1.92	1340	1.89
1350	1.82	1360	1.77	1370	1.73	1380	1.69	1390	1.67
1400	1.64	1420	1.56	1440	1.52	1460	1.42	1500	1.42

TOTAL VOLUME THIS HYDROGRAPH =   11.19(Ac.Ft)

Program Package Serial Number: 2061
11/13/24 FILE: A10 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat

BLUE CLOUD, EXIST 10-YR CLEAR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	44.52	38.3	44.52	2	1198.	.03800	.00	.00	0.	99	12	A20	.01
1	2A	35.8	35.42	74.1	76.57	2	288.	.03500	.00	.00	0.	99	16	A20	.01
1	3A	8.7	11.34	82.8	85.79	2	154.	.03900	.00	.00	0.	99	10	A20	.01
1	4A	38.8	34.63	121.6	119.50	2	485.	.04900	.00	.00	0.	99	19	A20	.01
1	5A	6.6	8.60	128.2	125.50	0	0.	.00000	.00	.00	0.	99	10	A20	.01

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, EXIST 10-YR CLEAR, OUTLET HYD
HYDROGRAPH AT 1 5A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.60	100	1.25	200	1.30	300	1.37	400	1.44
500	1.54	600	1.65	700	1.80	800	1.99	900	2.28
1000	2.75	1050	3.35	1100	7.30	1110	11.17	1120	17.35
1130	24.38	1131	25.05	1132	25.78	1133	26.55	1134	27.37
1135	28.28	1136	29.23	1137	30.32	1138	31.53	1139	32.80
1140	34.10	1141	35.45	1142	36.88	1143	38.51	1144	40.23
1145	42.23	1146	44.62	1147	47.34	1148	50.35	1149	54.89
1150	61.32	1151	69.86	1152	79.89	1153	91.05	1154	101.50
1155	110.11	1156	116.61	1157	121.43	1158	124.71	1159	125.50
1160	124.35	1161	121.38	1162	117.32	1163	112.48	1164	107.67
1165	102.24	1166	95.89	1167	88.39	1168	79.51	1169	69.42
1170	59.07	1171	49.36	1172	40.80	1173	33.69	1174	28.50
1175	24.83	1176	22.00	1177	19.58	1178	17.46	1179	15.73
1180	14.25	1181	12.91	1182	11.68	1183	10.60	1184	9.68
1185	8.82	1186	8.03	1187	7.29	1188	6.67	1189	6.12
1190	5.65	1191	5.28	1192	4.97	1193	4.70	1194	4.47
1195	4.28	1196	4.12	1197	3.97	1198	3.85	1199	3.74
1200	3.64	1201	3.55	1202	3.48	1203	3.41	1204	3.35
1205	3.29	1206	3.23	1207	3.19	1208	3.14	1209	3.09
1210	3.05	1211	3.02	1212	2.98	1213	2.94	1214	2.91
1215	2.88	1216	2.85	1217	2.81	1218	2.78	1219	2.75
1220	2.73	1221	2.70	1222	2.68	1223	2.66	1224	2.64
1225	2.62	1226	2.60	1227	2.58	1228	2.56	1229	2.54
1230	2.52	1231	2.51	1232	2.49	1233	2.47	1234	2.46
1235	2.44	1236	2.43	1237	2.41	1238	2.40	1239	2.38
1240	2.37	1241	2.35	1242	2.33	1243	2.32	1244	2.30
1245	2.27	1246	2.26	1247	2.25	1248	2.23	1249	2.22
1250	2.21	1251	2.19	1252	2.18	1253	2.17	1254	2.16
1255	2.15	1256	2.14	1257	2.13	1258	2.11	1259	2.10
1260	2.09	1261	2.08	1262	2.07	1263	2.07	1264	2.06
1265	2.04	1266	2.04	1267	2.03	1268	2.02	1269	2.01
1270	2.00	1271	1.99	1272	1.99	1273	1.97	1274	1.96
1275	1.96	1276	1.95	1277	1.94	1278	1.93	1279	1.92
1280	1.91	1281	1.90	1282	1.90	1283	1.89	1284	1.88
1285	1.87	1286	1.87	1287	1.85	1288	1.85	1289	1.84
1290	1.83	1291	1.83	1292	1.82	1293	1.82	1294	1.81
1295	1.81	1296	1.80	1297	1.79	1298	1.78	1299	1.78
1300	1.77	1310	1.70	1320	1.65	1330	1.61	1340	1.56
1350	1.53	1360	1.48	1370	1.44	1380	1.42	1390	1.39
1400	1.36	1420	1.31	1440	1.27	1460	1.18	1500	1.18

TOTAL VOLUME THIS HYDROGRAPH = 8.50(Ac.Ft)

Program Package Serial Number: 2061

11/13/24 FILE: A5 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat

BLUE CLOUD, EXIST 5-YR CLEAR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	29.60	38.3	29.60	2	1198.	.03800	.00	.00	0.	99	15	A16	.01
1	2A	35.8	22.93	74.1	50.43	2	288.	.03500	.00	.00	0.	99	20	A16	.01
1	3A	8.7	7.30	82.8	56.58	2	154.	.03900	.00	.00	0.	99	13	A16	.01
1	4A	38.8	22.12	121.6	78.25	2	485.	.04900	.00	.00	0.	99	24	A16	.01
1	5A	6.6	5.82	128.2	82.46	0	0.	.00000	.00	.00	0.	99	12	A16	.01

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, EXIST 5-YR CLEAR, OUTLET HYD
HYDROGRAPH AT 1 5A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.60	100	1.00	200	1.04	300	1.09	400	1.15
500	1.23	600	1.32	700	1.44	800	1.59	900	1.82
1000	2.20	1050	2.68	1100	3.41	1110	4.24	1120	7.33
1130	12.58	1131	13.13	1132	13.68	1133	14.29	1134	14.91
1135	15.59	1136	16.29	1137	17.02	1138	17.81	1139	18.69
1140	19.63	1141	20.70	1142	21.86	1143	23.10	1144	24.44
1145	25.85	1146	27.42	1147	29.21	1148	31.13	1149	33.95
1150	37.77	1151	42.88	1152	49.04	1153	55.95	1154	62.55
1155	68.30	1156	72.87	1157	76.51	1158	79.34	1159	81.32
1160	82.46	1161	82.22	1162	81.29	1163	79.53	1164	77.14
1165	74.30	1166	71.60	1167	68.64	1168	65.49	1169	62.11
1170	58.24	1171	53.72	1172	48.68	1173	43.32	1174	37.46
1175	31.55	1176	26.11	1177	21.29	1178	17.16	1179	14.02
1180	11.84	1181	10.13	1182	8.66	1183	7.45	1184	6.63
1185	5.98	1186	5.46	1187	5.04	1188	4.69	1189	4.40
1190	4.15	1191	3.96	1192	3.80	1193	3.65	1194	3.52
1195	3.40	1196	3.30	1197	3.20	1198	3.12	1199	3.04
1200	2.97	1201	2.91	1202	2.86	1203	2.80	1204	2.75
1205	2.70	1206	2.66	1207	2.62	1208	2.59	1209	2.55
1210	2.52	1211	2.49	1212	2.46	1213	2.43	1214	2.40
1215	2.37	1216	2.34	1217	2.32	1218	2.29	1219	2.26
1220	2.24	1221	2.22	1222	2.20	1223	2.18	1224	2.16
1225	2.14	1226	2.12	1227	2.11	1228	2.09	1229	2.07
1230	2.06	1231	2.04	1232	2.02	1233	2.01	1234	1.99
1235	1.98	1236	1.97	1237	1.95	1238	1.94	1239	1.92
1240	1.91	1241	1.89	1242	1.88	1243	1.87	1244	1.86
1245	1.85	1246	1.84	1247	1.84	1248	1.83	1249	1.81
1250	1.80	1251	1.79	1252	1.78	1253	1.77	1254	1.75
1255	1.74	1256	1.73	1257	1.72	1258	1.71	1259	1.70
1260	1.70	1261	1.69	1262	1.68	1263	1.68	1264	1.67
1265	1.66	1266	1.66	1267	1.64	1268	1.63	1269	1.62
1270	1.61	1271	1.60	1272	1.59	1273	1.58	1274	1.58
1275	1.57	1276	1.57	1277	1.57	1278	1.56	1279	1.56
1280	1.55	1281	1.54	1282	1.53	1283	1.52	1284	1.52
1285	1.51	1286	1.50	1287	1.50	1288	1.50	1289	1.49
1290	1.48	1291	1.47	1292	1.47	1293	1.46	1294	1.46
1295	1.45	1296	1.45	1297	1.44	1298	1.44	1299	1.43
1300	1.43	1310	1.38	1320	1.34	1330	1.29	1340	1.26
1350	1.23	1360	1.20	1370	1.16	1380	1.12	1390	1.09
1400	1.08	1420	1.06	1440	1.02	1460	.95	1500	.95

TOTAL VOLUME THIS HYDROGRAPH = 6.10(Ac.Ft)

Program Package Serial Number: 2061

11/13/24 FILE: A2 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat

BLUE CLOUD, EXIST 2-YR CLEAR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	12.11	38.3	12.11	2	1198.	.03800	.00	.00	0.	99	25	A11	.01
1	2A	35.8	9.76	74.1	21.01	2	288.	.03500	.00	.00	0.	99	30	A11	.01
1	3A	8.7	3.24	82.8	23.78	2	154.	.03900	.00	.00	0.	99	20	A11	.01
1	4A	38.8	10.58	121.6	33.99	2	485.	.04900	.00	.00	0.	99	30	A11	.01
1	5A	6.6	2.55	128.2	36.02	0	0.	.00000	.00	.00	0.	99	19	A11	.01

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, EXIST 2-YR CLEAR, OUTLET HYD
HYDROGRAPH AT 1 5A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.60	100	.69	200	.71	300	.75	400	.79
500	.84	600	.91	700	.99	800	1.09	900	1.25
1000	1.50	1050	1.83	1100	2.34	1110	2.50	1120	2.78
1130	3.17	1131	3.21	1132	3.26	1133	3.30	1134	3.36
1135	3.44	1136	3.52	1137	3.62	1138	3.72	1139	3.87
1140	4.05	1141	4.34	1142	4.69	1143	5.12	1144	5.63
1145	6.21	1146	6.90	1147	7.71	1148	8.61	1149	9.85
1150	11.47	1151	13.71	1152	16.47	1153	19.62	1154	22.76
1155	25.58	1156	27.88	1157	29.76	1158	31.36	1159	32.74
1160	33.92	1161	34.85	1162	35.53	1163	35.89	1164	36.02
1165	35.93	1166	35.67	1167	35.27	1168	34.53	1169	33.67
1170	32.65	1171	31.45	1172	30.15	1173	29.01	1174	27.86
1175	26.74	1176	25.64	1177	24.51	1178	23.30	1179	21.97
1180	20.22	1181	18.03	1182	15.55	1183	13.04	1184	10.85
1185	9.09	1186	7.69	1187	6.61	1188	5.77	1189	5.13
1190	4.62	1191	4.21	1192	3.87	1193	3.59	1194	3.35
1195	3.15	1196	2.99	1197	2.84	1198	2.71	1199	2.59
1200	2.49	1201	2.40	1202	2.32	1203	2.26	1204	2.19
1205	2.13	1206	2.08	1207	2.04	1208	1.99	1209	1.95
1210	1.91	1211	1.88	1212	1.85	1213	1.82	1214	1.79
1215	1.76	1216	1.74	1217	1.72	1218	1.69	1219	1.67
1220	1.65	1221	1.63	1222	1.61	1223	1.59	1224	1.58
1225	1.56	1226	1.54	1227	1.53	1228	1.51	1229	1.50
1230	1.48	1231	1.47	1232	1.46	1233	1.45	1234	1.43
1235	1.42	1236	1.41	1237	1.40	1238	1.39	1239	1.38
1240	1.37	1241	1.36	1242	1.35	1243	1.34	1244	1.33
1245	1.32	1246	1.31	1247	1.30	1248	1.29	1249	1.28
1250	1.27	1251	1.27	1252	1.26	1253	1.25	1254	1.24
1255	1.24	1256	1.23	1257	1.22	1258	1.21	1259	1.21
1260	1.20	1261	1.19	1262	1.19	1263	1.18	1264	1.17
1265	1.17	1266	1.16	1267	1.15	1268	1.15	1269	1.14
1270	1.14	1271	1.13	1272	1.13	1273	1.12	1274	1.11
1275	1.11	1276	1.11	1277	1.10	1278	1.10	1279	1.09
1280	1.09	1281	1.08	1282	1.08	1283	1.07	1284	1.07
1285	1.06	1286	1.06	1287	1.05	1288	1.05	1289	1.04
1290	1.04	1291	1.04	1292	1.03	1293	1.03	1294	1.02
1295	1.02	1296	1.01	1297	1.01	1298	1.01	1299	1.01
1300	1.00	1310	.96	1320	.94	1330	.91	1340	.88
1350	.85	1360	.83	1370	.81	1380	.80	1390	.78
1400	.76	1420	.73	1440	.71	1460	.65	1500	.65

TOTAL VOLUME THIS HYDROGRAPH = 3.54(Ac.Ft)

Program Package Serial Number: 2061
11/13/24 FILE: LID INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat

BLUE CLOUD, EXIST 85TH PERCENTILE CLEAR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	8.77	38.3	8.77	2	1198.	.03800	.00	.00	0.	99	30	A 4	.01
1	2A	35.8	8.19	74.1	16.13	2	288.	.03500	.00	.00	0.	99	30	A 4	.01
1	3A	8.7	1.99	82.8	17.98	2	154.	.03900	.00	.00	0.	99	30	A 4	.01
1	4A	38.8	8.88	121.6	26.36	2	485.	.04900	.00	.00	0.	99	30	A 4	.01
1	5A	6.6	1.51	128.2	27.72	0	0.	.00000	.00	.00	0.	99	30	A 4	.01

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M
MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, EXIST 85TH PERCENTILE CLEAR, OUTLET HYD
HYDROGRAPH AT 1 5A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.60	100	.62	200	.65	300	.68	400	.72
500	.77	600	.82	700	.90	800	.99	900	1.14
1000	1.37	1050	1.66	1100	2.13	1110	2.26	1120	2.48
1130	2.84	1131	2.88	1132	2.92	1133	2.96	1134	3.00
1135	3.04	1136	3.09	1137	3.13	1138	3.18	1139	3.23
1140	3.29	1141	3.35	1142	3.41	1143	3.51	1144	3.66
1145	3.91	1146	4.26	1147	4.75	1148	5.35	1149	6.17
1150	7.28	1151	8.89	1152	10.91	1153	13.32	1154	15.88
1155	18.28	1156	20.22	1157	21.82	1158	23.13	1159	24.28
1160	25.29	1161	26.16	1162	26.84	1163	27.31	1164	27.60
1165	27.71	1166	27.72	1167	27.63	1168	27.42	1169	27.08
1170	26.65	1171	26.17	1172	25.63	1173	25.01	1174	24.31
1175	23.53	1176	22.63	1177	21.64	1178	20.58	1179	19.31
1180	17.68	1181	15.66	1182	13.58	1183	11.70	1184	10.22
1185	9.04	1186	8.12	1187	7.38	1188	6.72	1189	6.12
1190	5.56	1191	5.04	1192	4.59	1193	4.19	1194	3.84
1195	3.54	1196	3.29	1197	3.08	1198	2.89	1199	2.73
1200	2.59	1201	2.47	1202	2.36	1203	2.27	1204	2.18
1205	2.11	1206	2.04	1207	1.98	1208	1.93	1209	1.88
1210	1.84	1211	1.80	1212	1.76	1213	1.73	1214	1.69
1215	1.66	1216	1.64	1217	1.61	1218	1.59	1219	1.56
1220	1.54	1221	1.52	1222	1.50	1223	1.48	1224	1.47
1225	1.45	1226	1.43	1227	1.42	1228	1.40	1229	1.39
1230	1.37	1231	1.36	1232	1.35	1233	1.34	1234	1.33
1235	1.32	1236	1.31	1237	1.30	1238	1.28	1239	1.27
1240	1.26	1241	1.25	1242	1.24	1243	1.23	1244	1.22
1245	1.21	1246	1.20	1247	1.20	1248	1.19	1249	1.18
1250	1.17	1251	1.16	1252	1.16	1253	1.15	1254	1.14
1255	1.14	1256	1.13	1257	1.12	1258	1.12	1259	1.11
1260	1.10	1261	1.10	1262	1.09	1263	1.09	1264	1.08
1265	1.07	1266	1.07	1267	1.06	1268	1.05	1269	1.05
1270	1.05	1271	1.04	1272	1.04	1273	1.03	1274	1.03
1275	1.02	1276	1.02	1277	1.01	1278	1.01	1279	1.00
1280	1.00	1281	.99	1282	.99	1283	.98	1284	.98
1285	.97	1286	.97	1287	.96	1288	.96	1289	.96
1290	.95	1291	.95	1292	.95	1293	.94	1294	.94
1295	.94	1296	.93	1297	.93	1298	.92	1299	.92
1300	.92	1310	.89	1320	.86	1330	.83	1340	.80
1350	.78	1360	.76	1370	.74	1380	.72	1390	.70
1400	.70	1420	.66	1440	.63	1460	.60	1500	.59

TOTAL VOLUME THIS HYDROGRAPH = 3.07(Ac.Ft)

B. Modified Rational Method of Hydrology (Proposed Condition)

1. Capital Storm Hydrologic Summary Table
2. TC Calculations
3. Storm Modified Rational Method of Hydrology (LAR04) Result and Hydrograph

2-yr Clear (DESIGN STORM)								JUNCTION	
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**2-Yr Depth** (in)	**2-Yr Tc** (min)	**Q_2** (cfs)	**Σarea** (ac)	**ΣQ_2** (cfs)
1A		38.3	0.01	99	2.1285	25	12.1	38.3	12.1
2A		35.3	0.01	99	2.1285	30	9.6	73.6	21.0
4A		38.4	0.01	99	2.1285	30	10.5	112	31.0
5A		4.1	0.01	99	2.1285	17	1.7	116.1	32.1
6B		7.9	0.01	99	2.1285	30	2.2	7.9	2.2
7B		4.2	0.02	99	2.1285	30	1.2	12.1	3.3
	8AB							128.2	35.3

50-yr BB										**JUNCTION**			
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**25/50-Yr Depth** (in)	**25/50-Yr Tc** (min)	**Q_{50}/Q_{50b}** (cfs)	**Q_{50bb}** (cfs)	**DPV** (cy)	**Σarea** (ac)	**ΣQ_{50b}** (cfs)	**ΣQ_{50bb}** (cfs)	**ΣDPV** (cy)
1A		38.3	0.01	299	5.5	9	80.7	109.8	2,124	38.3	80.7		
2A		35.3	0.01	299	5.5	12	63.9	86.9	1,958	73.6	138.6		
	2A									73.6	138.6	187.1	3,824
4A		38.4	0.01	299	5.5	14	64.0	87.0	2,130	112	200.8		
	4A									112	200.8	266.0	4,725
5A		4.1	0.01	299	5.5	7	9.8	13.3	227	116.1	205.7		
	5A									116.1	205.7	272.0	4,807
6B		7.9	0.01	299	5.5	11	15.0	20.4	438	7.9	15.0		
7B		4.2	0.02	99	5.5	11	7.8			12.1	22.8		
	8AB									128.2	226.5	296.0	4,944

50-yr Clear								**JUNCTION**	
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**50-Yr Depth** (in)	**50-Yr Tc** (min)	**Q_{50}** (cfs)	**Σarea** (ac)	**ΣQ_{50}** (cfs)
1A		38.3	0.01	99	5.5	9	78.4	38.3	78.4
2A		35.3	0.01	99	5.5	12	61.8	73.6	134.2
4A		38.4	0.01	99	5.5	14	61.8	112	194.1
5A		4.1	0.01	99	5.5	7	9.5	116.1	198.8
6B		7.9	0.01	99	5.5	11	14.6	7.9	14.6
7B		4.2	0.02	99	5.5	11	7.8	12.1	22.3
	8AB							128.2	219.2

25-yr Clear								JUNCTION	
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**25-Yr Depth** (in)	**25-Yr Tc** (min)	**Q_{25}** (cfs)	**Σarea** (ac)	**ΣQ_{25}** (cfs)
1A		38.3	0.01	99	4.829	10	62.3	38.3	62.3
2A		35.3	0.01	99	4.829	13	49.2	73.6	106.6
4A		38.4	0.01	99	4.829	15	49.5	112	153.8
5A		4.1	0.01	99	4.829	7	8.0	116.1	157.2
6B		7.9	0.01	99	4.829	12	11.5	7.9	11.5
7B		4.2	0.02	99	4.829	12	6.1	12.1	17.7
	8AB							128.2	173.7

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10-yr Clear								JUNCTION	
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**10-Yr Depth** (in)	**10-Yr Tc** (min)	**Q_{10}** (cfs)	**Σarea** (ac)	**ΣQ_{10}** (cfs)
1A		38.3	0.01	99	3.927	12	44.5	38.3	44.5
2A		35.3	0.01	99	3.927	16	34.9	73.6	76.6
4A		38.4	0.01	99	3.927	19	34.3	112	109.9
5A		4.1	0.01	99	3.927	9	5.6	116.1	112.9
6B		7.9	0.01	99	3.927	15	8.1	7.9	8.1
7B		4.2	0.02	99	3.927	15	4.3	12.1	12.5
	8AB							128.2	124.7

5-yr Clear								JUNCTION	
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**5-Yr Depth** (in)	**5-Yr Tc** (min)	**Q_{5}** (cfs)	**Σarea** (ac)	**ΣQ_{5}** (cfs)
1A		38.3	0.01	99	3.212	15	29.6	38.3	29.6
2A		35.3	0.01	99	3.212	19	23.4	73.6	51.0
4A		38.4	0.01	99	3.212	23	22.5	112	72.9
5A		4.1	0.01	99	3.212	11	3.8	116.1	75.3
6B		7.9	0.01	99	3.212	18	5.4	7.9	5.4
7B		4.2	0.02	99	3.212	18	2.9	12.1	8.3
	8AB							128.2	83.2

85th Percentile								**JUNCTION**	
Subarea	**Node**	**Area** (ac)	**Imp**	**Soil Type**	**LID Depth** (in)	**LID Tc** (min)	**Q_{LID}** (cfs)	**Σarea** (ac)	**ΣQ_{LID}** (cfs)
1A		38.3	0.01	99	0.85	30	8.8	38.3	8.8
2A		35.3	0.01	99	0.85	30	8.1	73.6	16.2
4A		38.4	0.01	99	0.85	30	8.8	112	24.4
5A		4.1	0.01	99	0.85	30	0.9	116.1	25.2
6B		7.9	0.01	99	0.85	30	1.8	7.9	1.8
7B		4.2	0.02	99	0.85	30	1.0	12.1	2.8
	8AB							128.2	27.8

Peak Flow Hydrologic Analysis

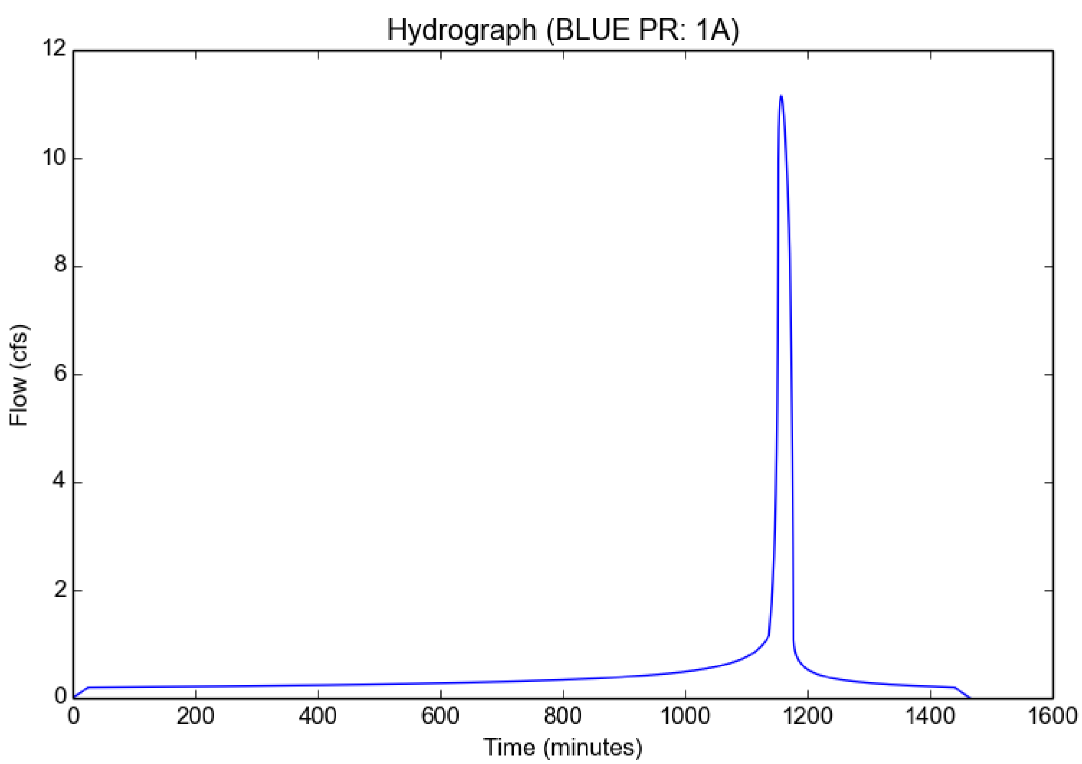
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	1A
Area (ac)	38.3
Flow Path Length (ft)	1583.0
Flow Path Slope (vft/hft)	0.239
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.1285
Peak Intensity (in/hr)	0.596
Undeveloped Runoff Coefficient (Cu)	0.4842
Developed Runoff Coefficient (Cd)	0.4884
Time of Concentration (min)	25.0
Clear Peak Flow Rate (cfs)	11.1487
Burned Peak Flow Rate (cfs)	11.1487
24-Hr Clear Runoff Volume (ac-ft)	0.998
24-Hr Clear Runoff Volume (cu-ft)	43472.5092



Peak Flow Hydrologic Analysis

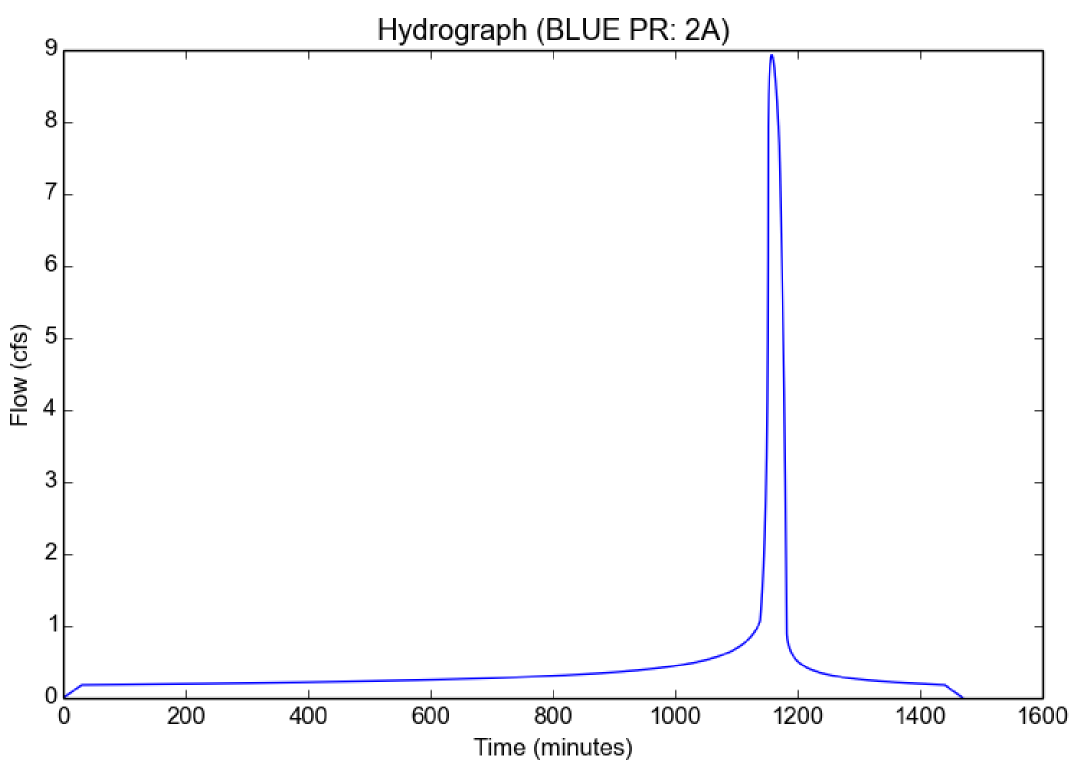
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	2A
Area (ac)	35.3
Flow Path Length (ft)	1919.0
Flow Path Slope (vft/hft)	0.141
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.1285
Peak Intensity (in/hr)	0.5471
Undeveloped Runoff Coefficient (Cu)	0.4578
Developed Runoff Coefficient (Cd)	0.4622
Time of Concentration (min)	30.0
Clear Peak Flow Rate (cfs)	8.9263
Burned Peak Flow Rate (cfs)	8.9263
24-Hr Clear Runoff Volume (ac-ft)	0.9102
24-Hr Clear Runoff Volume (cu-ft)	39647.27



Peak Flow Hydrologic Analysis

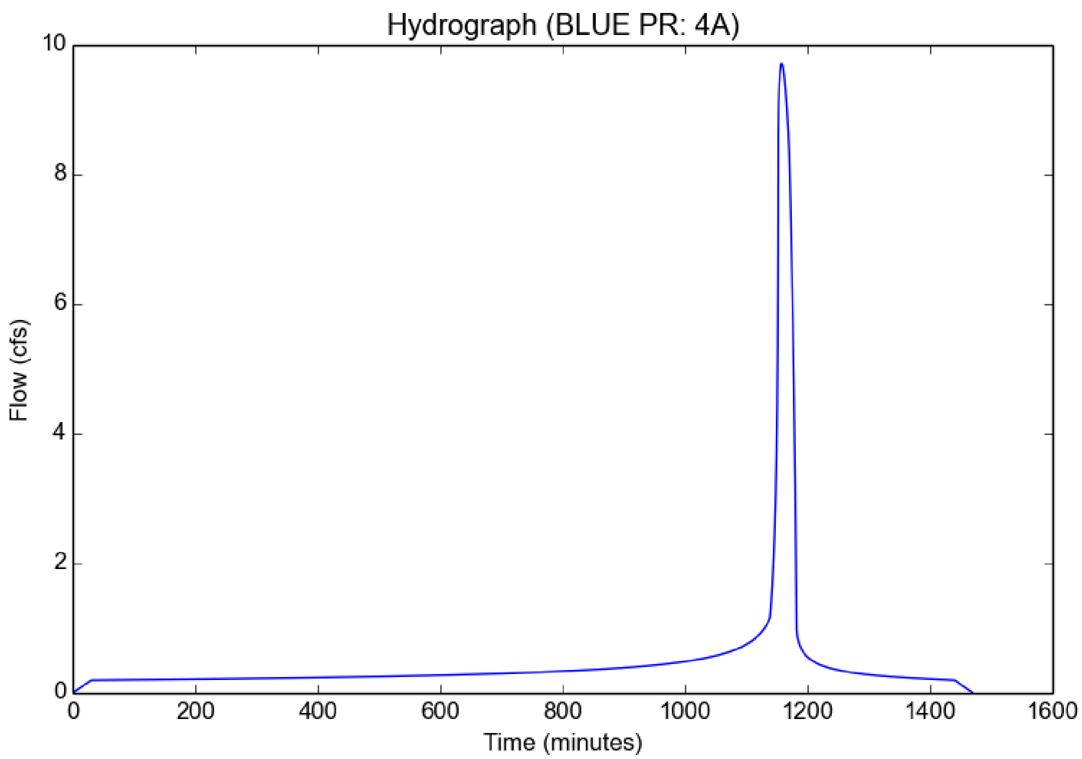
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	4A
Area (ac)	38.4
Flow Path Length (ft)	2544.0
Flow Path Slope (vft/hft)	0.165
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.1285
Peak Intensity (in/hr)	0.5471
Undeveloped Runoff Coefficient (Cu)	0.4578
Developed Runoff Coefficient (Cd)	0.4622
Time of Concentration (min)	30.0
Clear Peak Flow Rate (cfs)	9.7102
Burned Peak Flow Rate (cfs)	9.7102
24-Hr Clear Runoff Volume (ac-ft)	0.9901
24-Hr Clear Runoff Volume (cu-ft)	43129.0416



Peak Flow Hydrologic Analysis

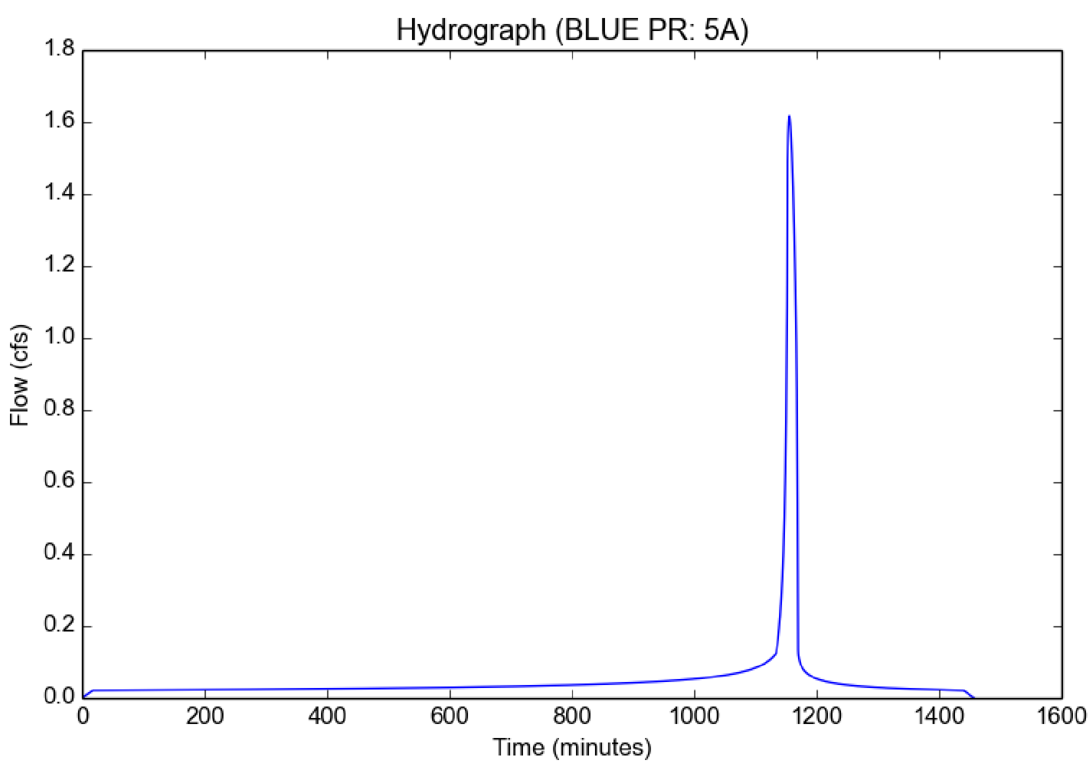
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	5A
Area (ac)	4.1
Flow Path Length (ft)	893.0
Flow Path Slope (vft/hft)	0.169
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.1285
Peak Intensity (in/hr)	0.7145
Undeveloped Runoff Coefficient (Cu)	0.5482
Developed Runoff Coefficient (Cd)	0.5517
Time of Concentration (min)	17.0
Clear Peak Flow Rate (cfs)	1.6161
Burned Peak Flow Rate (cfs)	1.6161
24-Hr Clear Runoff Volume (ac-ft)	0.1085
24-Hr Clear Runoff Volume (cu-ft)	4726.7084



Peak Flow Hydrologic Analysis

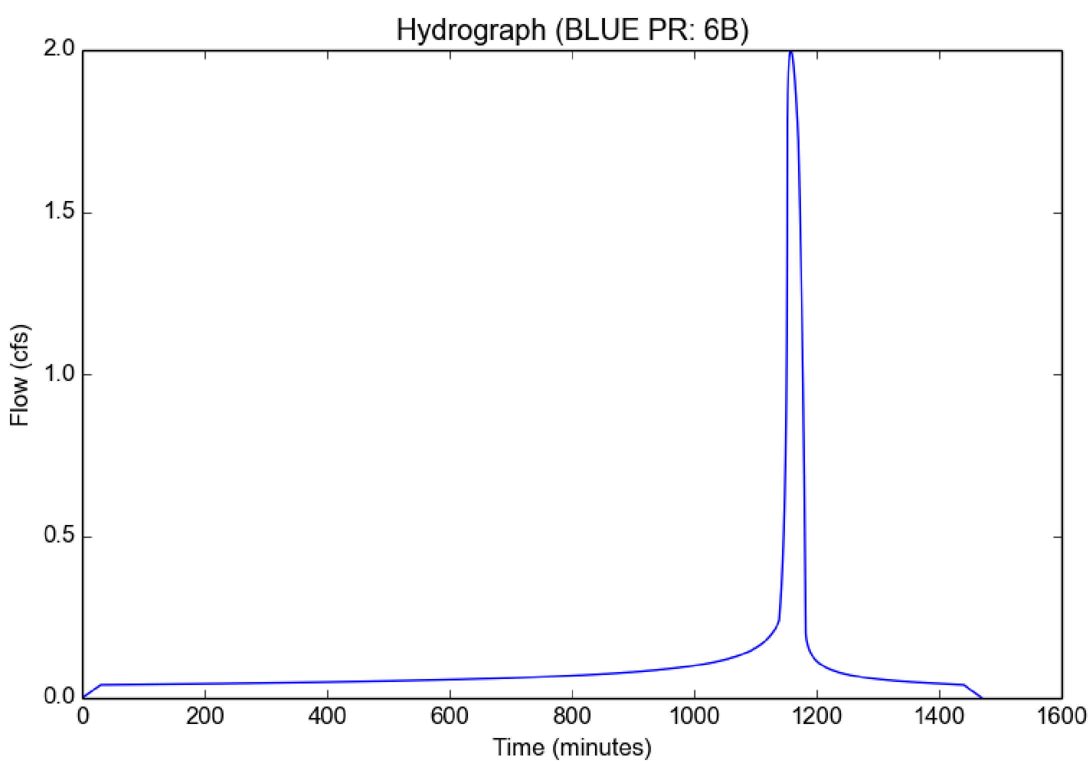
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	6B
Area (ac)	7.9
Flow Path Length (ft)	1944.0
Flow Path Slope (vft/hft)	0.185
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.1285
Peak Intensity (in/hr)	0.5471
Undeveloped Runoff Coefficient (Cu)	0.4578
Developed Runoff Coefficient (Cd)	0.4622
Time of Concentration (min)	30.0
Clear Peak Flow Rate (cfs)	1.9977
Burned Peak Flow Rate (cfs)	1.9977
24-Hr Clear Runoff Volume (ac-ft)	0.2037
24-Hr Clear Runoff Volume (cu-ft)	8872.9018



Peak Flow Hydrologic Analysis

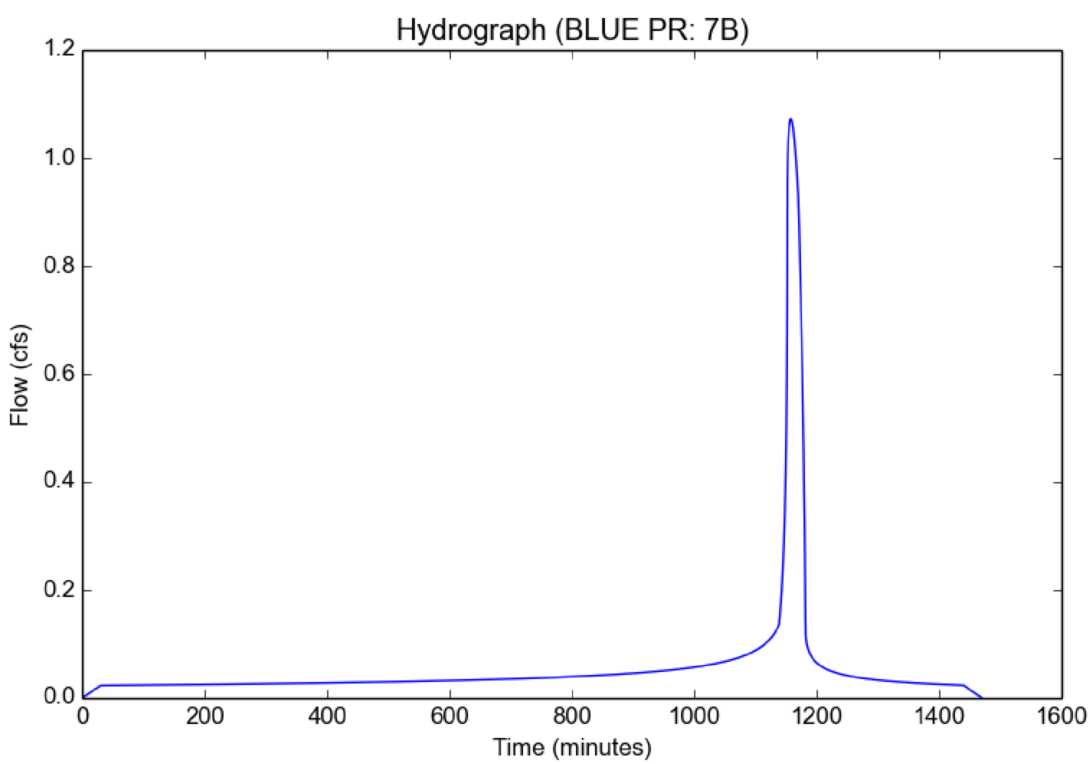
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	7B
Area (ac)	4.2
Flow Path Length (ft)	1223.0
Flow Path Slope (vft/hft)	0.043
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.02
Soil Type	99
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.1285
Peak Intensity (in/hr)	0.5471
Undeveloped Runoff Coefficient (Cu)	0.4578
Developed Runoff Coefficient (Cd)	0.4666
Time of Concentration (min)	30.0
Clear Peak Flow Rate (cfs)	1.0722
Burned Peak Flow Rate (cfs)	1.0722
24-Hr Clear Runoff Volume (ac-ft)	0.1139
24-Hr Clear Runoff Volume (cu-ft)	4962.1654



Peak Flow Hydrologic Analysis

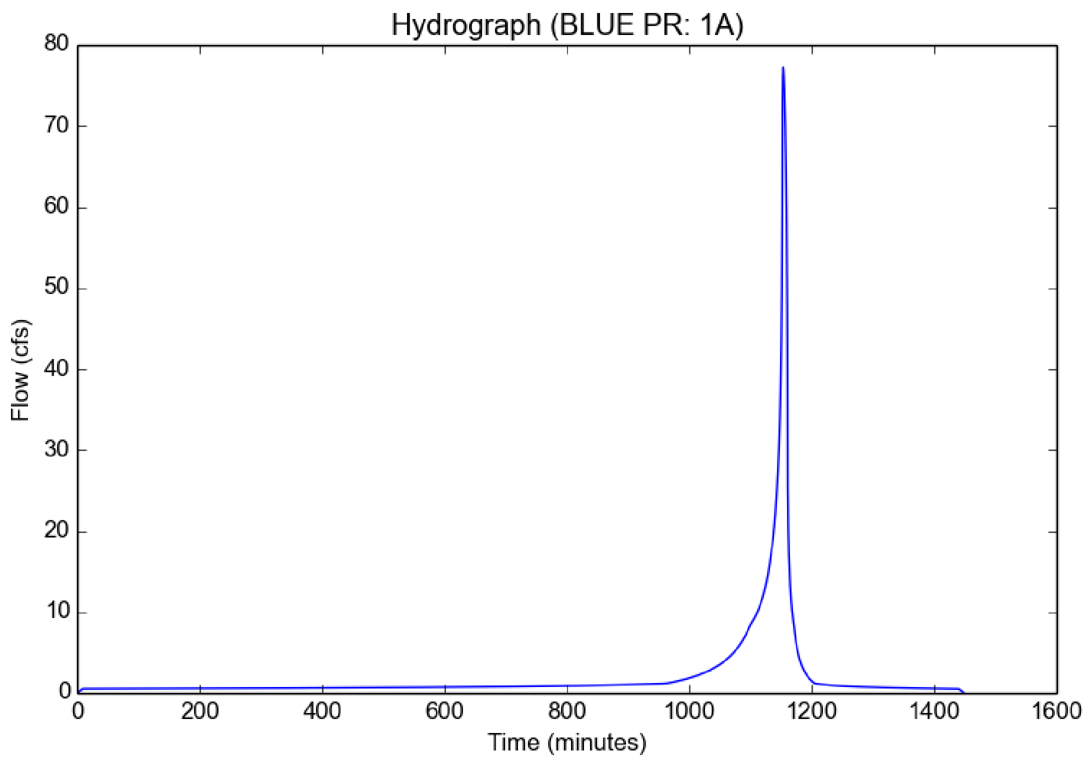
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	1A
Area (ac)	38.3
Flow Path Length (ft)	1583.0
Flow Path Slope (vft/hft)	0.239
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.5
Peak Intensity (in/hr)	2.4894
Undeveloped Runoff Coefficient (Cu)	0.8094
Developed Runoff Coefficient (Cd)	0.8103
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	77.255
Burned Peak Flow Rate (cfs)	77.255
24-Hr Clear Runoff Volume (ac-ft)	4.1839
24-Hr Clear Runoff Volume (cu-ft)	182251.6223



Peak Flow Hydrologic Analysis

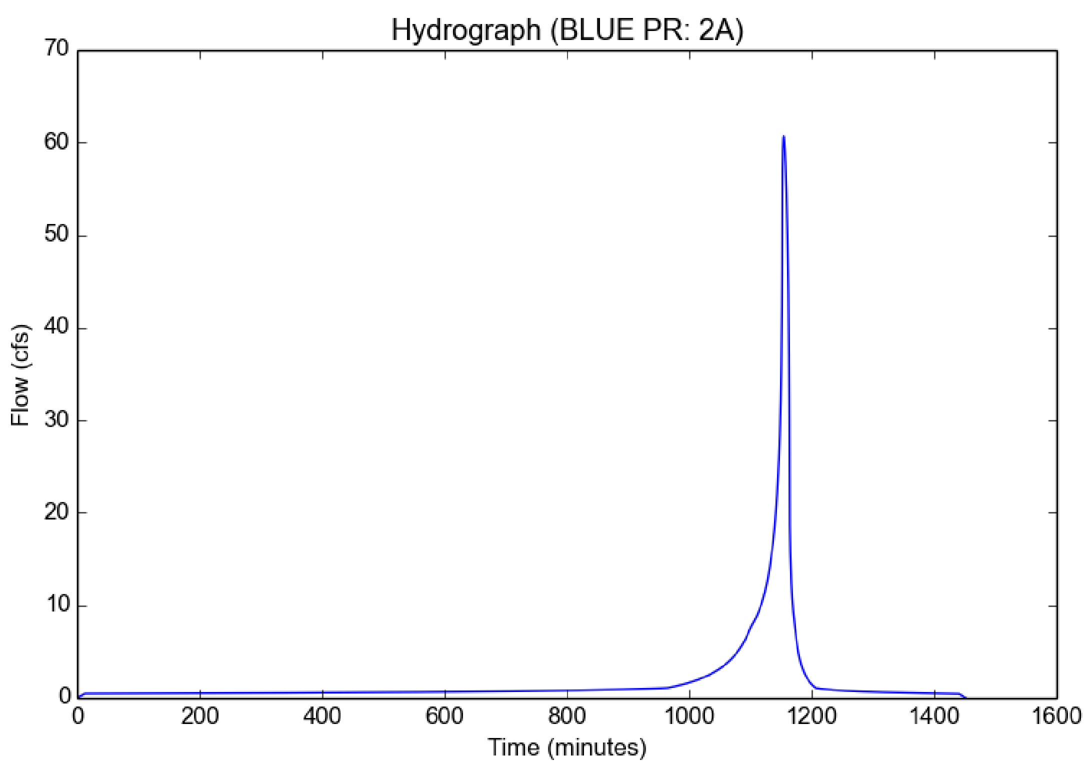
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	2A
Area (ac)	35.3
Flow Path Length (ft)	1919.0
Flow Path Slope (vft/hft)	0.141
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.5
Peak Intensity (in/hr)	2.1745
Undeveloped Runoff Coefficient (Cu)	0.7898
Developed Runoff Coefficient (Cd)	0.7909
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	60.7077
Burned Peak Flow Rate (cfs)	60.7077
24-Hr Clear Runoff Volume (ac-ft)	3.8525
24-Hr Clear Runoff Volume (cu-ft)	167816.8952



Peak Flow Hydrologic Analysis

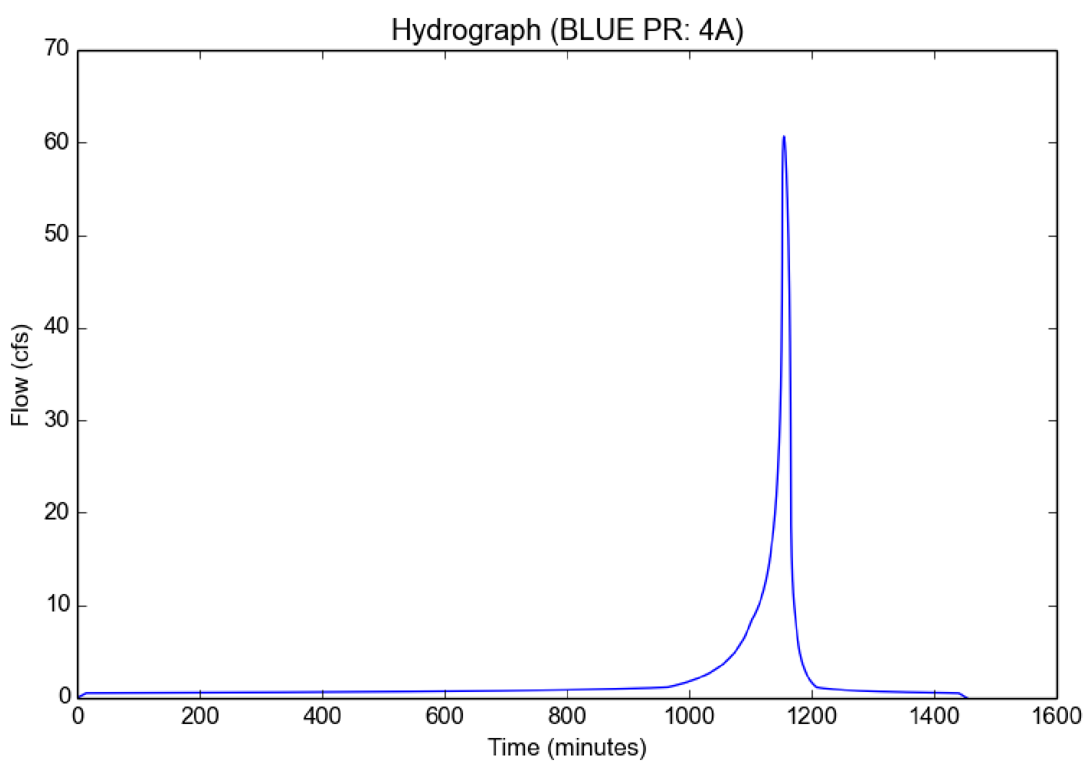
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	4A
Area (ac)	38.4
Flow Path Length (ft)	2544.0
Flow Path Slope (vft/hft)	0.165
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.5
Peak Intensity (in/hr)	2.0226
Undeveloped Runoff Coefficient (Cu)	0.7803
Developed Runoff Coefficient (Cd)	0.7815
Time of Concentration (min)	14.0
Clear Peak Flow Rate (cfs)	60.6953
Burned Peak Flow Rate (cfs)	60.6953
24-Hr Clear Runoff Volume (ac-ft)	4.1886
24-Hr Clear Runoff Volume (cu-ft)	182456.814



Peak Flow Hydrologic Analysis

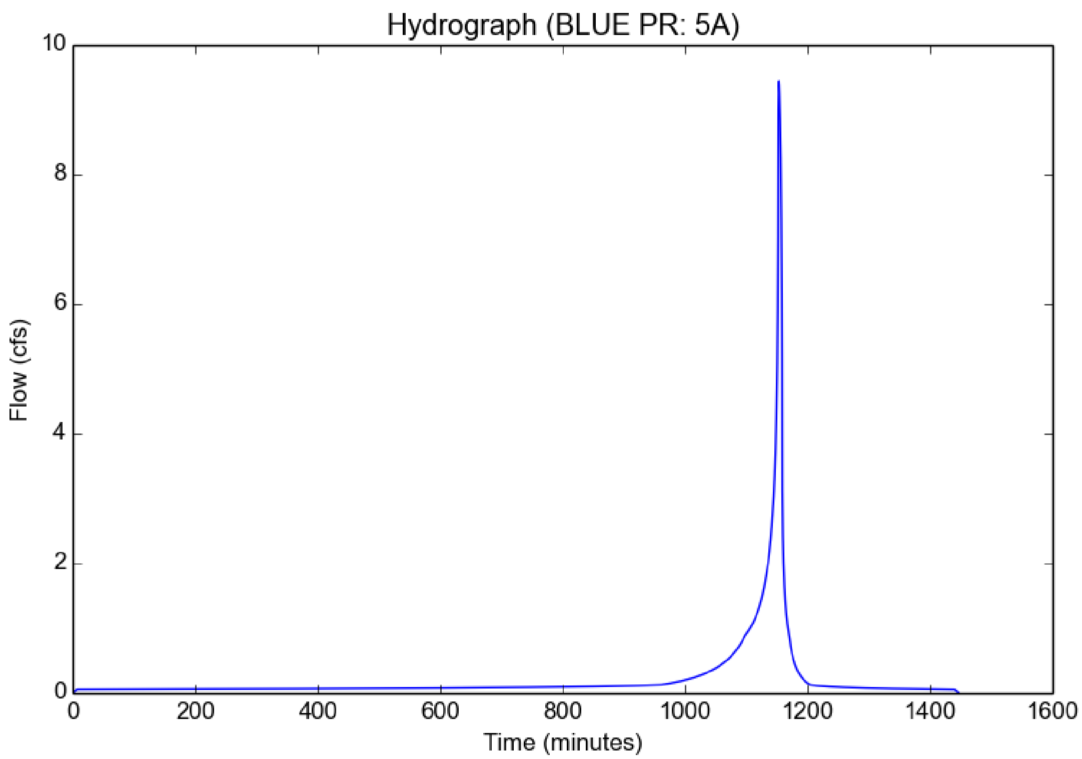
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	5A
Area (ac)	4.1
Flow Path Length (ft)	893.0
Flow Path Slope (vft/hft)	0.169
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.5
Peak Intensity (in/hr)	2.8015
Undeveloped Runoff Coefficient (Cu)	0.8215
Developed Runoff Coefficient (Cd)	0.8222
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	9.4443
Burned Peak Flow Rate (cfs)	9.4443
24-Hr Clear Runoff Volume (ac-ft)	0.448
24-Hr Clear Runoff Volume (cu-ft)	19516.7476



Peak Flow Hydrologic Analysis

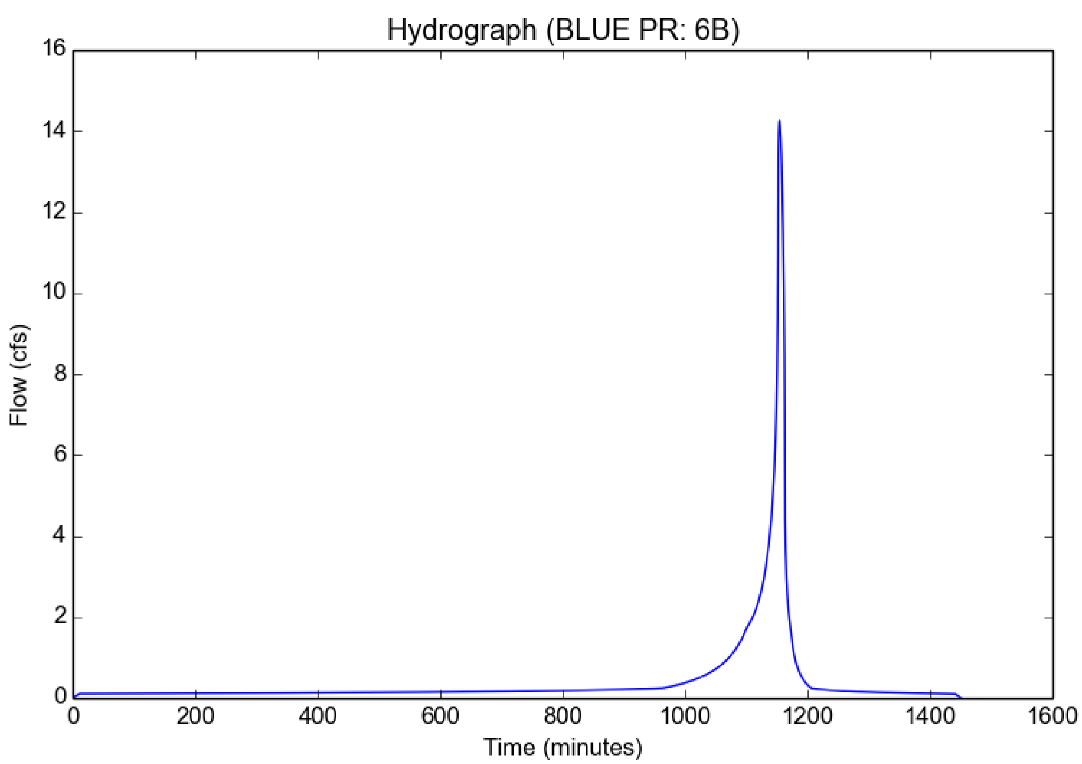
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	6B
Area (ac)	7.9
Flow Path Length (ft)	1944.0
Flow Path Slope (vft/hft)	0.185
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.5
Peak Intensity (in/hr)	2.2653
Undeveloped Runoff Coefficient (Cu)	0.7954
Developed Runoff Coefficient (Cd)	0.7965
Time of Concentration (min)	11.0
Clear Peak Flow Rate (cfs)	14.2535
Burned Peak Flow Rate (cfs)	14.2535
24-Hr Clear Runoff Volume (ac-ft)	0.8624
24-Hr Clear Runoff Volume (cu-ft)	37566.2691



Peak Flow Hydrologic Analysis

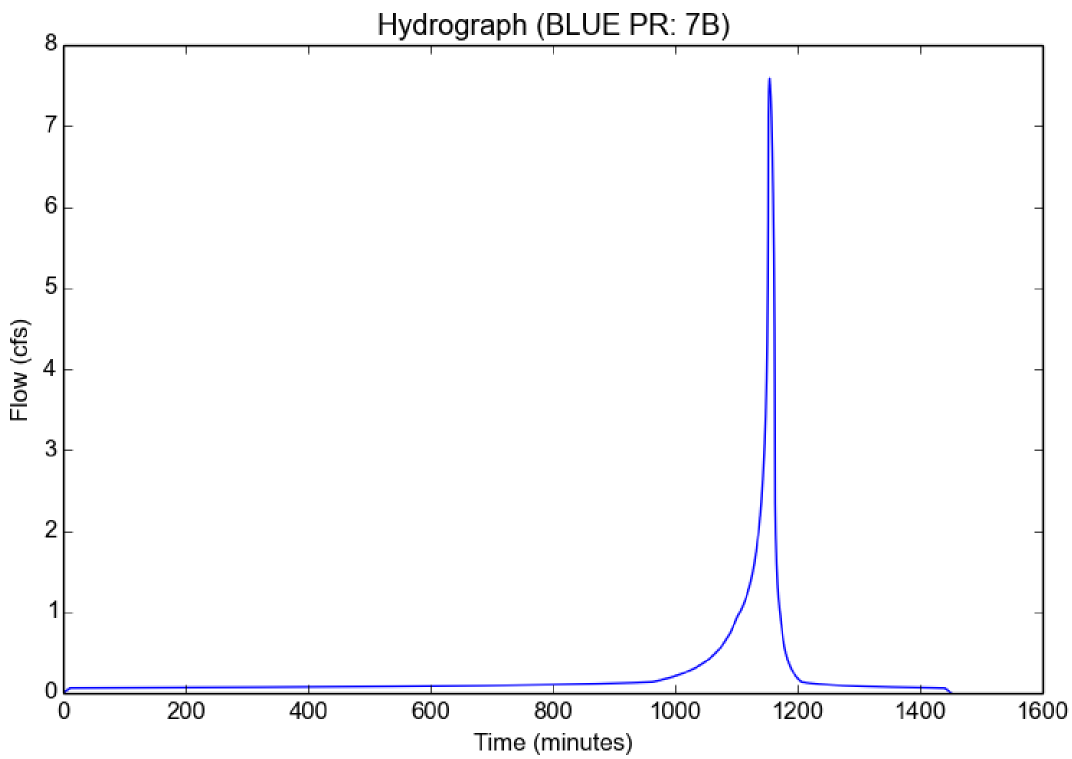
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	7B
Area (ac)	4.2
Flow Path Length (ft)	1223.0
Flow Path Slope (vft/hft)	0.043
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.02
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.5
Peak Intensity (in/hr)	2.2653
Undeveloped Runoff Coefficient (Cu)	0.7954
Developed Runoff Coefficient (Cd)	0.7975
Time of Concentration (min)	11.0
Clear Peak Flow Rate (cfs)	7.5878
Burned Peak Flow Rate (cfs)	7.5878
24-Hr Clear Runoff Volume (ac-ft)	0.4712
24-Hr Clear Runoff Volume (cu-ft)	20526.2049



Peak Flow Hydrologic Analysis

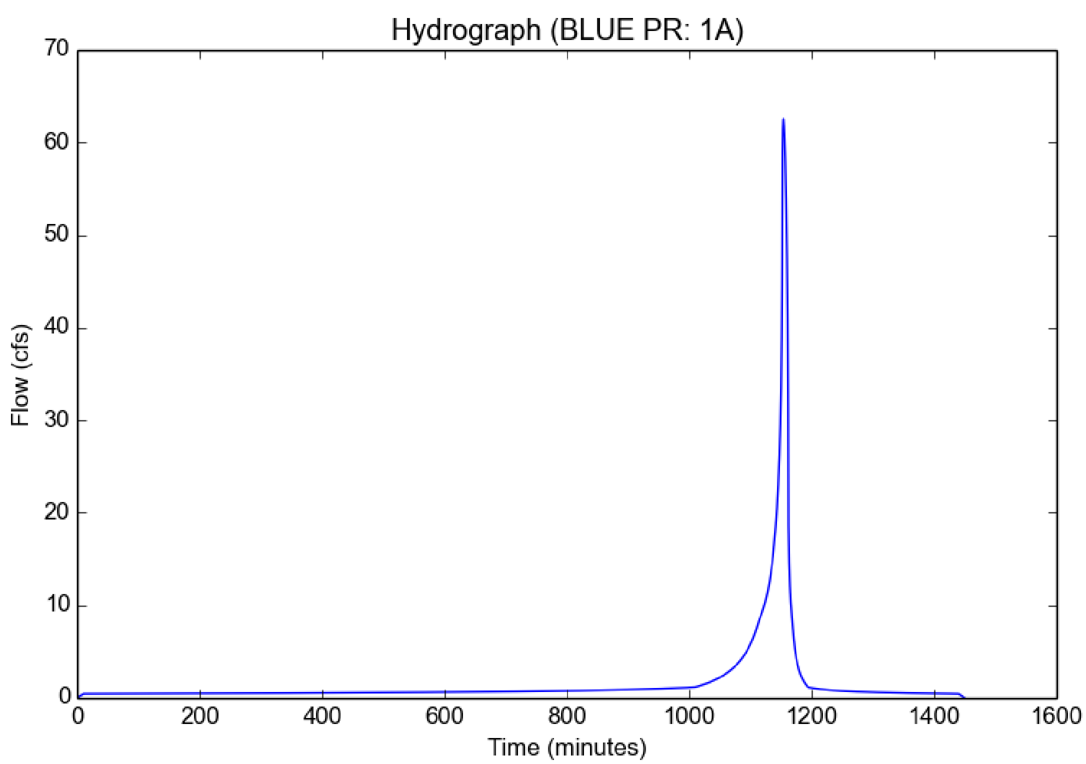
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	1A
Area (ac)	38.3
Flow Path Length (ft)	1583.0
Flow Path Slope (vft/hft)	0.239
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.829
Peak Intensity (in/hr)	2.0801
Undeveloped Runoff Coefficient (Cu)	0.7839
Developed Runoff Coefficient (Cd)	0.785
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	62.541
Burned Peak Flow Rate (cfs)	62.541
24-Hr Clear Runoff Volume (ac-ft)	3.3935
24-Hr Clear Runoff Volume (cu-ft)	147822.3506



Peak Flow Hydrologic Analysis

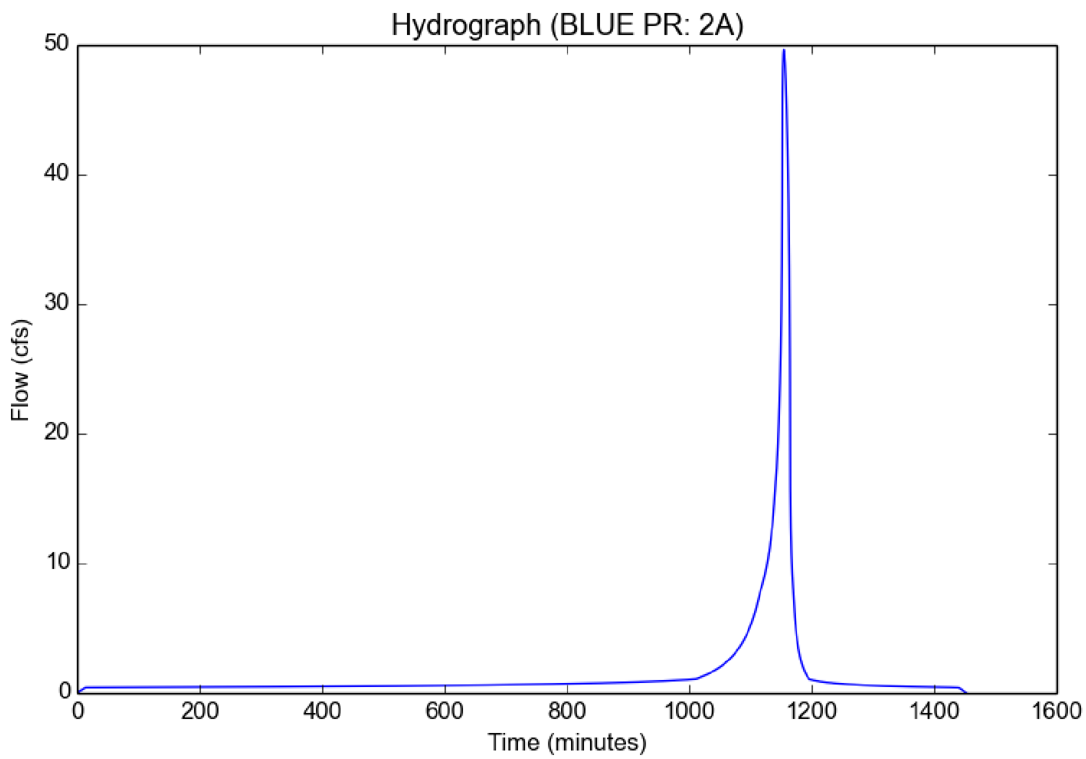
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	2A
Area (ac)	35.3
Flow Path Length (ft)	1919.0
Flow Path Slope (vft/hft)	0.141
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.829
Peak Intensity (in/hr)	1.8388
Undeveloped Runoff Coefficient (Cu)	0.7633
Developed Runoff Coefficient (Cd)	0.7646
Time of Concentration (min)	13.0
Clear Peak Flow Rate (cfs)	49.6302
Burned Peak Flow Rate (cfs)	49.6302
24-Hr Clear Runoff Volume (ac-ft)	3.1232
24-Hr Clear Runoff Volume (cu-ft)	136044.9147



Peak Flow Hydrologic Analysis

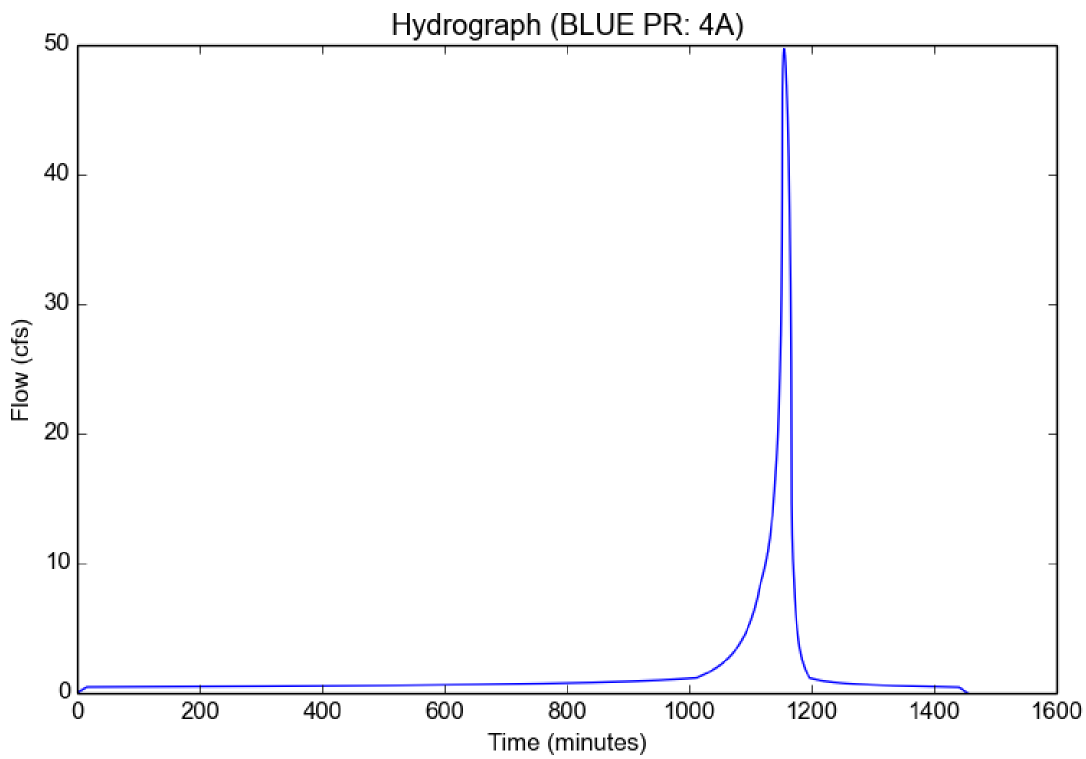
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	4A
Area (ac)	38.4
Flow Path Length (ft)	2544.0
Flow Path Slope (vft/hft)	0.165
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.829
Peak Intensity (in/hr)	1.7191
Undeveloped Runoff Coefficient (Cu)	0.7517
Developed Runoff Coefficient (Cd)	0.7531
Time of Concentration (min)	15.0
Clear Peak Flow Rate (cfs)	49.7194
Burned Peak Flow Rate (cfs)	49.7194
24-Hr Clear Runoff Volume (ac-ft)	3.395
24-Hr Clear Runoff Volume (cu-ft)	147886.1806



Peak Flow Hydrologic Analysis

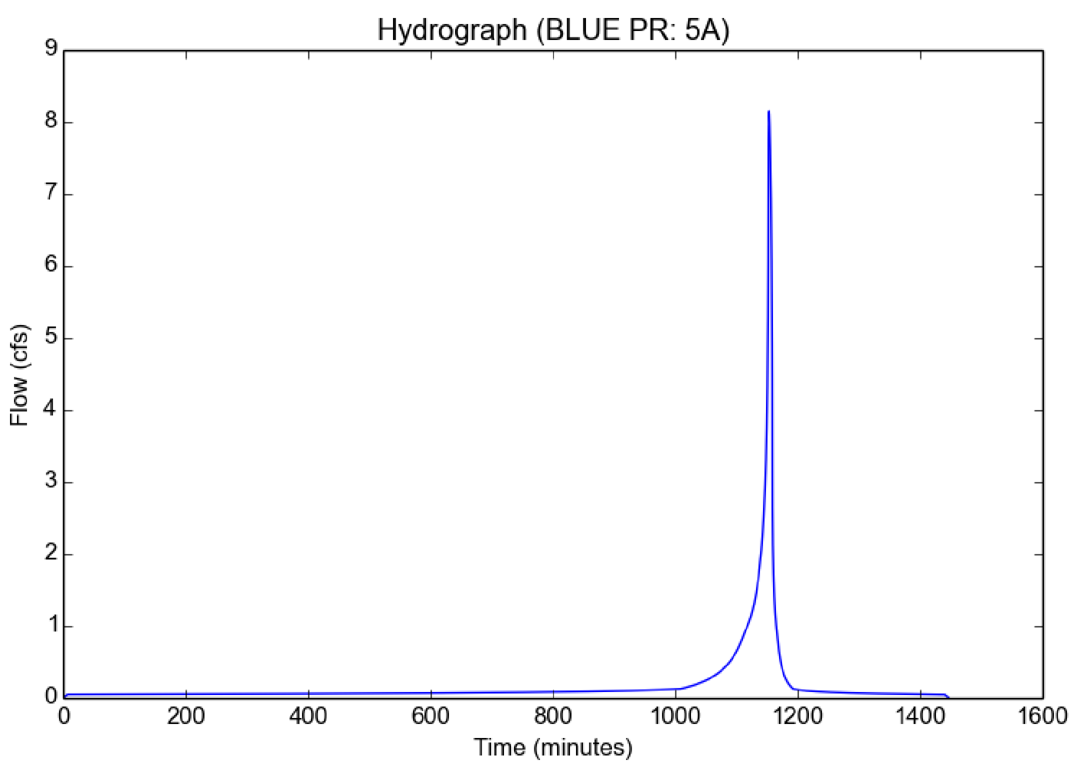
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	5A
Area (ac)	4.1
Flow Path Length (ft)	893.0
Flow Path Slope (vft/hft)	0.169
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.829
Peak Intensity (in/hr)	2.4597
Undeveloped Runoff Coefficient (Cu)	0.8075
Developed Runoff Coefficient (Cd)	0.8085
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	8.1531
Burned Peak Flow Rate (cfs)	8.1531
24-Hr Clear Runoff Volume (ac-ft)	0.3637
24-Hr Clear Runoff Volume (cu-ft)	15841.1973



Peak Flow Hydrologic Analysis

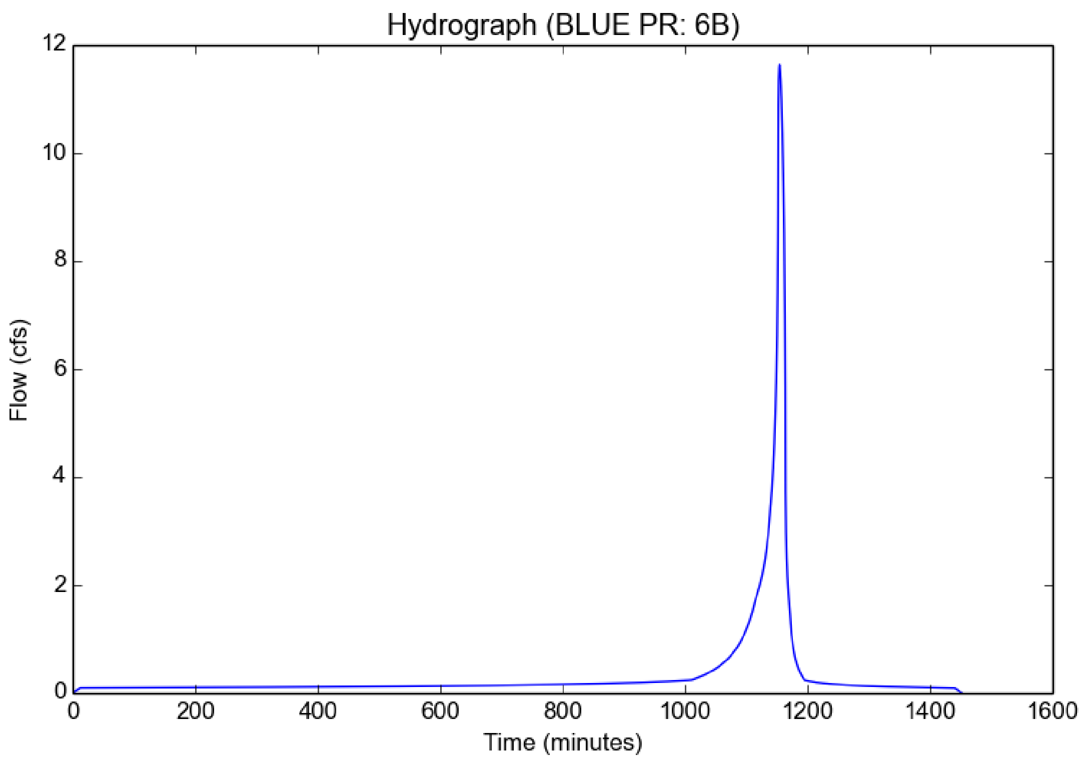
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	6B
Area (ac)	7.9
Flow Path Length (ft)	1944.0
Flow Path Slope (vft/hft)	0.185
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.829
Peak Intensity (in/hr)	1.9092
Undeveloped Runoff Coefficient (Cu)	0.7701
Developed Runoff Coefficient (Cd)	0.7714
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	11.6349
Burned Peak Flow Rate (cfs)	11.6349
24-Hr Clear Runoff Volume (ac-ft)	0.6993
24-Hr Clear Runoff Volume (cu-ft)	30460.3247



Peak Flow Hydrologic Analysis

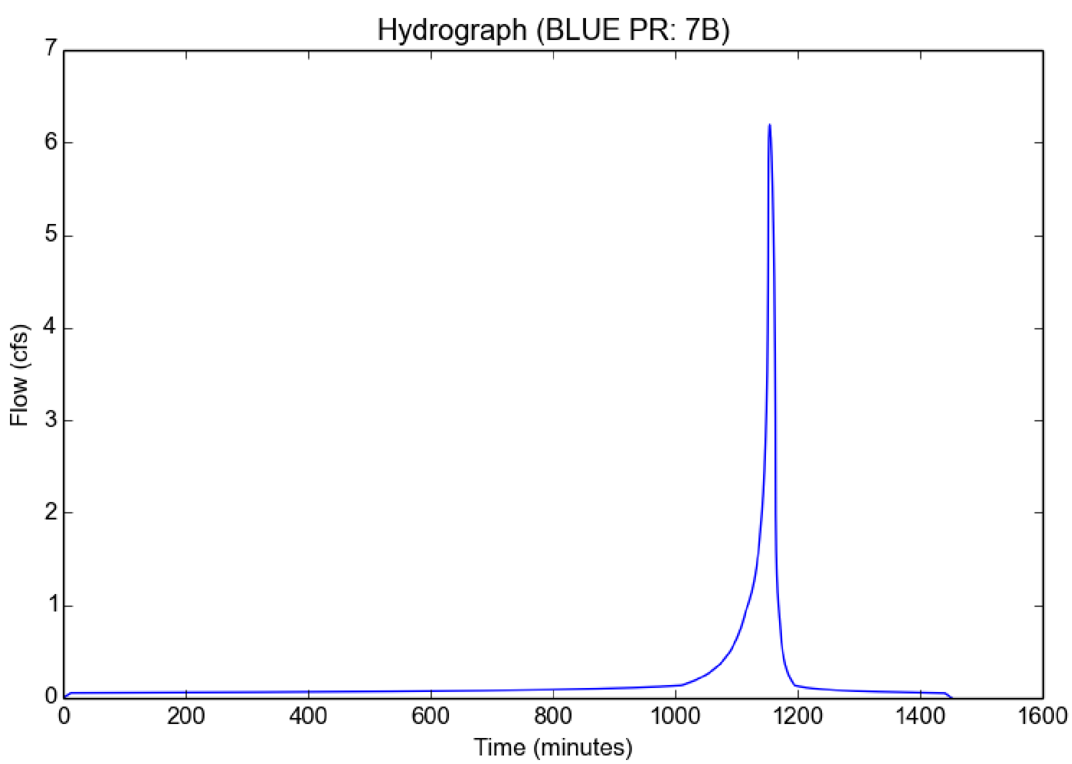
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	7B
Area (ac)	4.2
Flow Path Length (ft)	1223.0
Flow Path Slope (vft/hft)	0.043
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.02
Soil Type	99
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.829
Peak Intensity (in/hr)	1.9092
Undeveloped Runoff Coefficient (Cu)	0.7701
Developed Runoff Coefficient (Cd)	0.7727
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	6.196
Burned Peak Flow Rate (cfs)	6.196
24-Hr Clear Runoff Volume (ac-ft)	0.3832
24-Hr Clear Runoff Volume (cu-ft)	16694.2891



Peak Flow Hydrologic Analysis

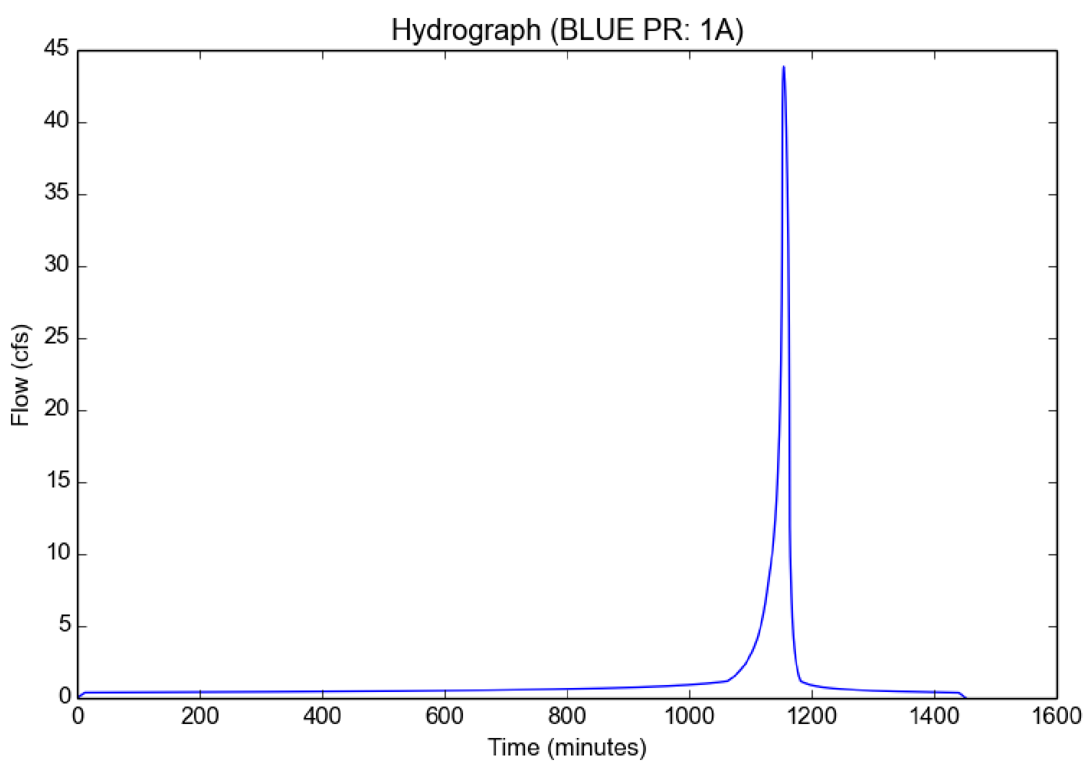
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	1A
Area (ac)	38.3
Flow Path Length (ft)	1583.0
Flow Path Slope (vft/hft)	0.239
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.927
Peak Intensity (in/hr)	1.5526
Undeveloped Runoff Coefficient (Cu)	0.7355
Developed Runoff Coefficient (Cd)	0.7372
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	43.8361
Burned Peak Flow Rate (cfs)	43.8361
24-Hr Clear Runoff Volume (ac-ft)	2.4579
24-Hr Clear Runoff Volume (cu-ft)	107068.1453



Peak Flow Hydrologic Analysis

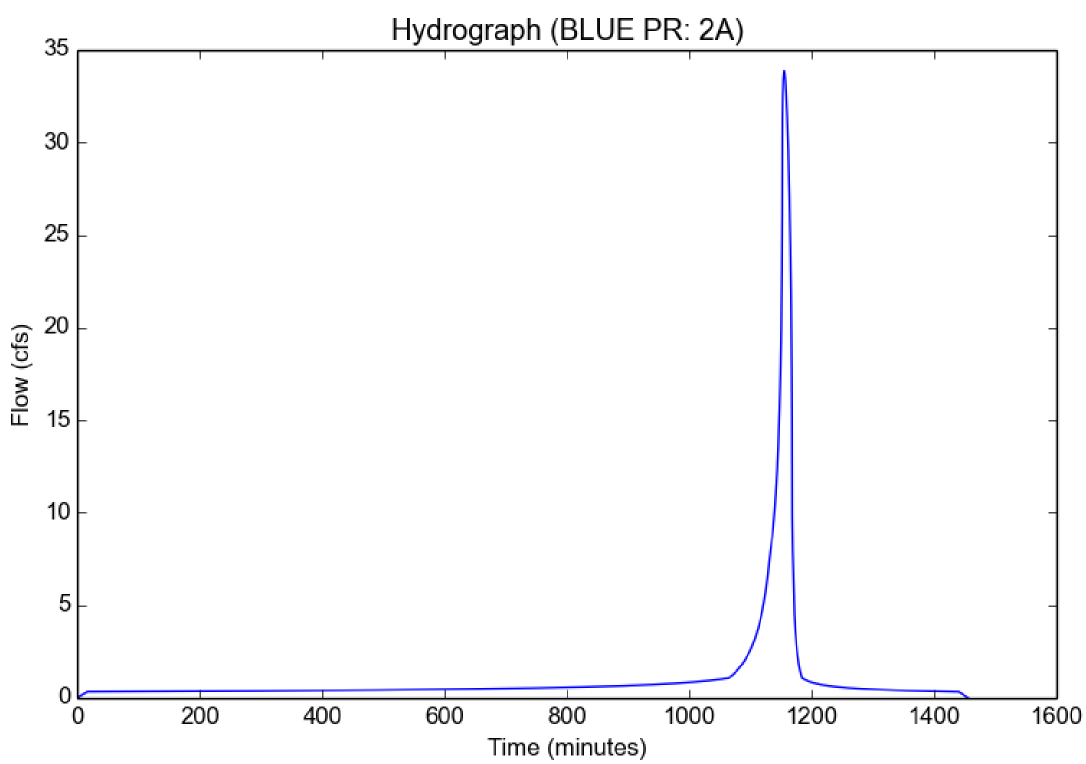
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	2A
Area (ac)	35.3
Flow Path Length (ft)	1919.0
Flow Path Slope (vft/hft)	0.141
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.927
Peak Intensity (in/hr)	1.3563
Undeveloped Runoff Coefficient (Cu)	0.7055
Developed Runoff Coefficient (Cd)	0.7075
Time of Concentration (min)	16.0
Clear Peak Flow Rate (cfs)	33.8715
Burned Peak Flow Rate (cfs)	33.8715
24-Hr Clear Runoff Volume (ac-ft)	2.2586
24-Hr Clear Runoff Volume (cu-ft)	98386.6563



Peak Flow Hydrologic Analysis

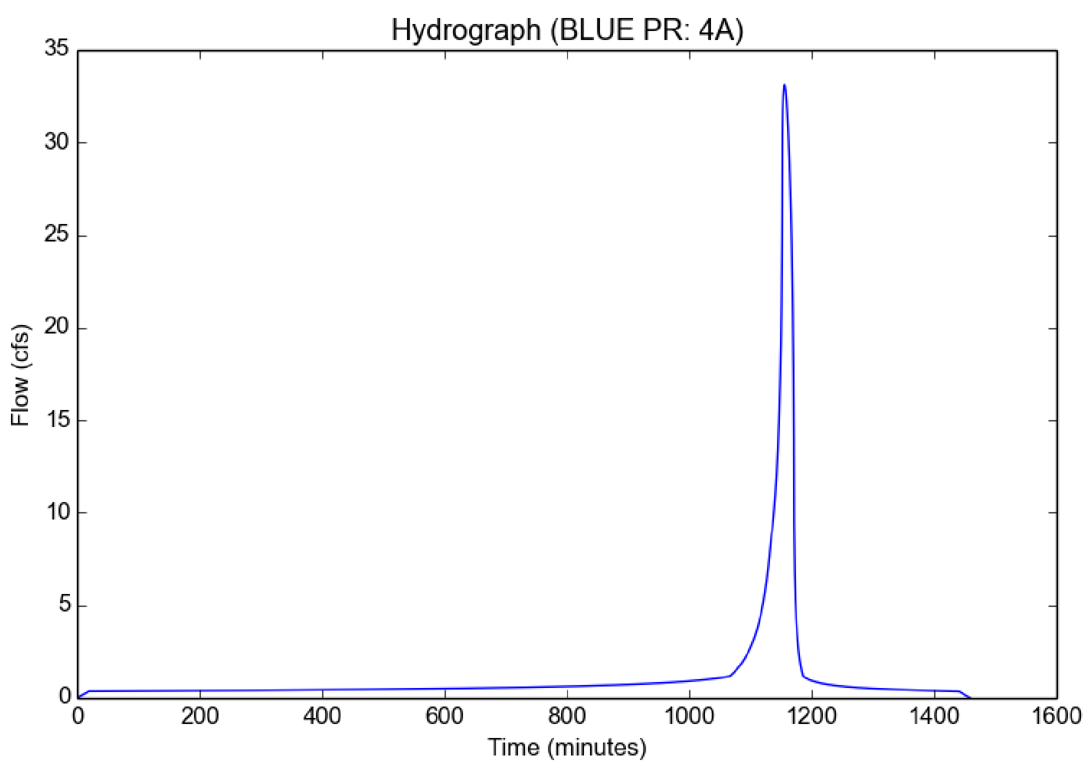
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	4A
Area (ac)	38.4
Flow Path Length (ft)	2544.0
Flow Path Slope (vft/hft)	0.165
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.927
Peak Intensity (in/hr)	1.251
Undeveloped Runoff Coefficient (Cu)	0.6873
Developed Runoff Coefficient (Cd)	0.6894
Time of Concentration (min)	19.0
Clear Peak Flow Rate (cfs)	33.1204
Burned Peak Flow Rate (cfs)	33.1204
24-Hr Clear Runoff Volume (ac-ft)	2.4534
24-Hr Clear Runoff Volume (cu-ft)	106870.5238



Peak Flow Hydrologic Analysis

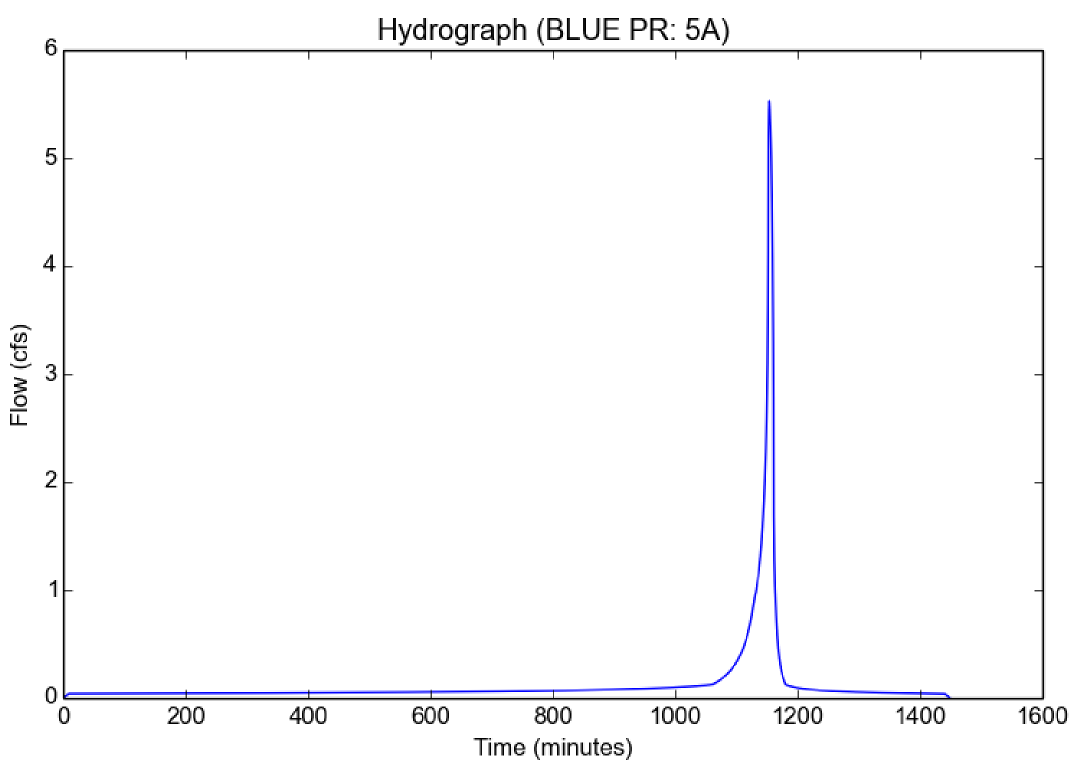
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	5A
Area (ac)	4.1
Flow Path Length (ft)	893.0
Flow Path Slope (vft/hft)	0.169
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.927
Peak Intensity (in/hr)	1.7774
Undeveloped Runoff Coefficient (Cu)	0.7573
Developed Runoff Coefficient (Cd)	0.7587
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	5.5292
Burned Peak Flow Rate (cfs)	5.5292
24-Hr Clear Runoff Volume (ac-ft)	0.2634
24-Hr Clear Runoff Volume (cu-ft)	11475.3719



Peak Flow Hydrologic Analysis

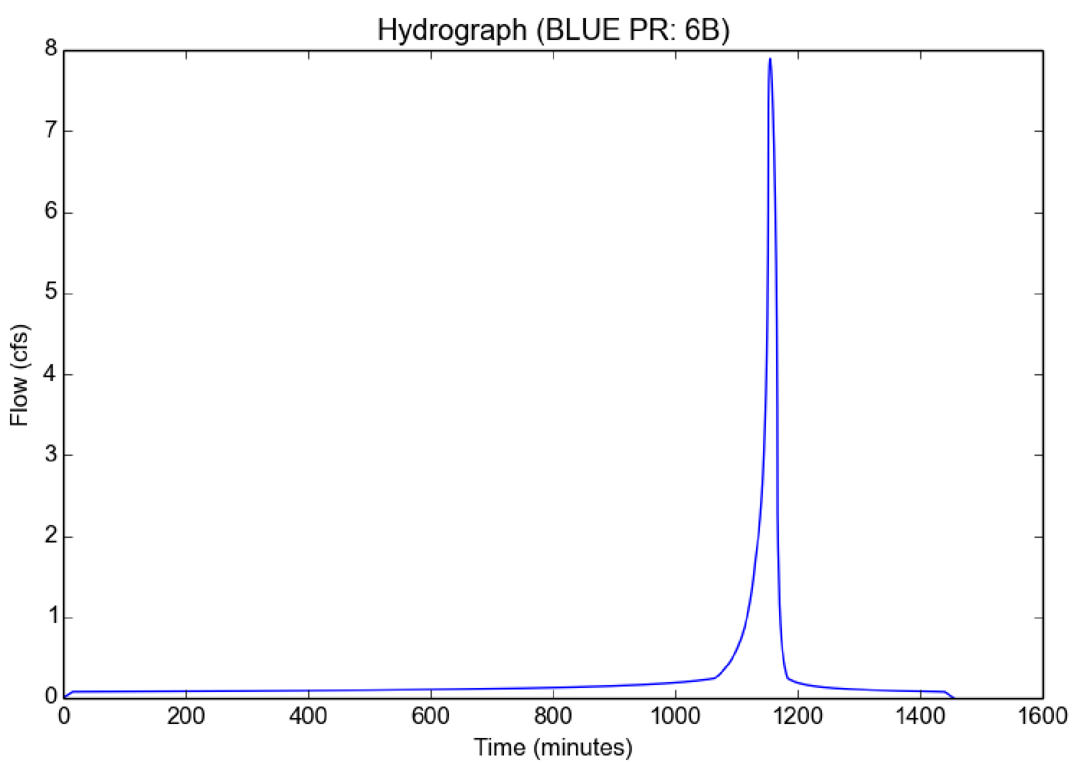
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	6B
Area (ac)	7.9
Flow Path Length (ft)	1944.0
Flow Path Slope (vft/hft)	0.185
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.927
Peak Intensity (in/hr)	1.398
Undeveloped Runoff Coefficient (Cu)	0.7128
Developed Runoff Coefficient (Cd)	0.7146
Time of Concentration (min)	15.0
Clear Peak Flow Rate (cfs)	7.8928
Burned Peak Flow Rate (cfs)	7.8928
24-Hr Clear Runoff Volume (ac-ft)	0.5058
24-Hr Clear Runoff Volume (cu-ft)	22032.9596



Peak Flow Hydrologic Analysis

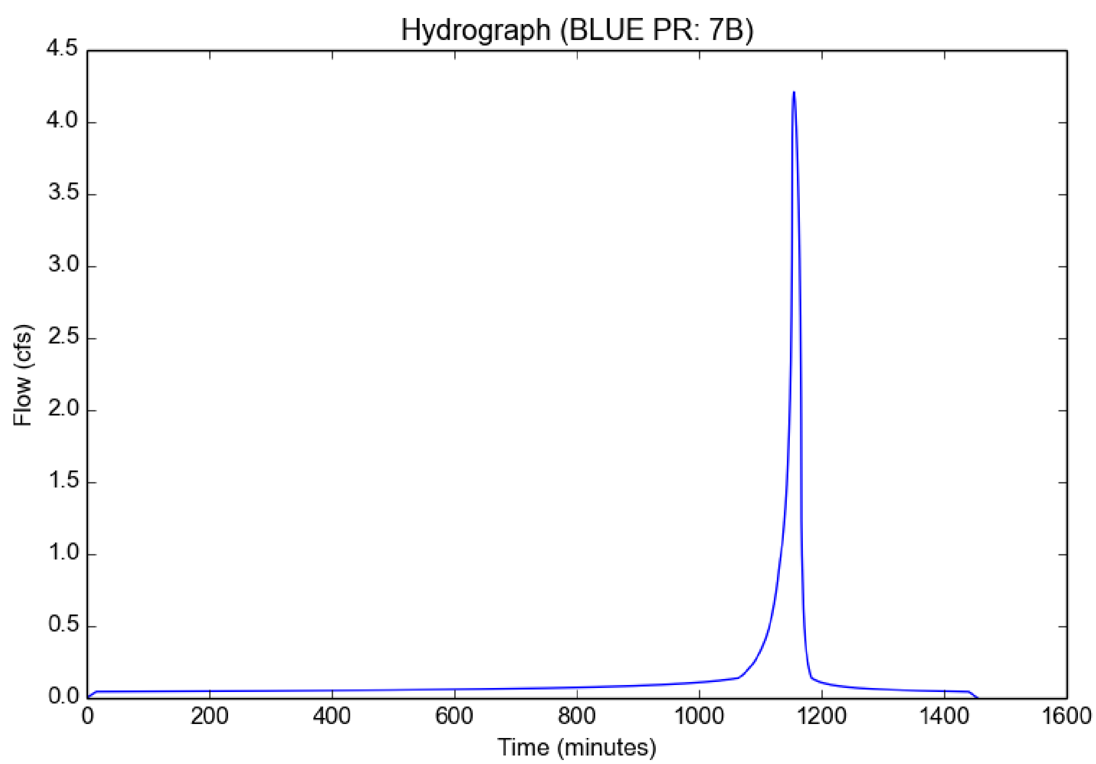
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	7B
Area (ac)	4.2
Flow Path Length (ft)	1223.0
Flow Path Slope (vft/hft)	0.043
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.02
Soil Type	99
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.927
Peak Intensity (in/hr)	1.398
Undeveloped Runoff Coefficient (Cu)	0.7128
Developed Runoff Coefficient (Cd)	0.7165
Time of Concentration (min)	15.0
Clear Peak Flow Rate (cfs)	4.2072
Burned Peak Flow Rate (cfs)	4.2072
24-Hr Clear Runoff Volume (ac-ft)	0.2786
24-Hr Clear Runoff Volume (cu-ft)	12135.1904



Peak Flow Hydrologic Analysis

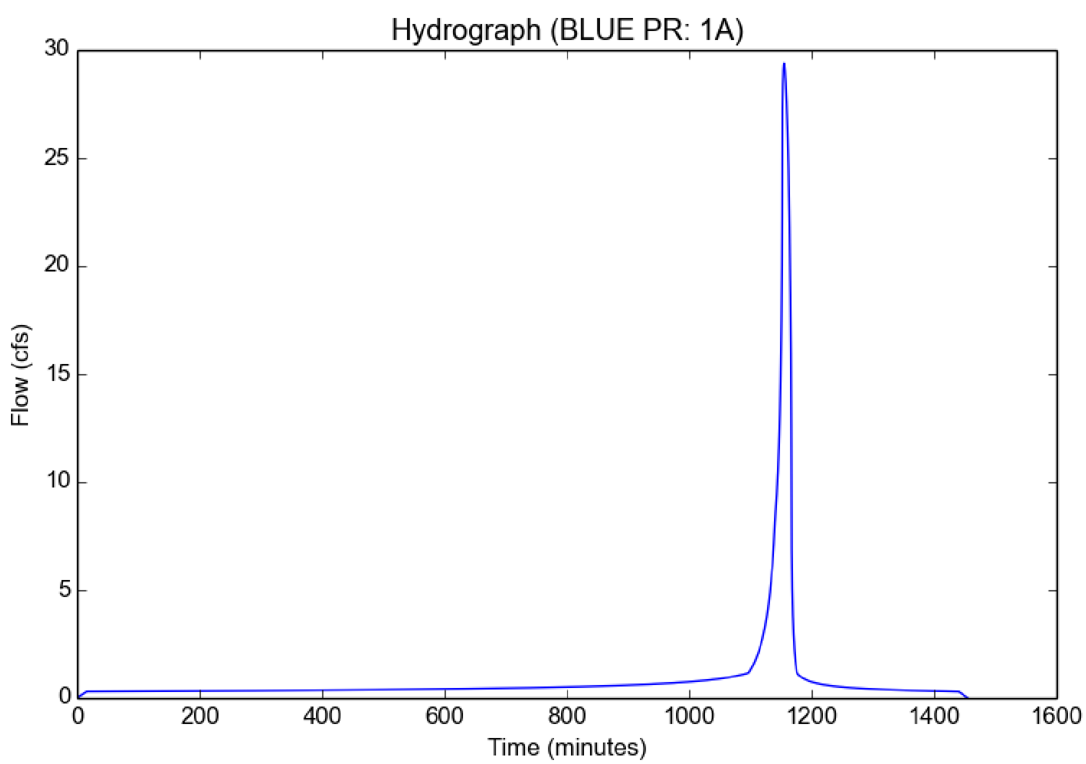
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	1A
Area (ac)	38.3
Flow Path Length (ft)	1583.0
Flow Path Slope (vft/hft)	0.239
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.212
Peak Intensity (in/hr)	1.1435
Undeveloped Runoff Coefficient (Cu)	0.6687
Developed Runoff Coefficient (Cd)	0.671
Time of Concentration (min)	15.0
Clear Peak Flow Rate (cfs)	29.3872
Burned Peak Flow Rate (cfs)	29.3872
24-Hr Clear Runoff Volume (ac-ft)	1.8165
24-Hr Clear Runoff Volume (cu-ft)	79124.9286



Peak Flow Hydrologic Analysis

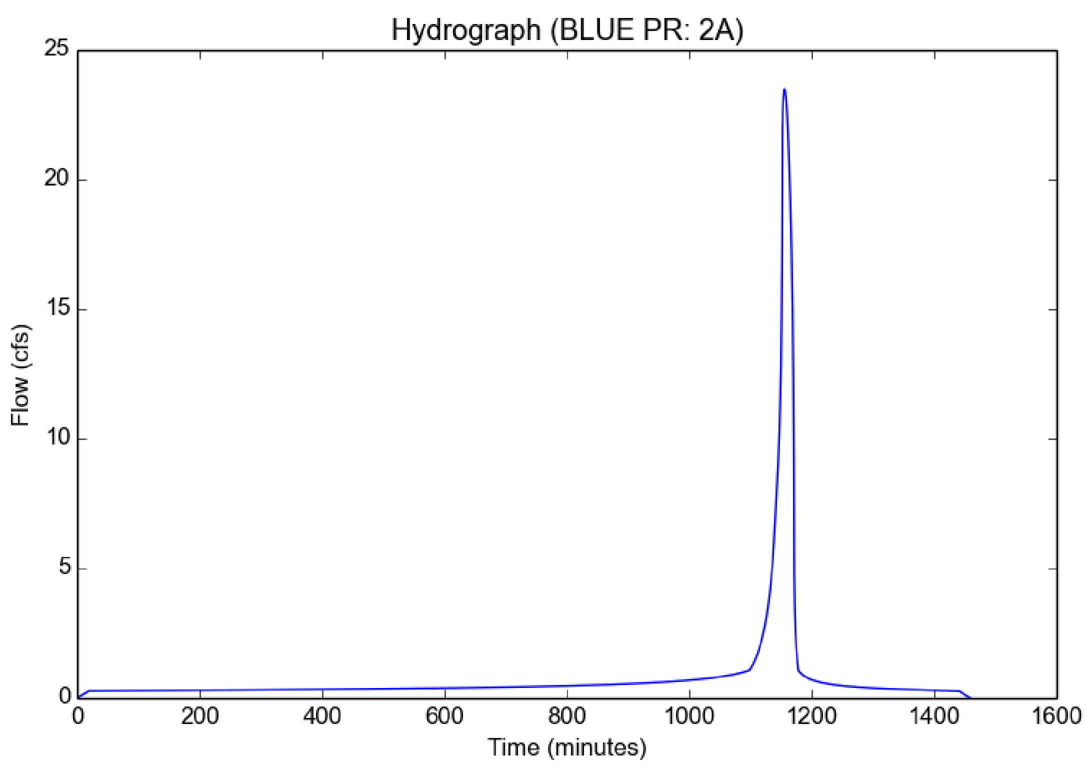
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	2A
Area (ac)	35.3
Flow Path Length (ft)	1919.0
Flow Path Slope (vft/hft)	0.141
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.212
Peak Intensity (in/hr)	1.0232
Undeveloped Runoff Coefficient (Cu)	0.6479
Developed Runoff Coefficient (Cd)	0.6504
Time of Concentration (min)	19.0
Clear Peak Flow Rate (cfs)	23.4928
Burned Peak Flow Rate (cfs)	23.4928
24-Hr Clear Runoff Volume (ac-ft)	1.6724
24-Hr Clear Runoff Volume (cu-ft)	72849.2627



Peak Flow Hydrologic Analysis

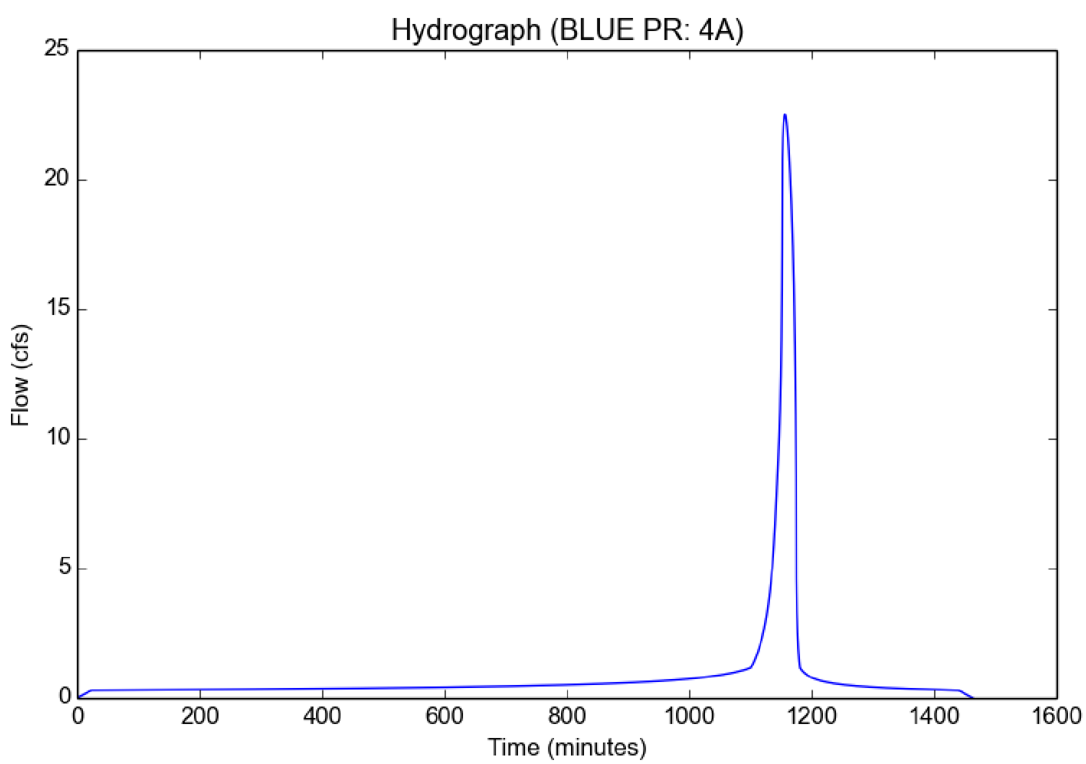
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	4A
Area (ac)	38.4
Flow Path Length (ft)	2544.0
Flow Path Slope (vft/hft)	0.165
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.212
Peak Intensity (in/hr)	0.9354
Undeveloped Runoff Coefficient (Cu)	0.6241
Developed Runoff Coefficient (Cd)	0.6268
Time of Concentration (min)	23.0
Clear Peak Flow Rate (cfs)	22.5147
Burned Peak Flow Rate (cfs)	22.5147
24-Hr Clear Runoff Volume (ac-ft)	1.8139
24-Hr Clear Runoff Volume (cu-ft)	79013.9634



Peak Flow Hydrologic Analysis

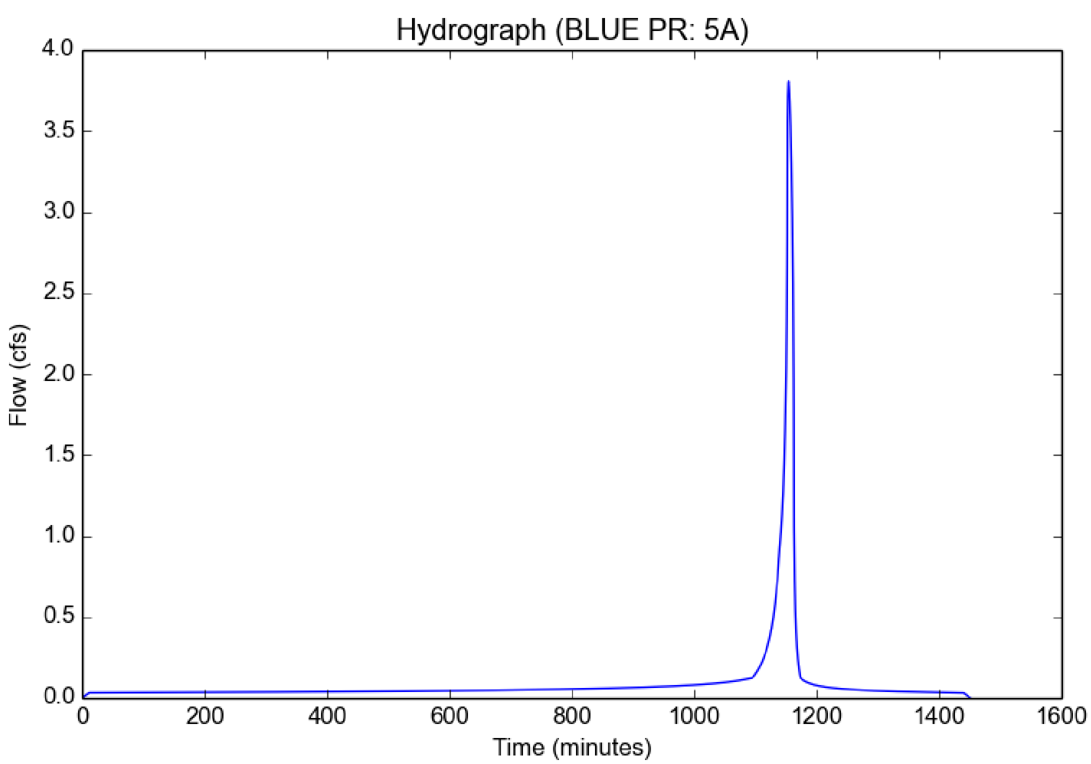
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	5A
Area (ac)	4.1
Flow Path Length (ft)	893.0
Flow Path Slope (vft/hft)	0.169
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.212
Peak Intensity (in/hr)	1.3229
Undeveloped Runoff Coefficient (Cu)	0.6998
Developed Runoff Coefficient (Cd)	0.7018
Time of Concentration (min)	11.0
Clear Peak Flow Rate (cfs)	3.8064
Burned Peak Flow Rate (cfs)	3.8064
24-Hr Clear Runoff Volume (ac-ft)	0.1948
24-Hr Clear Runoff Volume (cu-ft)	8485.8931



Peak Flow Hydrologic Analysis

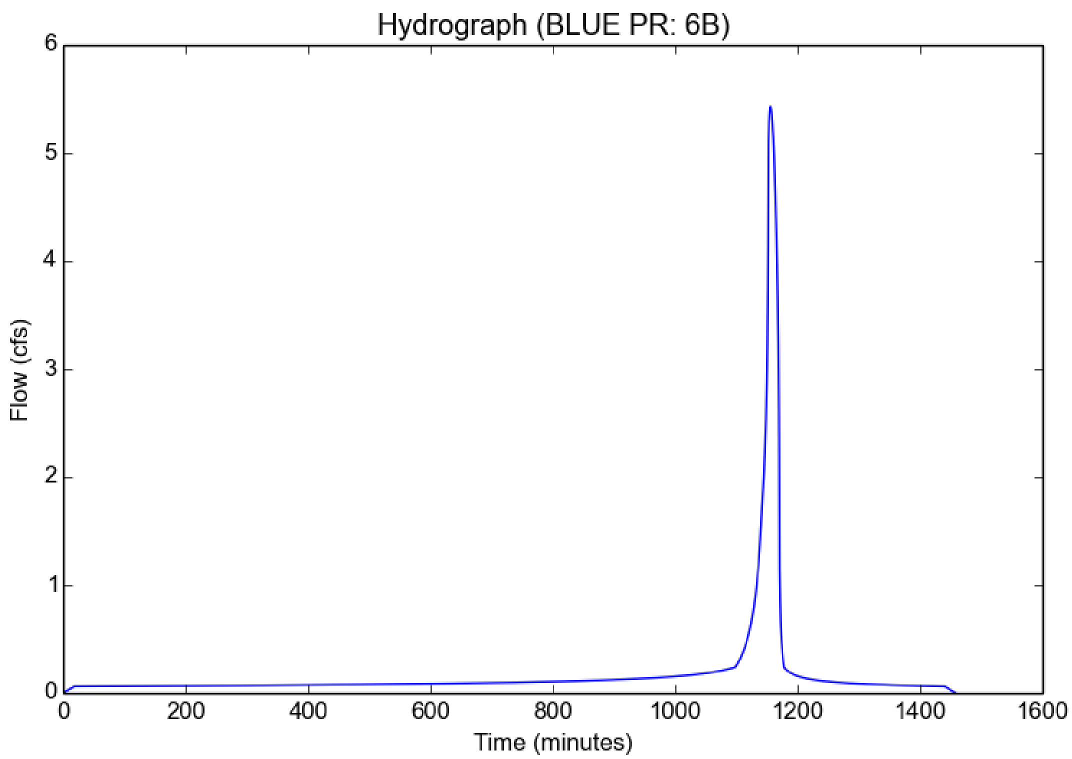
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	6B
Area (ac)	7.9
Flow Path Length (ft)	1944.0
Flow Path Slope (vft/hft)	0.185
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.212
Peak Intensity (in/hr)	1.0496
Undeveloped Runoff Coefficient (Cu)	0.6524
Developed Runoff Coefficient (Cd)	0.6549
Time of Concentration (min)	18.0
Clear Peak Flow Rate (cfs)	5.4303
Burned Peak Flow Rate (cfs)	5.4303
24-Hr Clear Runoff Volume (ac-ft)	0.3744
24-Hr Clear Runoff Volume (cu-ft)	16309.0646



Peak Flow Hydrologic Analysis

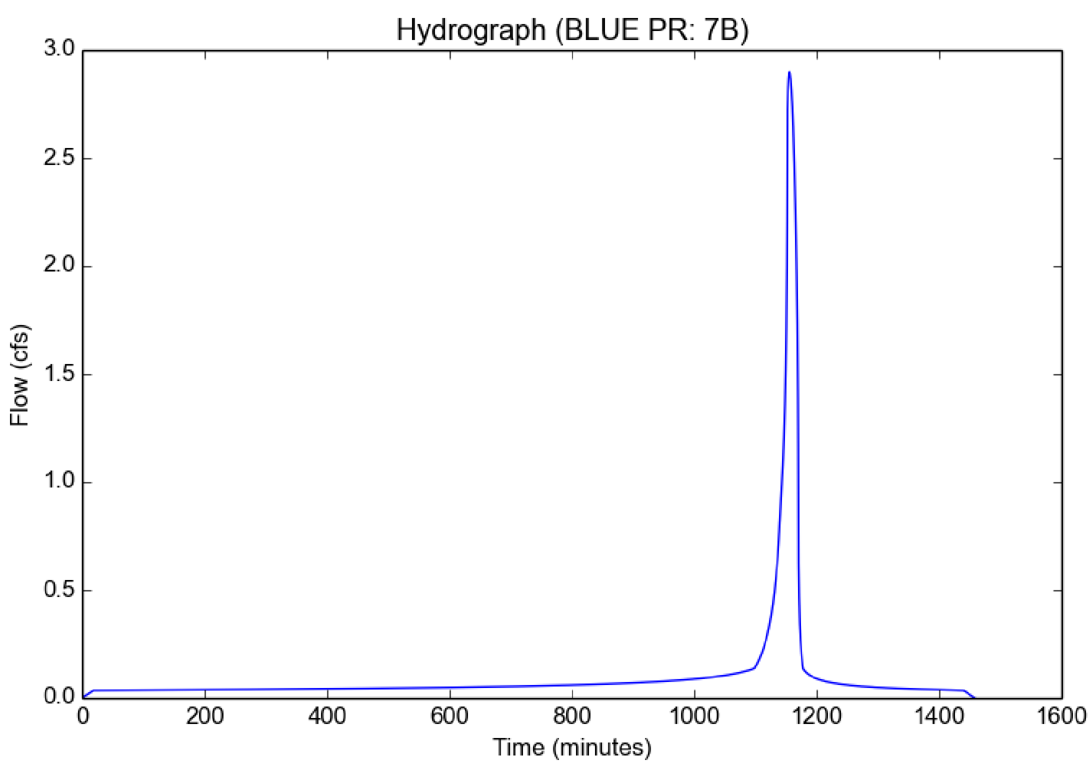
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	7B
Area (ac)	4.2
Flow Path Length (ft)	1223.0
Flow Path Slope (vft/hft)	0.043
50-yr Rainfall Depth (in)	5.5
Percent Impervious	0.02
Soil Type	99
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.212
Peak Intensity (in/hr)	1.0496
Undeveloped Runoff Coefficient (Cu)	0.6524
Developed Runoff Coefficient (Cd)	0.6574
Time of Concentration (min)	18.0
Clear Peak Flow Rate (cfs)	2.8979
Burned Peak Flow Rate (cfs)	2.8979
24-Hr Clear Runoff Volume (ac-ft)	0.2072
24-Hr Clear Runoff Volume (cu-ft)	9024.5655



Peak Flow Hydrologic Analysis

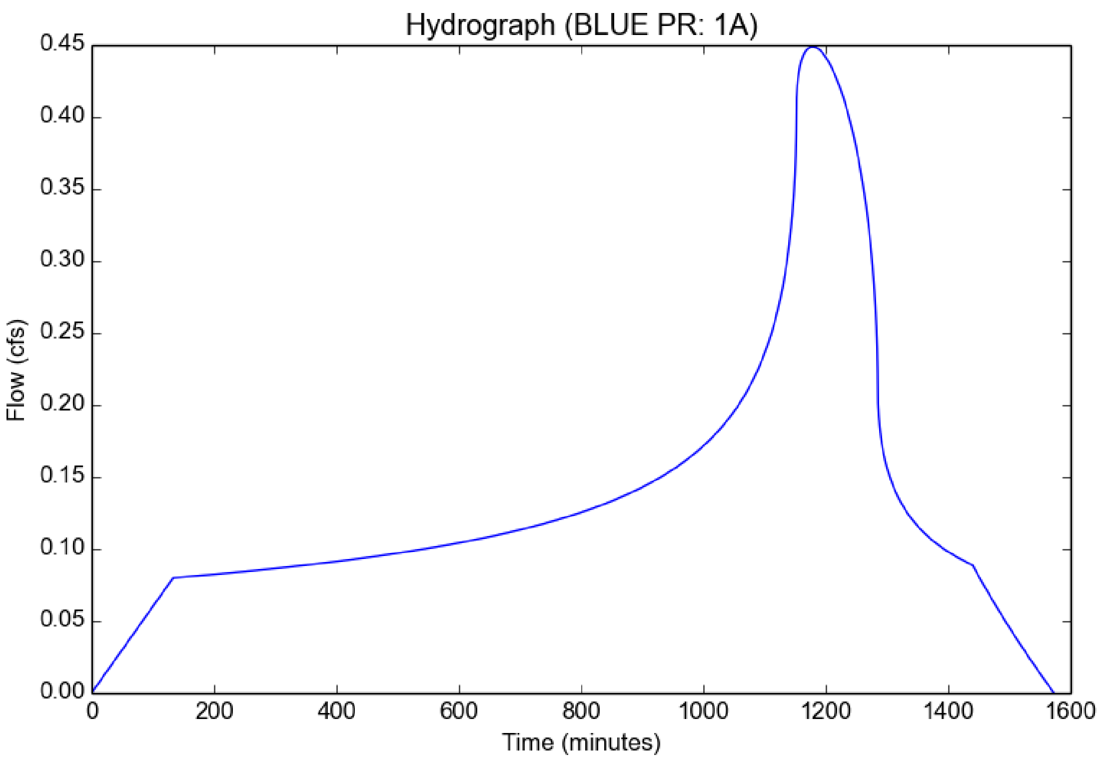
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	1A
Area (ac)	38.3
Flow Path Length (ft)	1583.0
Flow Path Slope (vft/hft)	0.239
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.1085
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.108
Time of Concentration (min)	133.0
Clear Peak Flow Rate (cfs)	0.4488
Burned Peak Flow Rate (cfs)	0.4488
24-Hr Clear Runoff Volume (ac-ft)	0.2906
24-Hr Clear Runoff Volume (cu-ft)	12660.4458



Peak Flow Hydrologic Analysis

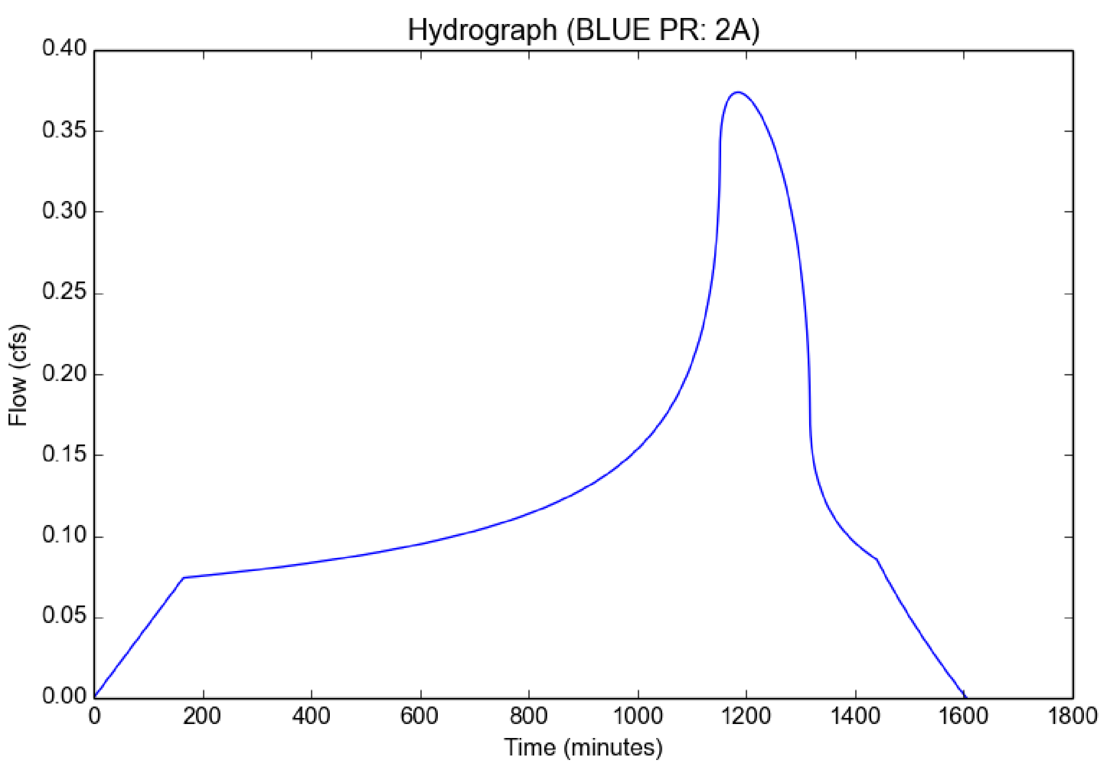
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	2A
Area (ac)	35.3
Flow Path Length (ft)	1919.0
Flow Path Slope (vft/hft)	0.141
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.098
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.108
Time of Concentration (min)	165.0
Clear Peak Flow Rate (cfs)	0.3738
Burned Peak Flow Rate (cfs)	0.3738
24-Hr Clear Runoff Volume (ac-ft)	0.2679
24-Hr Clear Runoff Volume (cu-ft)	11670.3867



Peak Flow Hydrologic Analysis

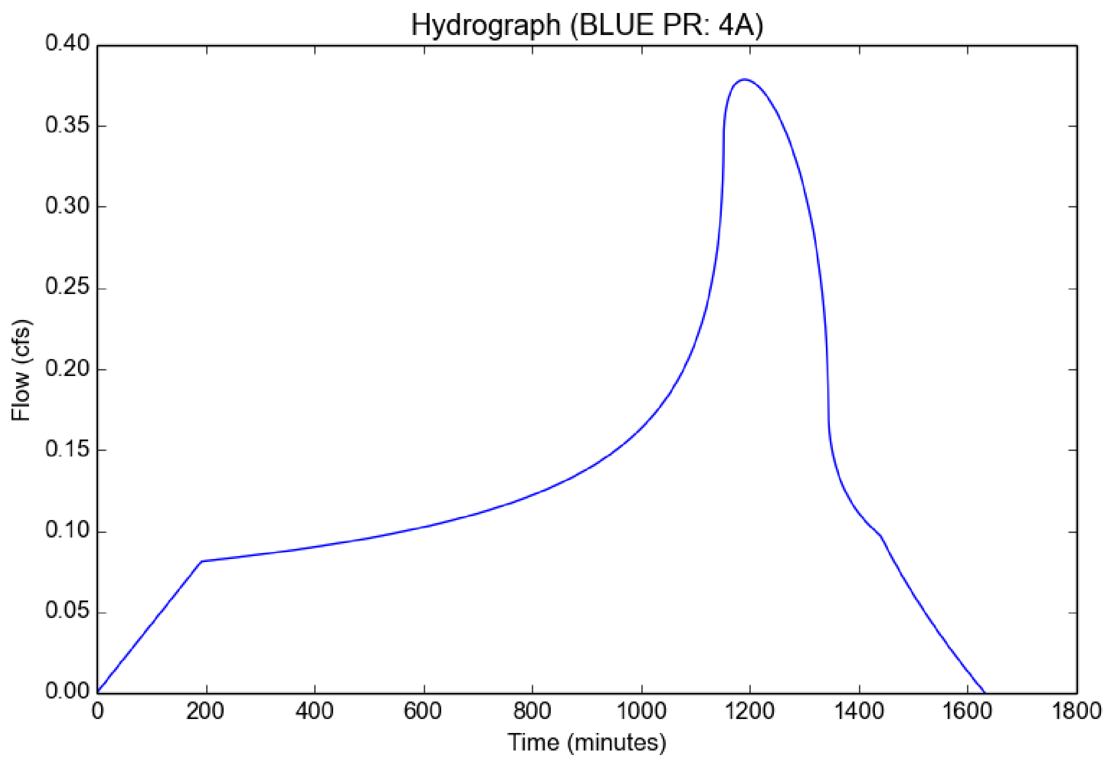
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	4A
Area (ac)	38.4
Flow Path Length (ft)	2544.0
Flow Path Slope (vft/hft)	0.165
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.0913
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.108
Time of Concentration (min)	192.0
Clear Peak Flow Rate (cfs)	0.3787
Burned Peak Flow Rate (cfs)	0.3787
24-Hr Clear Runoff Volume (ac-ft)	0.2915
24-Hr Clear Runoff Volume (cu-ft)	12697.1049



Peak Flow Hydrologic Analysis

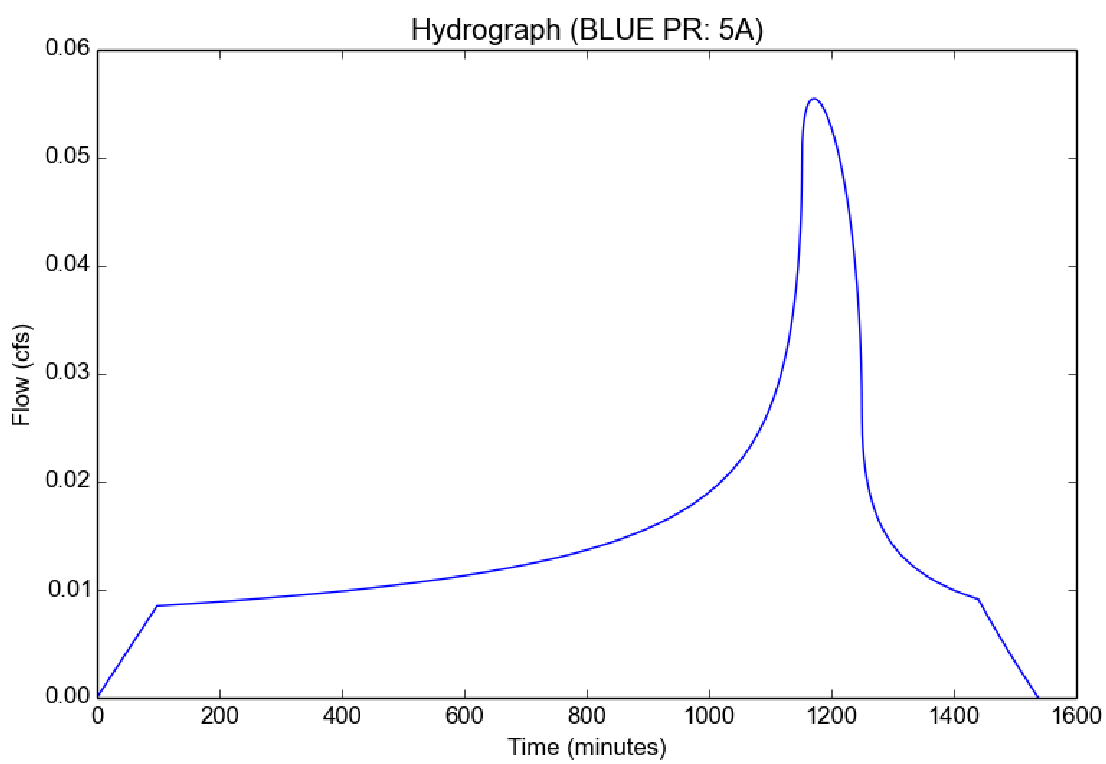
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	5A
Area (ac)	4.1
Flow Path Length (ft)	893.0
Flow Path Slope (vft/hft)	0.169
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.1252
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.108
Time of Concentration (min)	98.0
Clear Peak Flow Rate (cfs)	0.0555
Burned Peak Flow Rate (cfs)	0.0555
24-Hr Clear Runoff Volume (ac-ft)	0.0311
24-Hr Clear Runoff Volume (cu-ft)	1355.1417



Peak Flow Hydrologic Analysis

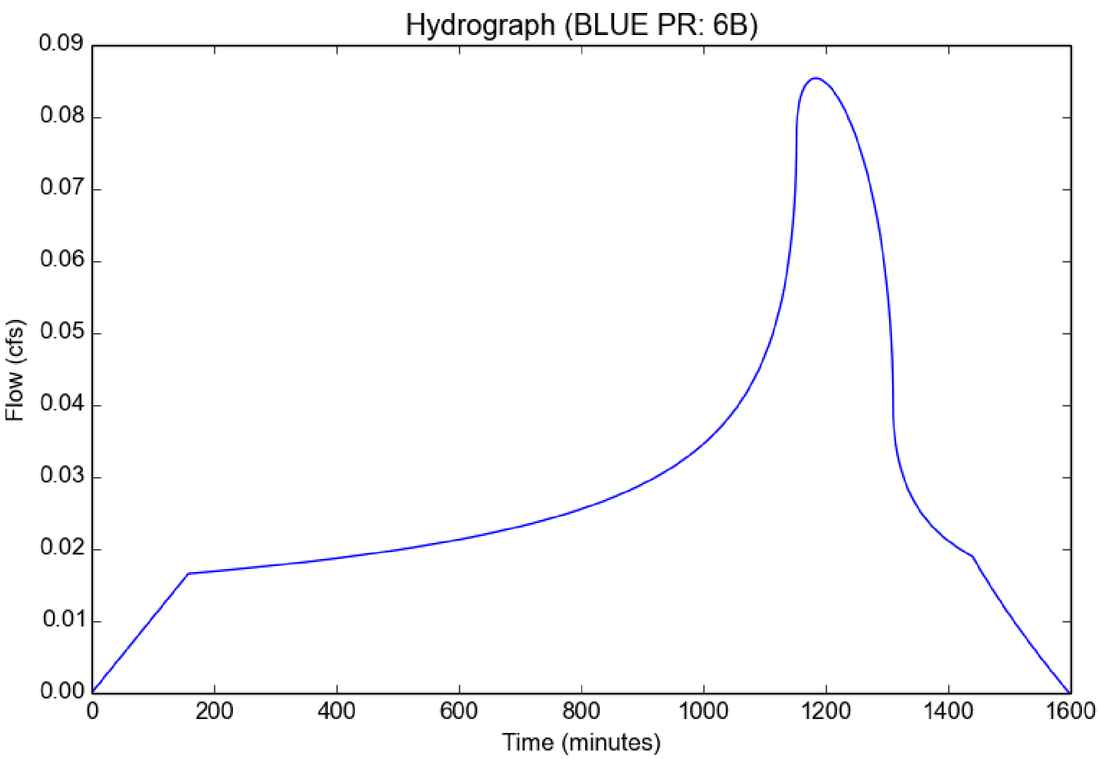
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	6B
Area (ac)	7.9
Flow Path Length (ft)	1944.0
Flow Path Slope (vft/hft)	0.185
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.1001
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.108
Time of Concentration (min)	158.0
Clear Peak Flow Rate (cfs)	0.0854
Burned Peak Flow Rate (cfs)	0.0854
24-Hr Clear Runoff Volume (ac-ft)	0.06
24-Hr Clear Runoff Volume (cu-ft)	2611.6991



Peak Flow Hydrologic Analysis

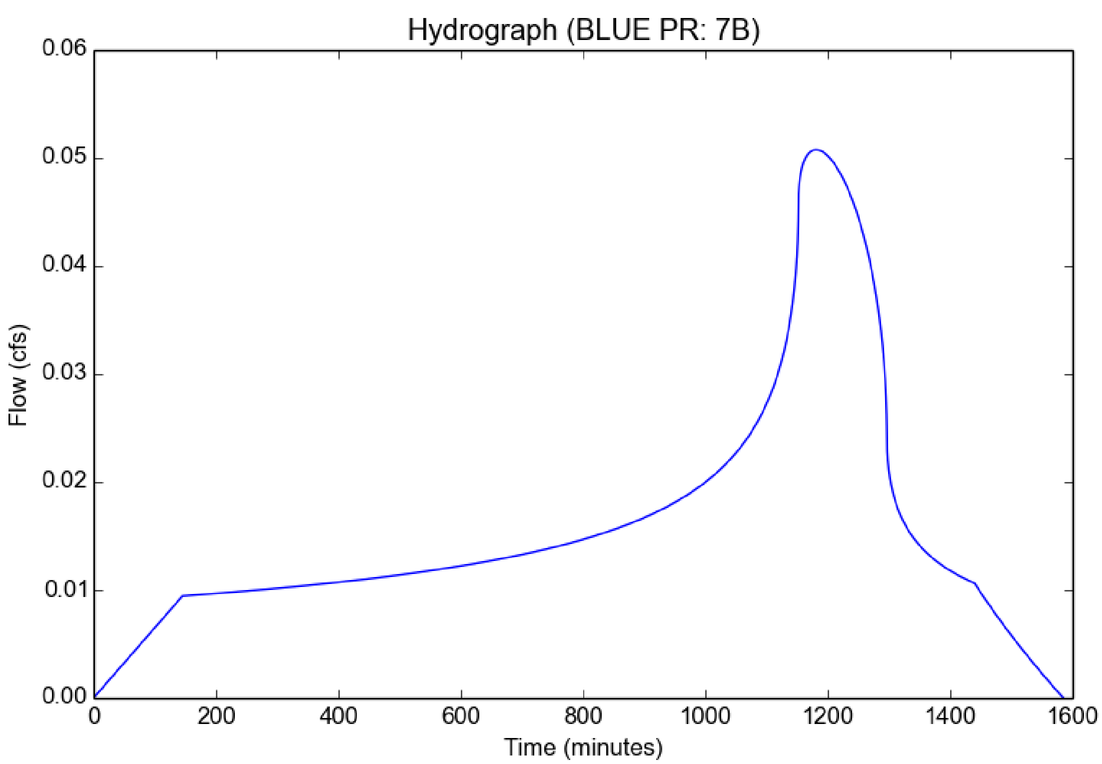
File location: C:/Users/eumirr/Documents/BLUE PR Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	BLUE PR
Subarea ID	7B
Area (ac)	4.2
Flow Path Length (ft)	1223.0
Flow Path Slope (vft/hft)	0.043
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.02
Soil Type	99
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.1042
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.116
Time of Concentration (min)	145.0
Clear Peak Flow Rate (cfs)	0.0508
Burned Peak Flow Rate (cfs)	0.0508
24-Hr Clear Runoff Volume (ac-ft)	0.0342
24-Hr Clear Runoff Volume (cu-ft)	1491.2643



Program Package Serial Number: 2061
11/13/24 FILE: A2 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat

BLUE CLOUD, PROP 2-YR CLEAR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	12.11	38.3	12.11	2	1132.	.04000	.00	.00	0.	99	25	A11	.01
1	2A	35.3	9.62	73.6	21.00	5	530.	.03600	20.00	.00	0.	99	30	A11	.01
1	3A	.0	.00	73.6	20.90	0	0.	.00000	.00	.00	0.	99	99	A11	.00
1	4A	38.4	10.47	112.0	30.98	5	507.	.03400	20.00	.00	0.	99	30	A11	.01
1	5A	4.1	1.71	116.1	32.13	0	0.	.00000	.00	.00	0.	99	17	A11	.01
1	6B	7.9	2.15	7.9	2.15	0	0.	.00000	.00	.00	0.	99	30	A11	.01
1	7B	4.2	1.16	12.1	3.31	0	0.	.00000	.00	.00	0.	99	30	A11	.02
1	8AB	12.1	3.31	128.2	35.26	0	0.	.00000	.00	.00	0.	99	0	A11	.00

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, PROP 2-YR CLEAR, OUTLET HYD
HYDROGRAPH AT 1 8A   STORM DAY 4   REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.69	200	.71	300	.76	400	.80
500	.85	600	.91	700	.99	800	1.10	900	1.26
1000	1.52	1050	1.86	1100	2.38	1110	2.55	1120	2.83
1130	3.25	1131	3.30	1132	3.35	1133	3.39	1134	3.47
1135	3.54	1136	3.61	1137	3.69	1138	3.80	1139	4.00
1140	4.25	1141	4.64	1142	5.10	1143	5.61	1144	6.18
1145	6.83	1146	7.60	1147	8.47	1148	9.40	1149	10.89
1150	12.77	1151	15.08	1152	17.72	1153	20.58	1154	23.13
1155	25.40	1156	27.37	1157	29.07	1158	30.60	1159	31.92
1160	33.10	1161	34.01	1162	34.66	1163	35.07	1164	35.26
1165	35.25	1166	34.95	1167	34.49	1168	33.93	1169	33.25
1170	32.50	1171	31.85	1172	31.11	1173	30.29	1174	29.40
1175	28.39	1176	27.26	1177	25.97	1178	24.61	1179	22.76
1180	20.49	1181	17.64	1182	14.59	1183	11.75	1184	9.36
1185	7.53	1186	6.20	1187	5.26	1188	4.58	1189	4.08
1190	3.70	1191	3.40	1192	3.16	1193	2.97	1194	2.81
1195	2.68	1196	2.56	1197	2.46	1198	2.37	1199	2.29
1200	2.22	1201	2.16	1202	2.11	1203	2.06	1204	2.02
1205	1.98	1206	1.94	1207	1.90	1208	1.87	1209	1.84
1210	1.81	1211	1.78	1212	1.76	1213	1.73	1214	1.71
1215	1.69	1216	1.67	1217	1.65	1218	1.63	1219	1.61
1220	1.60	1221	1.58	1222	1.56	1223	1.54	1224	1.53
1225	1.51	1226	1.49	1227	1.48	1228	1.47	1229	1.46
1230	1.45	1231	1.44	1232	1.42	1233	1.42	1234	1.40
1235	1.39	1236	1.38	1237	1.37	1238	1.36	1239	1.35
1240	1.34	1241	1.33	1242	1.32	1243	1.31	1244	1.30
1245	1.30	1246	1.29	1247	1.28	1248	1.27	1249	1.26
1250	1.25	1251	1.24	1252	1.23	1253	1.23	1254	1.23
1255	1.22	1256	1.21	1257	1.20	1258	1.19	1259	1.18
1260	1.18	1261	1.17	1262	1.17	1263	1.16	1264	1.16
1265	1.15	1266	1.14	1267	1.14	1268	1.13	1269	1.13
1270	1.12	1271	1.12	1272	1.11	1273	1.11	1274	1.10
1275	1.09	1276	1.09	1277	1.09	1278	1.08	1279	1.08
1280	1.08	1281	1.07	1282	1.07	1283	1.06	1284	1.05
1285	1.05	1286	1.04	1287	1.04	1288	1.04	1289	1.03
1290	1.03	1291	1.03	1292	1.02	1293	1.02	1294	1.01
1295	1.01	1296	1.01	1297	1.01	1298	1.00	1299	1.00
1300	.99	1310	.96	1320	.93	1330	.90	1340	.87
1350	.85	1360	.82	1370	.81	1380	.79	1390	.78
1400	.75	1420	.72	1440	.71	1460	.62	1500	.60

TOTAL VOLUME THIS HYDROGRAPH = 3.50(Ac.Ft)

Program Package Serial Number: 2061

11/13/24 FILE: A50B INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat

BLUE CLOUD, PROP 50-YR DESIGN BURN STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	80.74	38.3	80.74	2	1132.	.04000	.00	.00	0.	299	9	A28	.01
1	2A	35.3	63.89	73.6	138.59	5	530.	.03600	20.00	.00	0.	299	12	A28	.01
1	3A	.0	.00	73.6	137.97	0	0.	.00000	.00	.00	0.	299	99	A28	.00
1	4A	38.4	63.97	112.0	200.76	5	507.	.03400	20.00	.00	0.	299	14	A28	.01
1	5A	4.1	9.78	116.1	205.70	0	0.	.00000	.00	.00	0.	299	7	A28	.01
1	6B	7.9	15.02	7.9	15.02	0	0.	.00000	.00	.00	0.	299	11	A28	.01
1	7B	4.2	7.75	12.1	22.77	0	0.	.00000	.00	.00	0.	99	11	A28	.02
1	8AB	12.1	22.77	128.2	226.54	0	0.	.00000	.00	.00	0.	99	0	A28	.00

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, PROP 50-YR DESIGN BURN, OUTLET HYD
HYDROGRAPH AT 1 8A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	2.80	200	2.92	300	3.07	400	3.24
500	3.47	600	3.73	700	4.06	800	4.52	900	5.18
1000	6.51	1050	13.32	1100	24.30	1110	31.34	1120	40.33
1130	51.01	1131	52.11	1132	53.31	1133	54.80	1134	56.29
1135	57.86	1136	59.30	1137	60.83	1138	62.48	1139	64.40
1140	66.34	1141	68.94	1142	71.93	1143	75.50	1144	79.07
1145	83.37	1146	88.09	1147	93.32	1148	98.42	1149	108.21
1150	121.84	1151	139.27	1152	159.43	1153	181.67	1154	199.67
1155	213.61	1156	221.97	1157	226.45	1158	226.54	1159	222.59
1160	213.50	1161	202.18	1162	187.60	1163	168.05	1164	144.50
1165	122.85	1166	102.93	1167	84.12	1168	69.26	1169	59.97
1170	54.29	1171	49.55	1172	45.88	1173	42.37	1174	39.32
1175	37.13	1176	34.95	1177	32.85	1178	30.92	1179	29.14
1180	27.52	1181	26.02	1182	24.77	1183	23.60	1184	22.45
1185	21.36	1186	20.49	1187	19.59	1188	18.66	1189	17.82
1190	17.14	1191	16.34	1192	15.64	1193	15.05	1194	14.44
1195	13.85	1196	13.31	1197	12.72	1198	12.18	1199	11.76
1200	11.26	1201	10.80	1202	10.38	1203	9.94	1204	9.55
1205	9.21	1206	8.82	1207	8.52	1208	8.10	1209	7.75
1210	7.43	1211	7.16	1212	6.93	1213	6.74	1214	6.58
1215	6.45	1216	6.35	1217	6.26	1218	6.18	1219	6.10
1220	6.02	1221	5.95	1222	5.90	1223	5.82	1224	5.77
1225	5.73	1226	5.69	1227	5.64	1228	5.60	1229	5.58
1230	5.53	1231	5.48	1232	5.43	1233	5.40	1234	5.37
1235	5.34	1236	5.31	1237	5.29	1238	5.24	1239	5.21
1240	5.16	1241	5.14	1242	5.11	1243	5.06	1244	5.04
1245	5.01	1246	5.00	1247	4.96	1248	4.92	1249	4.89
1250	4.87	1251	4.85	1252	4.81	1253	4.79	1254	4.77
1255	4.73	1256	4.72	1257	4.68	1258	4.66	1259	4.64
1260	4.62	1261	4.59	1262	4.56	1263	4.55	1264	4.51
1265	4.50	1266	4.47	1267	4.46	1268	4.45	1269	4.44
1270	4.42	1271	4.40	1272	4.38	1273	4.36	1274	4.31
1275	4.29	1276	4.29	1277	4.29	1278	4.27	1279	4.26
1280	4.25	1281	4.23	1282	4.21	1283	4.18	1284	4.16
1285	4.16	1286	4.15	1287	4.14	1288	4.14	1289	4.11
1290	4.09	1291	4.05	1292	4.02	1293	4.00	1294	3.98
1295	3.97	1296	3.97	1297	3.96	1298	3.93	1299	3.91
1300	3.89	1310	3.78	1320	3.70	1330	3.56	1340	3.43
1350	3.36	1360	3.34	1370	3.21	1380	3.16	1390	3.07
1400	3.02	1420	2.92	1440	2.80	1460	2.48	1500	2.48

TOTAL VOLUME THIS HYDROGRAPH = 17.51(Ac.Ft)

Program Package Serial Number: 2061
11/13/24 FILE: A50 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat
BLUE CLOUD, PROP 50-YR CLEAR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	78.37	38.3	78.37	2	1132.	.04000	.00	.00	0.	99	9	A28	.01
1	2A	35.3	61.84	73.6	134.15	5	530.	.03600	20.00	.00	0.	99	12	A28	.01
1	3A	.0	.00	73.6	133.56	0	0.	.00000	.00	.00	0.	99	99	A28	.00
1	4A	38.4	61.82	112.0	194.08	5	507.	.03400	20.00	.00	0.	99	14	A28	.01
1	5A	4.1	9.52	116.1	198.83	0	0.	.00000	.00	.00	0.	99	7	A28	.01
1	6B	7.9	14.55	7.9	14.55	0	0.	.00000	.00	.00	0.	99	11	A28	.01
1	7B	4.2	7.75	12.1	22.30	0	0.	.00000	.00	.00	0.	99	11	A28	.02
1	8AB	12.1	22.30	128.2	219.22	0	0.	.00000	.00	.00	0.	99	0	A28	.00

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, PROP 50-YR CLEAR, OUTLET HYD
HYDROGRAPH AT   1   8A   STORM DAY 4   REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	1.76	200	1.83	300	1.92	400	2.02
500	2.17	600	2.32	700	2.52	800	2.81	900	3.21
1000	4.11	1050	10.65	1100	21.28	1110	28.06	1120	36.74
1130	46.79	1131	47.92	1132	49.16	1133	50.73	1134	52.18
1135	53.71	1136	55.12	1137	56.61	1138	58.21	1139	60.08
1140	61.97	1141	64.48	1142	67.22	1143	70.35	1144	73.75
1145	78.29	1146	83.14	1147	88.27	1148	93.28	1149	102.86
1150	116.19	1151	133.05	1152	152.57	1153	174.71	1154	192.52
1155	206.12	1156	214.30	1157	218.89	1158	219.22	1159	215.48
1160	206.65	1161	195.70	1162	181.53	1163	162.33	1164	139.15
1165	118.33	1166	98.74	1167	80.09	1168	65.64	1169	56.75
1170	51.12	1171	46.23	1172	42.88	1173	39.62	1174	36.60
1175	33.98	1176	31.77	1177	29.69	1178	27.80	1179	26.06
1180	24.49	1181	23.04	1182	21.83	1183	20.69	1184	19.57
1185	18.51	1186	17.66	1187	16.80	1188	15.90	1189	15.09
1190	14.43	1191	13.66	1192	12.98	1193	12.41	1194	11.82
1195	11.25	1196	10.73	1197	10.15	1198	9.63	1199	9.22
1200	8.74	1201	8.29	1202	7.89	1203	7.46	1204	7.09
1205	6.76	1206	6.39	1207	6.10	1208	5.70	1209	5.36
1210	5.06	1211	4.80	1212	4.58	1213	4.41	1214	4.27
1215	4.15	1216	4.06	1217	3.98	1218	3.91	1219	3.84
1220	3.78	1221	3.73	1222	3.69	1223	3.64	1224	3.60
1225	3.57	1226	3.54	1227	3.51	1228	3.48	1229	3.46
1230	3.43	1231	3.40	1232	3.37	1233	3.35	1234	3.34
1235	3.31	1236	3.29	1237	3.28	1238	3.25	1239	3.23
1240	3.20	1241	3.19	1242	3.17	1243	3.14	1244	3.12
1245	3.11	1246	3.10	1247	3.08	1248	3.06	1249	3.03
1250	3.02	1251	3.01	1252	2.99	1253	2.97	1254	2.96
1255	2.94	1256	2.93	1257	2.90	1258	2.89	1259	2.88
1260	2.87	1261	2.85	1262	2.83	1263	2.82	1264	2.80
1265	2.79	1266	2.78	1267	2.77	1268	2.77	1269	2.76
1270	2.74	1271	2.73	1272	2.72	1273	2.71	1274	2.68
1275	2.67	1276	2.67	1277	2.67	1278	2.65	1279	2.65
1280	2.64	1281	2.63	1282	2.62	1283	2.60	1284	2.59
1285	2.59	1286	2.58	1287	2.57	1288	2.57	1289	2.55
1290	2.54	1291	2.52	1292	2.50	1293	2.49	1294	2.48
1295	2.47	1296	2.47	1297	2.46	1298	2.45	1299	2.43
1300	2.43	1310	2.36	1320	2.31	1330	2.22	1340	2.14
1350	2.10	1360	2.08	1370	2.01	1380	1.98	1390	1.92
1400	1.89	1420	1.83	1440	1.76	1460	1.53	1500	1.53

TOTAL VOLUME THIS HYDROGRAPH =   14.13(Ac.Ft)

Program Package Serial Number: 2061
11/13/24 FILE: A25 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat
BLUE CLOUD, PROP 25-YR CLEAR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	62.27	38.3	62.27	2	1132.	.04000	.00	.00	0.	99	10	A24	.01
1	2A	35.3	49.15	73.6	106.63	5	530.	.03600	20.00	.00	0.	99	13	A24	.01
1	3A	.0	.00	73.6	105.91	0	0.	.00000	.00	.00	0.	99	99	A24	.00
1	4A	38.4	49.54	112.0	153.75	5	507.	.03400	20.00	.00	0.	99	15	A24	.01
1	5A	4.1	7.96	116.1	157.24	0	0.	.00000	.00	.00	0.	99	7	A24	.01
1	6B	7.9	11.52	7.9	11.52	0	0.	.00000	.00	.00	0.	99	12	A24	.01
1	7B	4.2	6.14	12.1	17.66	0	0.	.00000	.00	.00	0.	99	12	A24	.02
1	8AB	12.1	17.66	128.2	173.67	0	0.	.00000	.00	.00	0.	99	0	A24	.00

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, PROP 25-YR CLEAR, OUTLET HYD
HYDROGRAPH AT 1 8A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	1.50	200	1.57	300	1.65	400	1.74
500	1.85	600	1.99	700	2.16	800	2.41	900	2.75
1000	3.32	1050	5.83	1100	14.17	1110	19.72	1120	27.35
1130	35.77	1131	36.77	1132	37.73	1133	38.75	1134	39.91
1135	41.09	1136	42.35	1137	43.66	1138	45.07	1139	46.91
1140	48.47	1141	50.36	1142	52.49	1143	54.88	1144	57.39
1145	60.63	1146	64.18	1147	68.12	1148	72.21	1149	80.14
1150	91.12	1151	104.55	1152	119.28	1153	135.46	1154	149.93
1155	161.64	1156	168.72	1157	172.47	1158	173.67	1159	172.29
1160	168.50	1161	161.94	1162	153.61	1163	142.60	1164	128.35
1165	111.46	1166	94.74	1167	78.50	1168	64.00	1169	53.17
1170	45.84	1171	40.61	1172	37.41	1173	33.94	1174	30.71
1175	27.83	1176	25.32	1177	23.16	1178	21.30	1179	19.66
1180	18.25	1181	16.91	1182	15.79	1183	14.72	1184	13.73
1185	12.88	1186	11.93	1187	11.16	1188	10.36	1189	9.62
1190	8.99	1191	8.44	1192	7.88	1193	7.38	1194	6.78
1195	6.31	1196	5.86	1197	5.46	1198	5.10	1199	4.80
1200	4.56	1201	4.37	1202	4.24	1203	4.11	1204	4.01
1205	3.90	1206	3.82	1207	3.74	1208	3.67	1209	3.61
1210	3.56	1211	3.51	1212	3.47	1213	3.43	1214	3.38
1215	3.35	1216	3.32	1217	3.29	1218	3.26	1219	3.21
1220	3.18	1221	3.16	1222	3.14	1223	3.11	1224	3.08
1225	3.05	1226	3.03	1227	3.01	1228	2.99	1229	2.97
1230	2.94	1231	2.93	1232	2.90	1233	2.88	1234	2.85
1235	2.83	1236	2.82	1237	2.80	1238	2.79	1239	2.77
1240	2.76	1241	2.74	1242	2.72	1243	2.69	1244	2.67
1245	2.66	1246	2.65	1247	2.63	1248	2.61	1249	2.60
1250	2.59	1251	2.58	1252	2.56	1253	2.55	1254	2.54
1255	2.53	1256	2.53	1257	2.51	1258	2.50	1259	2.49
1260	2.48	1261	2.47	1262	2.45	1263	2.44	1264	2.43
1265	2.42	1266	2.40	1267	2.39	1268	2.38	1269	2.38
1270	2.35	1271	2.34	1272	2.33	1273	2.32	1274	2.32
1275	2.31	1276	2.29	1277	2.29	1278	2.28	1279	2.27
1280	2.26	1281	2.24	1282	2.25	1283	2.23	1284	2.22
1285	2.21	1286	2.20	1287	2.18	1288	2.18	1289	2.17
1290	2.17	1291	2.16	1292	2.15	1293	2.15	1294	2.14
1295	2.13	1296	2.11	1297	2.11	1298	2.10	1299	2.10
1300	2.10	1310	2.02	1320	1.95	1330	1.92	1340	1.88
1350	1.81	1360	1.76	1370	1.72	1380	1.68	1390	1.67
1400	1.63	1420	1.56	1440	1.51	1460	1.31	1500	1.31

TOTAL VOLUME THIS HYDROGRAPH = 11.15(Ac.Ft)

Program Package Serial Number: 2061

11/13/24 FILE: A10 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat

BLUE CLOUD, PROP 10-YR CLEAR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	44.52	38.3	44.52	2	1132.	.04000	.00	.00	0.	99	12	A20	.01
1	2A	35.3	34.92	73.6	76.60	5	530.	.03600	20.00	.00	0.	99	16	A20	.01
1	3A	.0	.00	73.6	76.32	0	0.	.00000	.00	.00	0.	99	99	A20	.00
1	4A	38.4	34.27	112.0	109.94	5	507.	.03400	20.00	.00	0.	99	19	A20	.01
1	5A	4.1	5.64	116.1	112.87	0	0.	.00000	.00	.00	0.	99	9	A20	.01
1	6B	7.9	8.13	7.9	8.13	0	0.	.00000	.00	.00	0.	99	15	A20	.01
1	7B	4.2	4.33	12.1	12.46	0	0.	.00000	.00	.00	0.	99	15	A20	.02
1	8AB	12.1	12.46	128.2	124.72	0	0.	.00000	.00	.00	0.	99	0	A20	.00

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, PROP 10-YR CLEAR, OUTLET HYD
HYDROGRAPH AT 1 8A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	1.25	200	1.31	300	1.37	400	1.44
500	1.54	600	1.66	700	1.81	800	2.00	900	2.29
1000	2.77	1050	3.40	1100	7.47	1110	11.43	1120	17.56
1130	24.44	1131	25.11	1132	25.86	1133	26.64	1134	27.47
1135	28.41	1136	29.31	1137	30.38	1138	31.54	1139	32.71
1140	33.93	1141	35.25	1142	36.65	1143	38.20	1144	39.78
1145	41.83	1146	44.09	1147	46.96	1148	50.71	1149	55.85
1150	62.47	1151	70.82	1152	80.56	1153	92.16	1154	102.44
1155	110.68	1156	116.83	1157	121.32	1158	123.76	1159	124.72
1160	123.90	1161	121.77	1162	118.78	1163	115.46	1164	110.24
1165	103.90	1166	96.03	1167	86.80	1168	76.39	1169	66.24
1170	56.49	1171	47.35	1172	39.49	1173	34.34	1174	29.25
1175	25.17	1176	21.85	1177	19.14	1178	16.92	1179	15.05
1180	13.49	1181	12.09	1182	10.86	1183	9.73	1184	8.76
1185	7.89	1186	7.12	1187	6.41	1188	5.78	1189	5.28
1190	4.91	1191	4.63	1192	4.40	1193	4.20	1194	4.04
1195	3.91	1196	3.79	1197	3.69	1198	3.60	1199	3.51
1200	3.45	1201	3.38	1202	3.32	1203	3.27	1204	3.21
1205	3.16	1206	3.11	1207	3.07	1208	3.04	1209	3.00
1210	2.97	1211	2.94	1212	2.90	1213	2.87	1214	2.84
1215	2.80	1216	2.77	1217	2.74	1218	2.71	1219	2.69
1220	2.67	1221	2.65	1222	2.63	1223	2.61	1224	2.59
1225	2.58	1226	2.56	1227	2.54	1228	2.52	1229	2.50
1230	2.48	1231	2.47	1232	2.46	1233	2.44	1234	2.43
1235	2.41	1236	2.39	1237	2.38	1238	2.37	1239	2.35
1240	2.33	1241	2.31	1242	2.30	1243	2.27	1244	2.25
1245	2.24	1246	2.23	1247	2.21	1248	2.21	1249	2.19
1250	2.18	1251	2.17	1252	2.16	1253	2.15	1254	2.14
1255	2.12	1256	2.11	1257	2.10	1258	2.09	1259	2.08
1260	2.08	1261	2.06	1262	2.05	1263	2.05	1264	2.04
1265	2.03	1266	2.02	1267	2.01	1268	2.00	1269	1.99
1270	1.98	1271	1.98	1272	1.96	1273	1.95	1274	1.95
1275	1.94	1276	1.93	1277	1.92	1278	1.91	1279	1.90
1280	1.90	1281	1.89	1282	1.88	1283	1.88	1284	1.87
1285	1.85	1286	1.84	1287	1.83	1288	1.83	1289	1.83
1290	1.82	1291	1.82	1292	1.81	1293	1.81	1294	1.80
1295	1.79	1296	1.78	1297	1.77	1298	1.77	1299	1.76
1300	1.75	1310	1.69	1320	1.64	1330	1.60	1340	1.56
1350	1.52	1360	1.47	1370	1.43	1380	1.42	1390	1.39
1400	1.35	1420	1.30	1440	1.26	1460	1.09	1500	1.09

TOTAL VOLUME THIS HYDROGRAPH = 8.45(Ac.Ft)

Program Package Serial Number: 2061

11/13/24 FILE: A5 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat

BLUE CLOUD, PROP 5-YR CLEAR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	29.60	38.3	29.60	2	1132.	.04000	.00	.00	0.	99	15	A16	.01
1	2A	35.3	23.36	73.6	51.04	5	530.	.03600	20.00	.00	0.	99	19	A16	.01
1	3A	.0	.00	73.6	50.86	0	0.	.00000	.00	.00	0.	99	99	A16	.00
1	4A	38.4	22.52	112.0	72.94	5	507.	.03400	20.00	.00	0.	99	23	A16	.01
1	5A	4.1	3.81	116.1	75.29	0	0.	.00000	.00	.00	0.	99	11	A16	.01
1	6B	7.9	5.42	7.9	5.42	0	0.	.00000	.00	.00	0.	99	18	A16	.01
1	7B	4.2	2.89	12.1	8.31	0	0.	.00000	.00	.00	0.	99	18	A16	.02
1	8AB	12.1	8.31	128.2	83.20	0	0.	.00000	.00	.00	0.	99	0	A16	.00

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, PROP 5-YR CLEAR, OUTLET HYD
HYDROGRAPH AT 1 8A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	1.00	200	1.04	300	1.10	400	1.16
500	1.24	600	1.33	700	1.44	800	1.60	900	1.83
1000	2.22	1050	2.71	1100	3.45	1110	4.42	1120	7.94
1130	13.09	1131	13.65	1132	14.15	1133	14.79	1134	15.42
1135	16.07	1136	16.79	1137	17.56	1138	18.39	1139	19.29
1140	20.22	1141	21.30	1142	22.42	1143	23.64	1144	24.86
1145	26.30	1146	27.85	1147	29.62	1148	31.50	1149	34.61
1150	38.43	1151	43.19	1152	49.29	1153	57.35	1154	63.74
1155	68.87	1156	73.46	1157	77.78	1158	81.00	1159	82.80
1160	83.20	1161	82.83	1162	81.84	1163	80.23	1164	78.28
1165	76.18	1166	73.78	1167	70.41	1168	66.58	1169	62.20
1170	57.16	1171	51.52	1172	45.71	1173	39.64	1174	34.30
1175	28.76	1176	23.22	1177	18.32	1178	14.50	1179	11.80
1180	9.76	1181	8.17	1182	6.93	1183	6.03	1184	5.40
1185	4.92	1186	4.56	1187	4.26	1188	4.03	1189	3.82
1190	3.66	1191	3.52	1192	3.40	1193	3.29	1194	3.20
1195	3.11	1196	3.03	1197	2.96	1198	2.90	1199	2.85
1200	2.80	1201	2.75	1202	2.71	1203	2.67	1204	2.62
1205	2.59	1206	2.55	1207	2.52	1208	2.49	1209	2.46
1210	2.43	1211	2.40	1212	2.37	1213	2.34	1214	2.32
1215	2.30	1216	2.27	1217	2.25	1218	2.22	1219	2.20
1220	2.19	1221	2.17	1222	2.15	1223	2.13	1224	2.11
1225	2.09	1226	2.07	1227	2.06	1228	2.04	1229	2.03
1230	2.01	1231	1.99	1232	1.98	1233	1.97	1234	1.96
1235	1.94	1236	1.93	1237	1.91	1238	1.89	1239	1.88
1240	1.87	1241	1.86	1242	1.85	1243	1.84	1244	1.84
1245	1.83	1246	1.82	1247	1.81	1248	1.80	1249	1.78
1250	1.77	1251	1.75	1252	1.74	1253	1.73	1254	1.72
1255	1.71	1256	1.71	1257	1.70	1258	1.69	1259	1.69
1260	1.68	1261	1.67	1262	1.66	1263	1.65	1264	1.64
1265	1.63	1266	1.62	1267	1.61	1268	1.60	1269	1.59
1270	1.58	1271	1.58	1272	1.58	1273	1.57	1274	1.57
1275	1.57	1276	1.55	1277	1.55	1278	1.54	1279	1.54
1280	1.52	1281	1.52	1282	1.51	1283	1.51	1284	1.50
1285	1.50	1286	1.49	1287	1.48	1288	1.48	1289	1.47
1290	1.46	1291	1.46	1292	1.46	1293	1.45	1294	1.45
1295	1.44	1296	1.43	1297	1.43	1298	1.42	1299	1.42
1300	1.41	1310	1.39	1320	1.33	1330	1.27	1340	1.26
1350	1.23	1360	1.19	1370	1.15	1380	1.11	1390	1.09
1400	1.08	1420	1.05	1440	1.01	1460	.87	1500	.87

TOTAL VOLUME THIS HYDROGRAPH = 6.05(Ac.Ft)

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\scr_soilx_34.dat

BLUE CLOUD, PROP 85TH PERCENTILE CLEAR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	38.3	8.77	38.3	8.77	2	1132.	.04000	.00	.00	0.	99	30	A 4	.01
1	2A	35.3	8.08	73.6	16.15	5	530.	.03600	20.00	.00	0.	99	30	A 4	.01
1	3A	.0	.00	73.6	16.09	0	0.	.00000	.00	.00	0.	99	99	A 4	.00
1	4A	38.4	8.79	112.0	24.42	5	507.	.03400	20.00	.00	0.	99	30	A 4	.01
1	5A	4.1	.94	116.1	25.21	0	0.	.00000	.00	.00	0.	99	30	A 4	.01
1	6B	7.9	1.81	7.9	1.81	0	0.	.00000	.00	.00	0.	99	30	A 4	.01
1	7B	4.2	.97	12.1	2.78	0	0.	.00000	.00	.00	0.	99	30	A 4	.02
1	8AB	12.1	2.78	128.2	27.80	0	0.	.00000	.00	.00	0.	99	0	A 4	.00

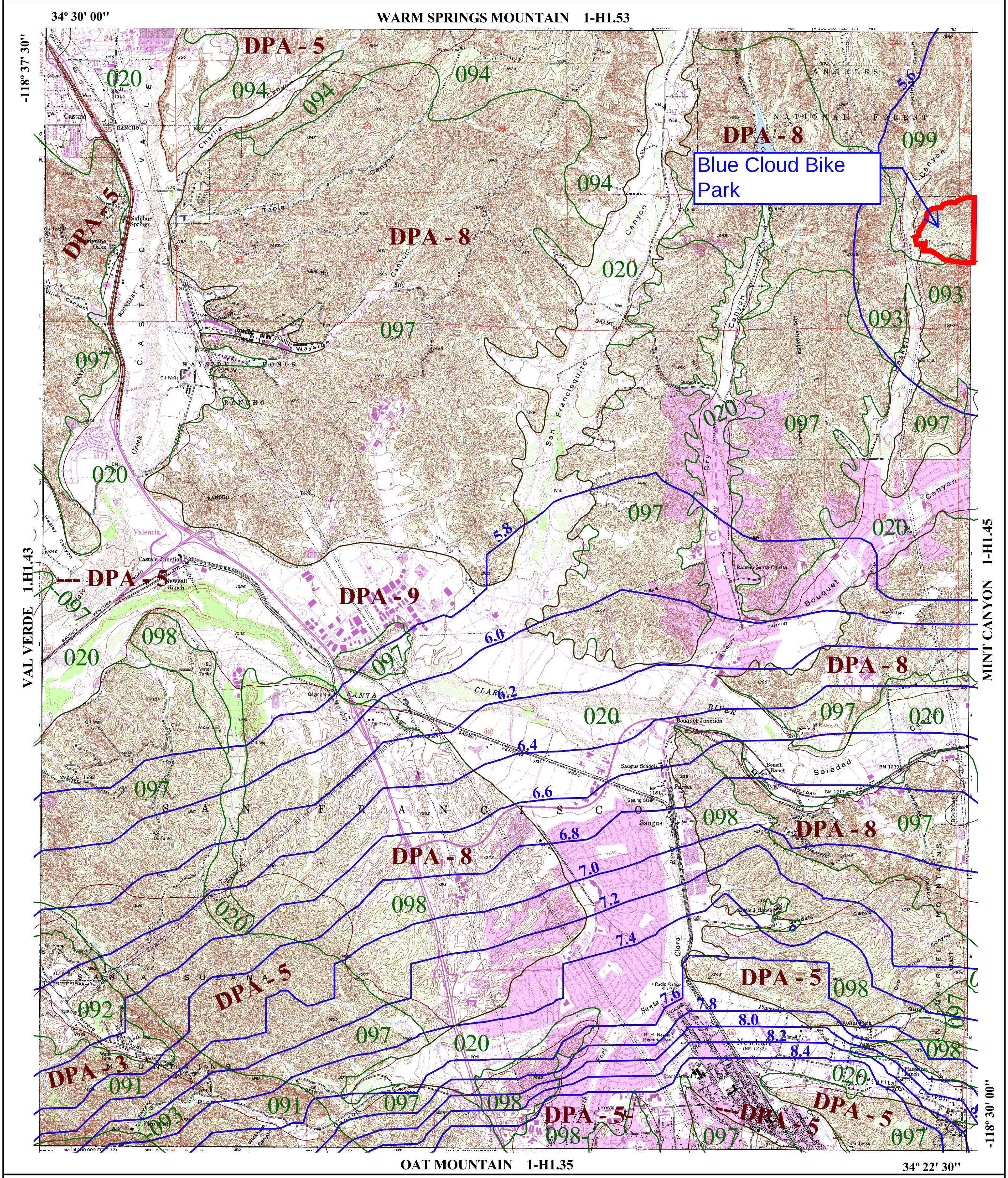
MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
BLUE CLOUD, PROP 85TH PERCENTILE CLEAR, OUTLET HYD
HYDROGRAPH AT 1 8A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.62	200	.65	300	.68	400	.73
500	.77	600	.83	700	.90	800	.99	900	1.15
1000	1.38	1050	1.69	1100	2.16	1110	2.30	1120	2.55
1130	2.94	1131	2.98	1132	3.02	1133	3.06	1134	3.11
1135	3.15	1136	3.20	1137	3.25	1138	3.30	1139	3.36
1140	3.42	1141	3.49	1142	3.56	1143	3.74	1144	4.00
1145	4.42	1146	4.97	1147	5.62	1148	6.32	1149	7.47
1150	8.95	1151	10.83	1152	13.02	1153	15.43	1154	17.60
1155	19.54	1156	21.13	1157	22.52	1158	23.70	1159	24.78
1160	25.71	1161	26.49	1162	27.09	1163	27.49	1164	27.72
1165	27.80	1166	27.80	1167	27.67	1168	27.40	1169	27.05
1170	26.61	1171	26.12	1172	25.52	1173	24.88	1174	24.14
1175	23.31	1176	22.34	1177	21.31	1178	20.21	1179	18.66
1180	16.74	1181	14.46	1182	12.41	1183	10.57	1184	9.16
1185	8.05	1186	7.16	1187	6.38	1188	5.67	1189	5.04
1190	4.49	1191	4.03	1192	3.64	1193	3.33	1194	3.07
1195	2.86	1196	2.68	1197	2.53	1198	2.40	1199	2.30
1200	2.21	1201	2.12	1202	2.05	1203	1.99	1204	1.94
1205	1.88	1206	1.84	1207	1.80	1208	1.76	1209	1.73
1210	1.70	1211	1.67	1212	1.64	1213	1.62	1214	1.59
1215	1.57	1216	1.54	1217	1.53	1218	1.51	1219	1.49
1220	1.47	1221	1.45	1222	1.44	1223	1.43	1224	1.41
1225	1.40	1226	1.38	1227	1.37	1228	1.35	1229	1.34
1230	1.33	1231	1.32	1232	1.31	1233	1.30	1234	1.29
1235	1.28	1236	1.27	1237	1.26	1238	1.25	1239	1.23
1240	1.23	1241	1.22	1242	1.21	1243	1.20	1244	1.19
1245	1.18	1246	1.18	1247	1.17	1248	1.16	1249	1.15
1250	1.15	1251	1.14	1252	1.13	1253	1.13	1254	1.12
1255	1.12	1256	1.11	1257	1.10	1258	1.10	1259	1.09
1260	1.09	1261	1.08	1262	1.07	1263	1.06	1264	1.05
1265	1.05	1266	1.05	1267	1.05	1268	1.04	1269	1.04
1270	1.03	1271	1.02	1272	1.02	1273	1.01	1274	1.01
1275	1.01	1276	1.00	1277	1.00	1278	.99	1279	.99
1280	.98	1281	.97	1282	.97	1283	.96	1284	.96
1285	.96	1286	.96	1287	.96	1288	.95	1289	.95
1290	.94	1291	.94	1292	.93	1293	.93	1294	.93
1295	.92	1296	.92	1297	.91	1298	.91	1299	.91
1300	.90	1310	.88	1320	.85	1330	.82	1340	.79
1350	.77	1360	.75	1370	.74	1380	.71	1390	.70
1400	.70	1420	.66	1440	.63	1460	.57	1500	.54

TOTAL VOLUME THIS HYDROGRAPH = 3.03(Ac.Ft)

C. Hydrologic Reference Graphs & Table

1. 50-Year, 24-Hour Isohyet (LACDPW)
2. Los Angeles County Proportion Impervious Data Table
3. Los Angeles County Debris Production Rates for Santa Clara Basin
4. Los Angeles County Peak Bulking Factors for Santa Clara Basin



016 SOIL CLASSIFICATION AREA

7.2 INCHES OF RAINFALL

DPA - 6 DEBRIS POTENTIAL AREA

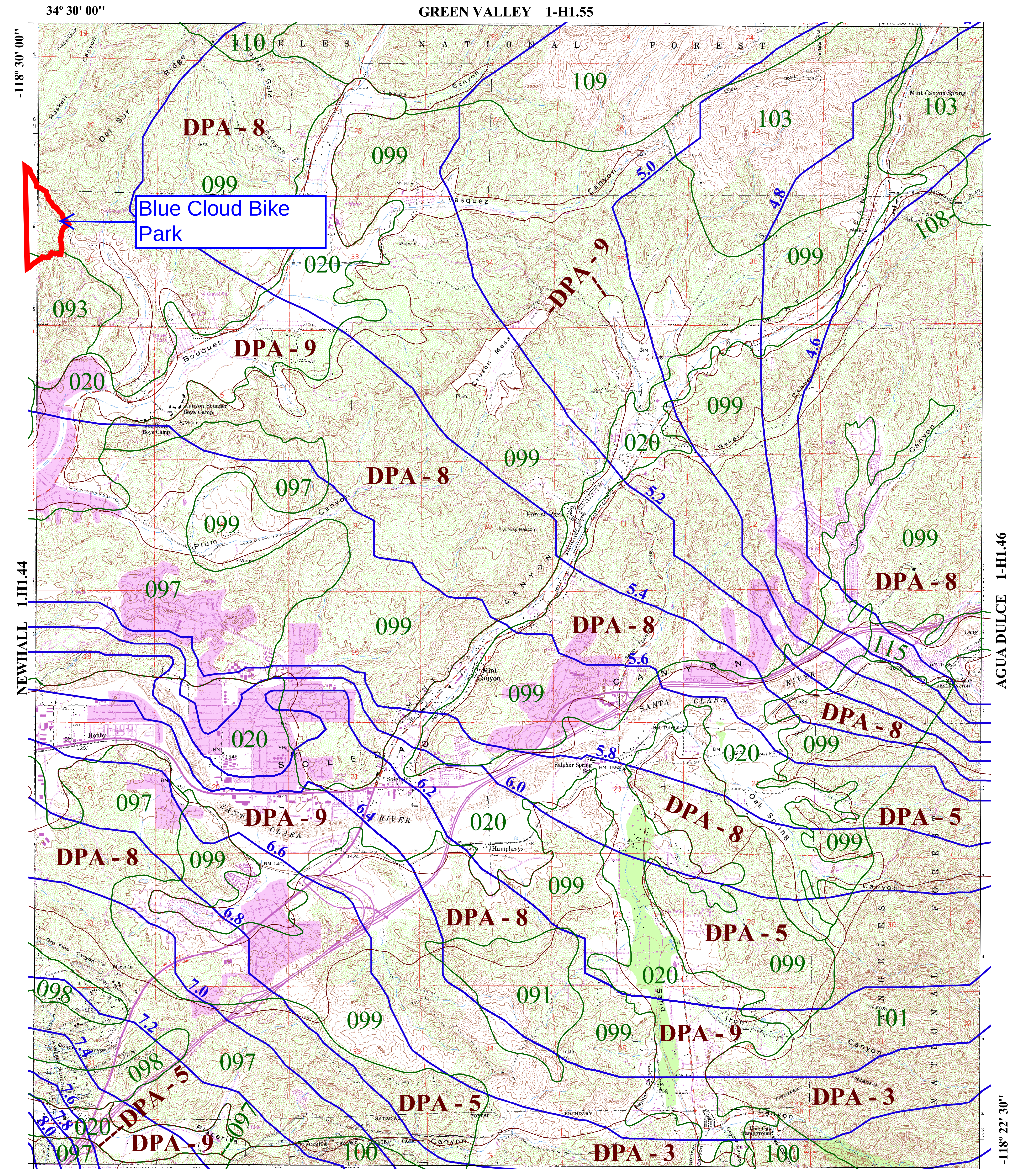
1 0 1 2 Miles

25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714

N E W H A L L
50-YEAR 24-HOUR ISOHYET

1-H1.44

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works



016 SOIL CLASSIFICATION AREA

7.2 INCHES OF RAINFALL

DPA - 6 DEBRIS POTENTIAL AREA

1 0 1 2 Miles

N W E S

25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714

MINT CANYON
50-YEAR 24-HOUR ISOHYET

1-H1.45

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

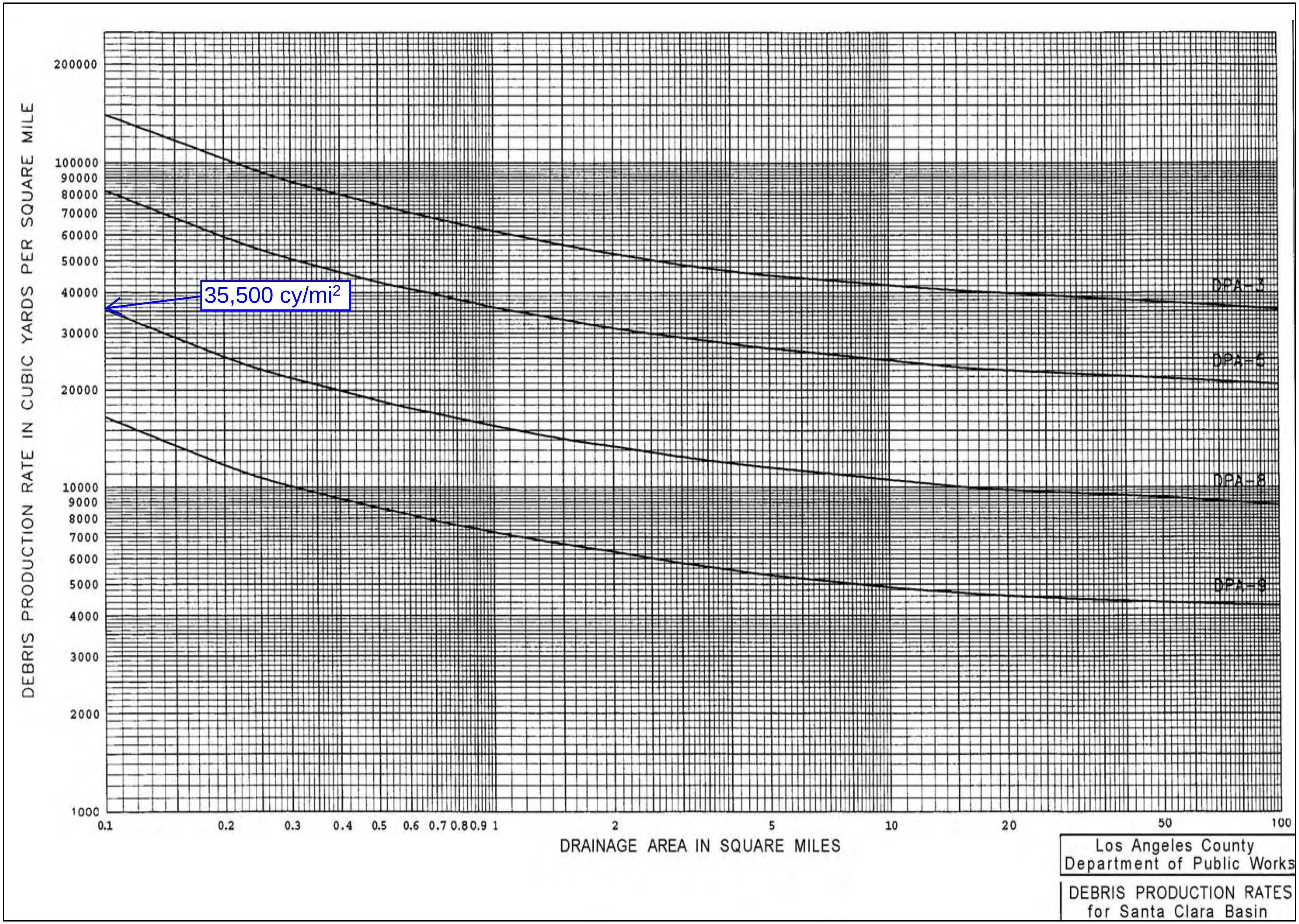
Proportion Impervious Data

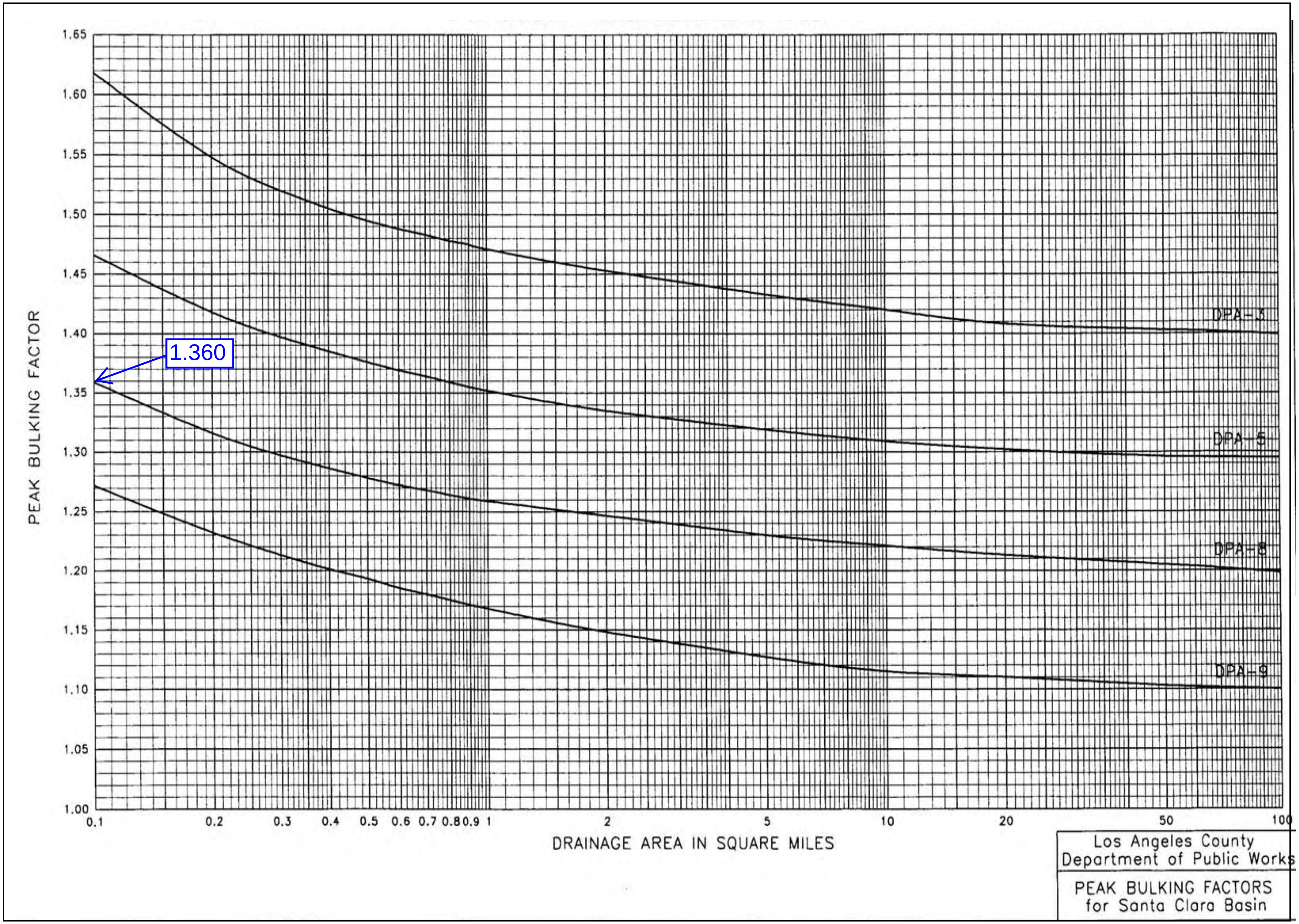
Code	Land Use Description	% Impervious
1111	High-Density Single Family Residential	42
1112	Low-Density Single Family Residential	21
1121	Mixed Multi-Family Residential	74
1122	Duplexes, Triplexes and 2-or 3-Unit Condominiums and Townhouses	55
1123	Low-Rise Apartments, Condominiums, and Townhouses	86
1124	Medium-Rise Apartments and Condominiums	86
1125	High-Rise Apartments and Condominiums	90
1131	Trailer Parks and Mobile Home Courts, High-Density	91
1132	Mobile Home Courts and Subdivisions, Low-Density	42
1140	Mixed Residential	59
1151	Rural Residential, High-Density	15
1152	Rural Residential, Low-Density	10
1211	Low- and Medium-Rise Major Office Use	91
1212	High-Rise Major Office Use	91
1213	Skyscrapers	91
1221	Regional Shopping Center	95
1222	Retail Centers (Non-Strip With Contiguous Interconnected Off-Street	96
1223	Modern Strip Development	96
1224	Older Strip Development	97
1231	Commercial Storage	90
1232	Commercial Recreation	90
1233	Hotels and Motels	96
1234	Attended Pay Public Parking Facilities	91
1241	Government Offices	91
1242	Police and Sheriff Stations	91
1243	Fire Stations	91
1244	Major Medical Health Care Facilities	74
1245	Religious Facilities	82
1246	Other Public Facilities	91
1247	Non-Attended Public Parking Facilities	91
1251	Correctional Facilities	91
1252	Special Care Facilities	74
1253	Other Special Use Facilities	86
1261	Pre-Schools/Day Care Centers	68
1262	Elementary Schools	82
1263	Junior or Intermediate High Schools	82
1264	Senior High Schools	82
1265	Colleges and Universities	47
1266	Trade Schools and Professional Training Facilities	91
1271	Base (Built-up Area)	65
1271.01	Base High-Density Single Family Residential	42
1271.02	Base Duplexes, Triplexes and 2-or 3-Unit Condominiums and T	55

Code	Land Use Description	% Impervious
1271.03	Base Government Offices	91
1271.04	Base Fire Stations	91
1271.05	Base Non-Attended Public Parking Facilities	91
1271.06	Base Air Field	45
1271.07	Base Petroleum Refining and Processing	91
1271.08	Base Mineral Extraction - Oil and Gas	10
1271.09	Base Harbor Facilities	91
1271.10	Base Navigation Aids	47
1271.11	Base Developed Local Parks and Recreation	10
1271.12	Base Vacant Undifferentiated	1
1272	Vacant Area	2
1273	Air Field	45
1274	Former Base (Built-up Area)	65
1275	Former Base Vacant Area	2
1276	Former Base Air Field	91
1311	Manufacturing, Assembly, and Industrial Services	91
1312	Motion Picture and Television Studio Lots	82
1313	Packing Houses and Grain Elevators	96
1314	Research and Development	91
1321	Manufacturing	91
1322	Petroleum Refining and Processing	91
1323	Open Storage	66
1324	Major Metal Processing	91
1325	Chemical Processing	91
1331	Mineral Extraction - Other Than Oil and Gas	10
1332	Mineral Extraction - Oil and Gas	10
1340	Wholesaling and Warehousing	91
1411	Airports	91
1411.01	Airstrip	10
1412	Railroads	15
1412.01	Railroads-Attended Pay Public Parking Facilities	91
1412.02	Railroads-Non-Attended Public Parking Facilities	91
1412.03	Railroads-Manufacturing, Assembly, and Industrial Services	91
1412.04	Railroads-Petroleum Refining and Processing	91
1412.05	Railroads-Open Storage	66
1412.06	Railroads-Truck Terminals	91
1413	Freeways and Major Roads	91
1414	Park-and-Ride Lots	91
1415	Bus Terminals and Yards	91
1416	Truck Terminals	91
1417	Harbor Facilities	91
1418	Navigation Aids	47
1420	Communication Facilities	82
1420.01	Communication Facilities-Antenna	2

Code	Land Use Description	% Impervious
1431	Electrical Power Facilities	47
1431.01	Electrical Power Facilities-Powerlines (Urban)	2
1431.02	Electrical Power Facilities-Powerlines (Rural)	1
1432	Solid Waste Disposal Facilities	15
1433	Liquid Waste Disposal Facilities	96
1434	Water Storage Facilities	91
1435	Natural Gas and Petroleum Facilities	91
1435.01	Natural Gas and Petroleum Facilities-Manufacturing, Assembly, and In	91
1435.02	Natural Gas and Petroleum Facilities-Petroleum Refining and Processing	91
1435.03	Natural Gas and Petroleum Facilities-Mineral Extraction – Oil and Gas	10
1435.04	Natural Gas and Petroleum Facilities-Vacant Undifferentiated	1
1436	Water Transfer Facilities	96
1437	Improved Flood Waterways and Structures	100
1440	Maintenance Yards	91
1450	Mixed Transportation	90
1460	Mixed Transportation and Utility	91
1460.01	Mixed Utility and Transportation-Improved Flood Waterways and Structures	100
1460.02	Mixed Utility and Transportation-Railroads	15
1460.03	Mixed Utility and Transportation-Freeways and Major Roads	91
1500	Mixed Commercial and Industrial	91
1600	Mixed Urban	89
1700	Under Construction (Use appropriate value)	91
1810	Golf Courses	3
1821	Developed Local Parks and Recreation	10
1822	Undeveloped Local Parks and Recreation	2
1831	Developed Regional Parks and Recreation	2
1832	Undeveloped Regional Parks and Recreation	1
1840	Cemeteries	10
1850	Wildlife Preserves and Sanctuaries	2
1850.01	Wildlife-Commercial Recreation	90
1850.02	Wildlife-Other Special Use Facilities	86
1850.03	Wildlife-Developed Local Parks and Recreation	10
1860	Specimen Gardens and Arboreta	15
1870	Beach Parks	10
1880	Other Open Space and Recreation	10
2110	Irrigated Cropland and Improved Pasture Land	2
2120	Non-Irrigated Cropland and Improved Pasture Land	2
2200	Orchards and Vineyards	2
2300	Nurseries	15
2400	Dairy, Intensive Livestock, and Associated Facilities	42
2500	Poultry Operations	62
2600	Other Agriculture	42
2700	Horse Ranches	42

Code	Land Use Description	% Impervious
3100	Vacant Undifferentiated	1
3200	Abandoned Orchards and Vineyards	2
3300	Vacant With Limited Improvements (Use appropriate value)	42
3400	Beaches (Vacant)	1
4100	Water, Undifferentiated	100
4200	Harbor Water Facilities	100
4300	Marina Water Facilities	100
4400	Water Within a Military Installation	100


DEBRIS PRODUCTION RATE IN CUBIC YARDS PER SQUARE MILE
DRAINAGE AREA IN SQUARE MILES
35,500 cy/mi²
DPA-3
DPA-5
DPA-8
DPA-9
Los Angeles County
Department of Public Works
DEBRIS PRODUCTION RATES
for Santa Clara Basin


PEAK BULKING FACTOR
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
1.360
DPA-3
DPA-5
DPA-8
DPA-9
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
2
5
10
20
50
100
DRAINAGE AREA IN SQUARE MILES
Los Angeles County
Department of Public Works
PEAK BULKING FACTORS
for Santa Clara Basin

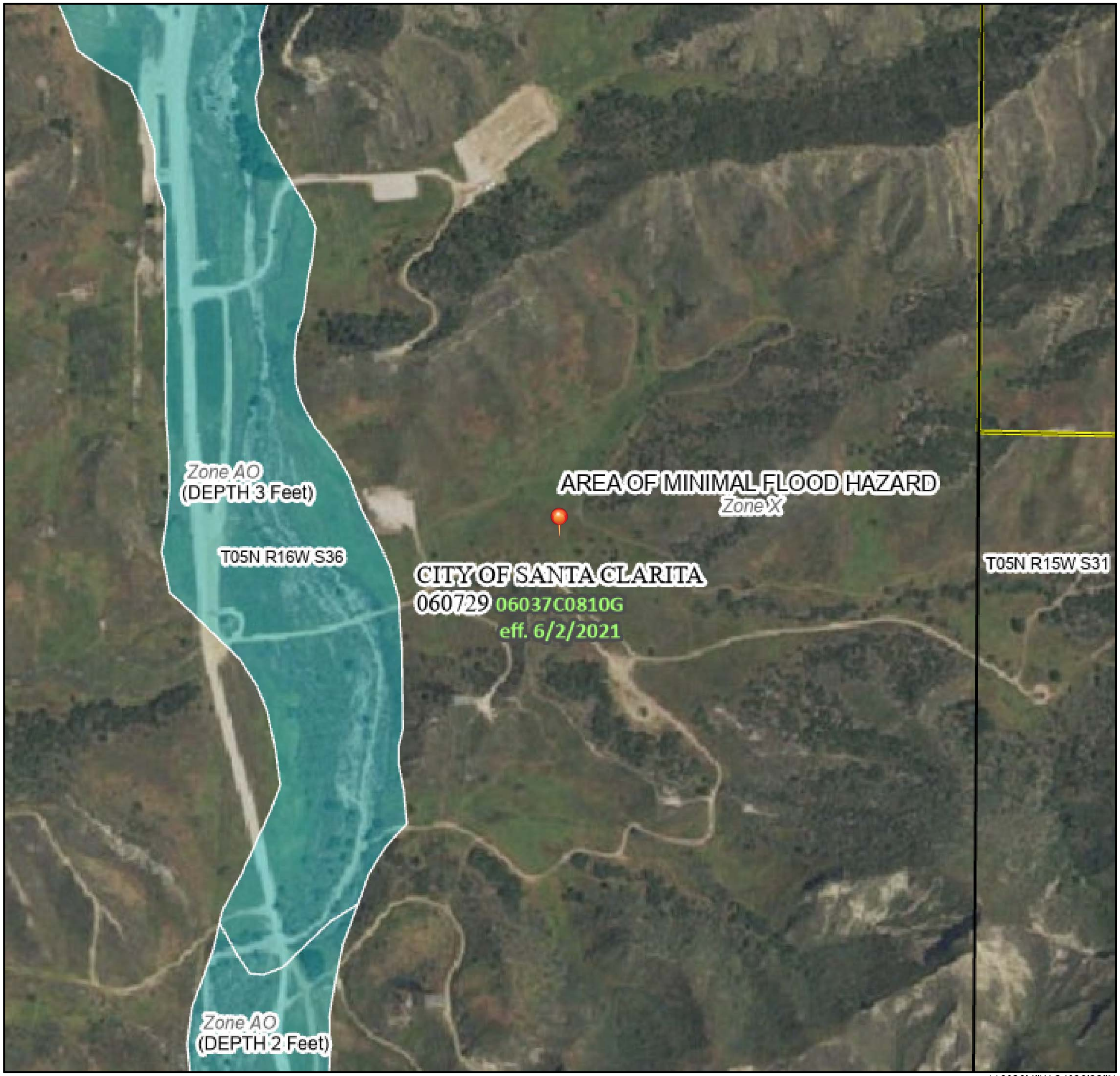
D. Reference Plans

1. FEMA FIRM Panel 06037C0810G, Effective June 02, 2021
2. Haskell Canyon 341-ML2

National Flood Hazard Layer FIRMette

FEMA

118°30'42"W 34°28'52"N



118°30'4"W 34°28'23"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

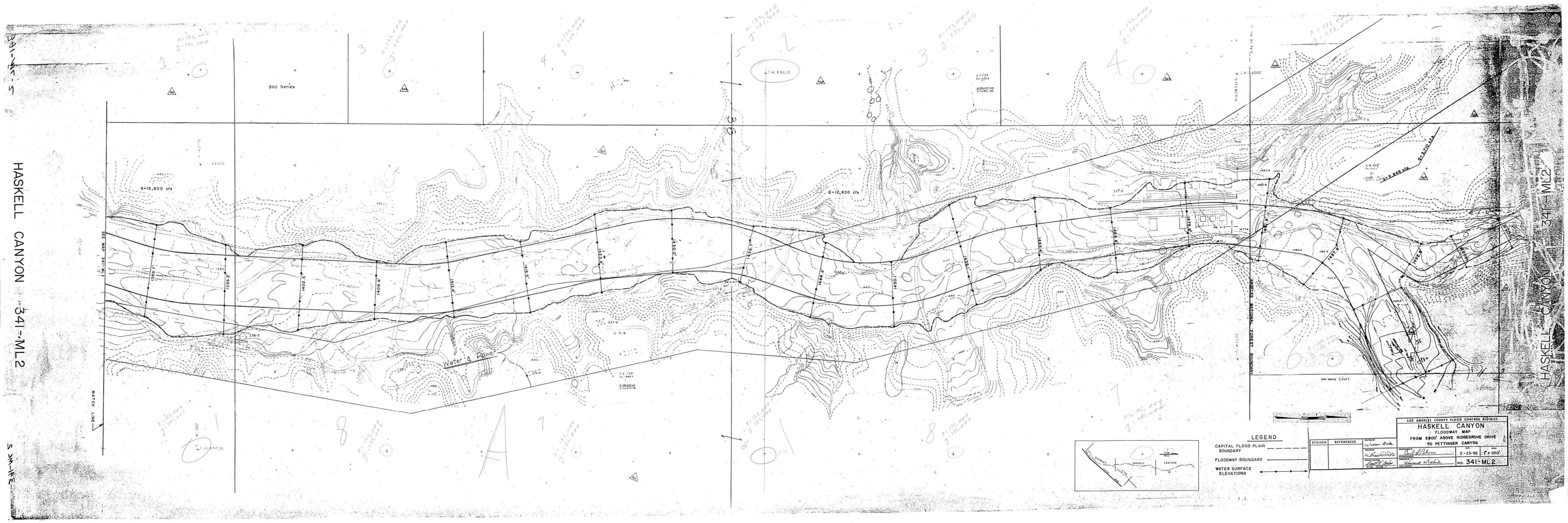
N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/7/2024 at 7:41 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.


HASKELL CANYON 341-ML2
500 Series
Q=13,800 cfs
Q=12,800 cfs
Water's Power
MATCH LINE
300 SERIES (USA)
LEGEND
CAPITAL FLOOD PLAIN BOUNDARY
FLOODWAY BOUNDARY
WATER SURFACE ELEVATIONS
REVISED
REFERENCES
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
HASKELL CANYON
FLOODWAY MAP
FROM 5900' ABOVE RIDGEGROVE DRIVE
TO PETTINGER CANYON
2-23-82
1" = 100'
NO. 341-ML2
HASKELL CANYON 341-ML2

E. Technical Memorandum

Technical Memorandum

Date: November 11th, 2024

To: **JEFF MORRISON, CITY OF SANTA CLARITA**
RONIL SANTA ANA, CITY OF SANTA CLARITA

From: Alireza Sazegari
Hunsaker & Associates Los Angeles, Inc.

Cc: Jason H. Fukumitsu, PE (H&A), Tim Garrett (Avid Trails)

Re: Blue Cloud Mountain Bike Park, City of Sant Clarita
Design Criteria for Drainage and protection system Against flooding – 2-Year Storm Event

1. Introduction

Per the client's request, City of Santa Clarita, this memorandum outlines the design criteria for the drainage and flood protection system to address a 2-year storm event for Blue Cloud Mountain Bike Park. This system is aimed at managing stormwater effectively for the chosen option.

2. Design Criteria Overview

The drainage and flood protection system will be designed to accommodate rainfall and stormwater runoff expected during a 2-year return period storm event. A 2-year storm event is defined by the probability of occurring once every two years or having a 50% probability of occurring in any given year. This criterion was chosen per client's request for the project and will protect the site against low intensity storm events.

3. Hydrologic and Hydraulic Analysis

- **Rainfall Intensity:** Based on local meteorological data, the rainfall intensity for a 2-year storm event will be utilized. This data is sourced from Los Angeles County Hydrology Map.
- **Runoff Coefficients:** Land use, soil type, and slope data specific to the site will determine the runoff coefficients. For impervious surfaces, higher coefficients will be applied to reflect increased runoff.
- **Design Flow Calculations:** Flow rates will be calculated using the Modified Rational Method or an appropriate hydrologic model that considers the 2-year rainfall intensity.

4. Drainage System Design Parameters

- **Drainage Devices Capacity:** All conveyance systems (Drainage devices, pipes, culverts) will be sized to handle peak flows from the 2-year storm event.
- **Inlet Structures:** Inlets will be designed to capture surface runoff efficiently to prevent ponding and local flooding based on a 2-year event.

5. Flood Protection Measures

All protective structures will include a minimum 6 inch of freeboard height to account for uncertainties and prevent overflowing during the 2-year storm event.

6. Maintenance and Monitoring

Regular maintenance, including inspections and cleaning of drainage inlets, pipes, and basins, need to be planned to ensure system functionality.

7. Conclusion

The outlined criteria provide a comprehensive approach to managing drainage and minimizing flood risk for a 2-year storm event. This design aims to meet client's (City of Santa Clarita) request and will provide reliable protection against low storm impacts.

Attachments:

- Email from City's Project Manager, Mr. Jeff Morrison, requesting the 2-year storm event be used for design criteria.

From: Jeff Morrison <JMORRISON@santa-clarita.com>
Sent: Thursday, November 7, 2024 3:13 PM
To: Alireza Sazegari
Cc: Tim Garrett; Jay Hoeschler
Subject: RE: Final Plans

Ronil reviewed the plans and talked with Ali, he said we can design to the minimum, so let's proceed with the 2 year option.

Thank you.

____

Jeff Morrison
Open Space and Trails Administrator
City of Santa Clarita

Phone: (661) 286-4041
Email: JMORRISON@santa-clarita.com
Web: www.santa-clarita.com

From: Alireza Sazegari <ASazegari@hunsaker.com>
Sent: Wednesday, November 6, 2024 11:03 AM
To: Jeff Morrison <JMORRISON@santa-clarita.com>
Cc: Tim Garrett <tim@avidtrails.com>; Jay Hoeschler <jay@avidtrails.com>
Subject: RE: Final Plans

Sorry guys for the late response. We are working on the plans and currently trying to get them out by mid-November. I know earlier I we will try to aim for first week of November but there was more work than expected after we ran the hydrology. On the bright side we figured out a way around it and are working on it.

Regarding the meeting I'm open tomorrow before 11 and after 2.

Thank you,

Alireza Sazegari
Sr. Project Manager
E-mail: ASazegari@hunsaker.com

Hunsaker & Associates, Los Angeles, Inc.
26074 Avenue Hall, Suite 23
Valencia, CA 91355
Main: 661.294.2211 Ext.215
Direct: 661.705.2215
Cell: 661.202.5410
Fax: 661.294.9890

Think before you print

From: Jeff Morrison <JMORRISON@santa-clarita.com>
Sent: Tuesday, November 5, 2024 8:53 AM
To: Jay Hoeschler <jay@avidtrails.com>
Cc: Tim Garrett <tim@avidtrails.com>; Alireza Sazegari <ASazegari@hunsaker.com>
Subject: RE: Final Plans

Hello,

Where we at on those plans and specs?

Thank you.

Jeff Morrison
Open Space and Trails Administrator
City of Santa Clarita

Phone: (661) 286-4041
Email: JMORRISON@santa-clarita.com
Web: www.santa-clarita.com

From: Jay Hoeschler <jay@avidtrails.com>
Sent: Tuesday, October 29, 2024 12:31 PM
To: Jeff Morrison <JMORRISON@santa-clarita.com>
Cc: Tim Garrett <tim@avidtrails.com>; Alireza Sazegari <ASazegari@hunsaker.com>
Subject: Re: Final Plans

Hi Jeff,

When we last checked with Hunsaker, Ali suggested final package will be first week of November, as they just got the geo report late last week.

Ali, can you verify final delivery?

Thanks,
Jay.

> On Oct 28, 2024, at 7:55 AM, Jeff Morrison <JMORRISON@santa-clarita.com> wrote:
>
> How we doing? Last week, hope its going to be a happy Halloween….

Let me know.

Thank you.

____

Jeff Morrison
Open Space and Trails Administrator
City of Santa Clarita

Phone: (661) 286-4041
Email: JMORRISON@santa-clarita.com
Web: www.santa-clarita.com

F. Hydrology Maps

1. Existing Condition Hydrology Map
2. Proposed Condition Hydrology Map

REFERENCE STORM FREQUENCIES:

50-yr BB										JUNCTION			
Subarea	Node	Area (ac)	Imp	Soil Type	50-Yr Depth (in)	50-Yr Tc (min)	Q_{50b} (cfs)	Q_{50bb} (cfs)	DPV (cy)	Σarea (ac)	ΣQ_{50b} (cfs)	ΣQ_{50bb} (cfs)	ΣDPV (cy)
1A		38.3	0.01	99	5.5	9	80.7	109.8	2,124	38.3	80.7		
2A		35.8	0.01	99	5.5	12	64.8	88.1	1,986	74.1	138.7		
	2A									74.1	138.7	187.2	3,850
3A		8.7	0.01	99	5.5	8	19.4	26.4	483	82.8	153.8		
	3A									82.8	153.8	206.8	4,108
4A		38.8	0.01	99	5.5	14	64.6	87.9	2,152	121.6	217.1		
	4A									121.6	217.1	286.6	4,940
5A		6.6	0.01	99	5.5	7	15.8	21.4	366	128.2	225.4		
	5A									128.2	225.4	296.8	5,108

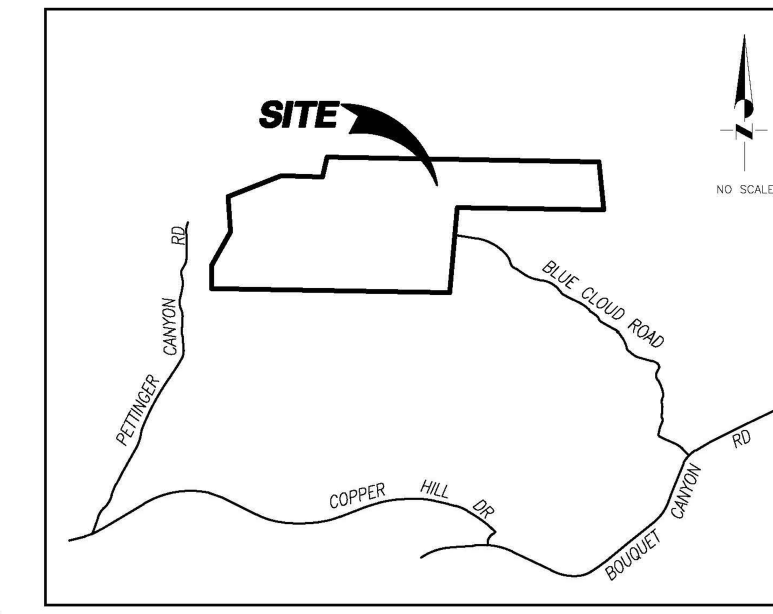
50-yr Clear								JUNCTION	
Subarea	Node	Area (ac)	Imp	Soil Type	50-Yr Depth (in)	50-Yr Tc (min)	Q_{50} (cfs)	Σarea (ac)	ΣQ_{50} (cfs)
1A		38.3	0.01	99	5.5	9	78.4	38.3	78.4
2A		35.8	0.01	99	5.5	12	62.7	74.1	134.2
3A		8.7	0.01	99	5.5	8	18.9	82.8	148.7
4A		38.8	0.01	99	5.5	14	62.5	121.6	209.8
5A		6.6	0.01	99	5.5	7	15.3	128.2	217.6

25-yr Clear								JUNCTION	
Subarea	Node	Area (ac)	Imp	Soil Type	25-Yr Depth (in)	25-Yr Tc (min)	Q_{25} (cfs)	Σarea (ac)	ΣQ_{25} (cfs)
1A		38.3	0.01	99	4.829	10	62.3	38.3	62.3
2A		35.8	0.01	99	4.829	13	49.9	74.1	106.5
3A		8.7	0.01	99	4.829	9	14.9	82.8	118.4
4A		38.8	0.01	99	4.829	16	48.2	121.6	164.8
5A		6.6	0.01	99	4.829	8	11.9	128.2	172.2

10-yr Clear								JUNCTION	
Subarea	Node	Area (ac)	Imp	Soil Type	10-Yr Depth (in)	10-Yr Tc (min)	Q_{10} (cfs)	Σarea (ac)	ΣQ_{10} (cfs)
1A		38.3	0.01	99	3.927	12	44.5	38.3	44.5
2A		35.8	0.01	99	3.927	16	35.4	74.1	76.6
3A		8.7	0.01	99	3.927	10	11.3	82.8	85.8
4A		38.8	0.01	99	3.927	19	34.6	121.6	119.5
5A		6.6	0.01	99	3.927	10	8.6	128.2	125.5

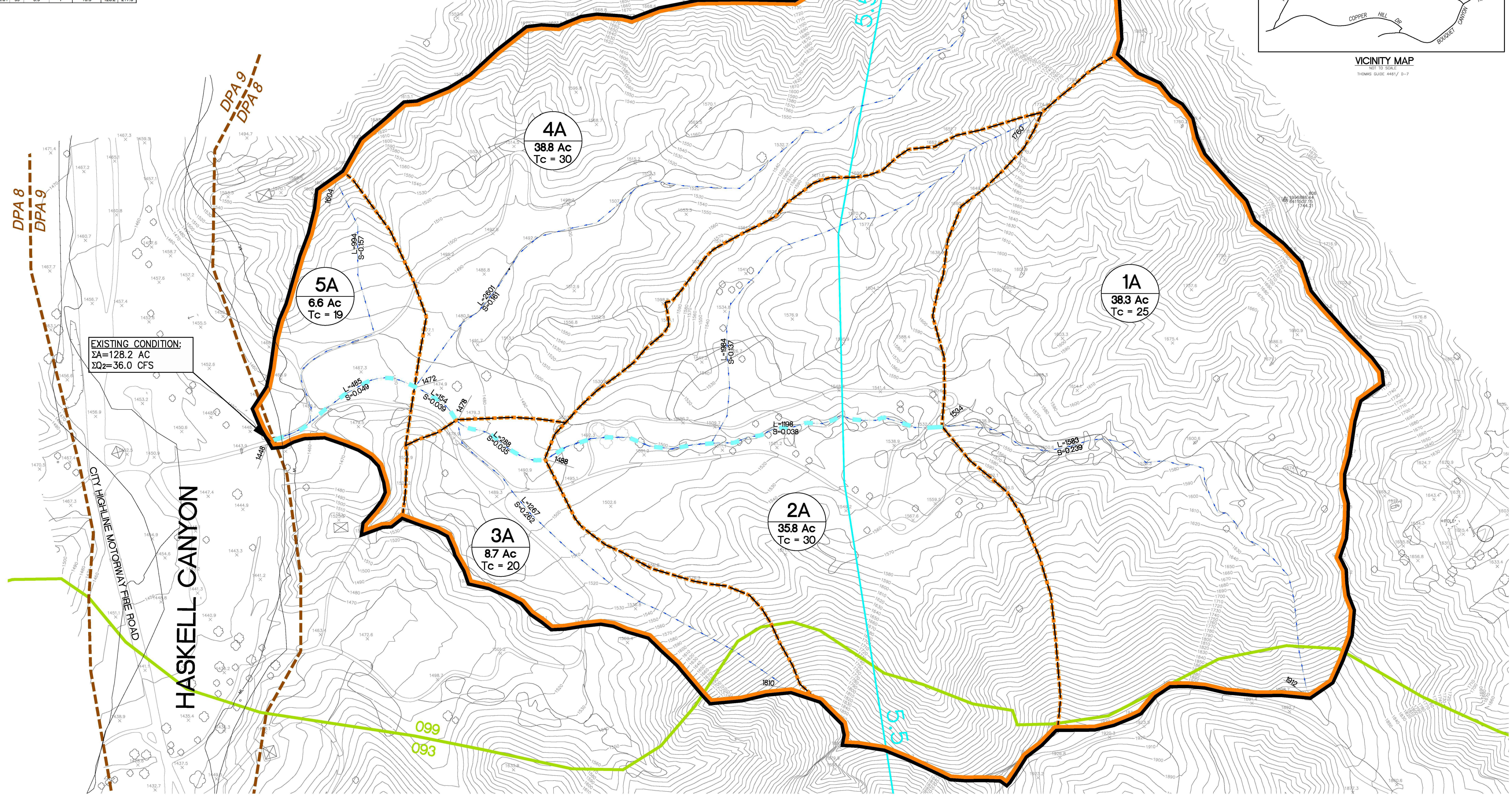
5-yr Clear								JUNCTION	
Subarea	Node	Area (ac)	Imp	Soil Type	5-Yr Depth (in)	5-Yr Tc (min)	Q_5 (cfs)	Σarea (ac)	ΣQ_5 (cfs)
1A		38.3	0.01	99	3.212	15	29.6	38.3	29.6
2A		35.8	0.01	99	3.212	20	22.9	74.1	50.4
3A		8.7	0.01	99	3.212	13	7.3	82.8	56.6
4A		38.8	0.01	99	3.212	24	22.1	121.6	78.3
5A		6.6	0.01	99	3.212	12	5.8	128.2	82.5

85th Percentile								JUNCTION	
Subarea	Node	Area (ac)	Imp	Soil Type	LID Depth (in)	LID Tc (min)	Q_{LID} (cfs)	Σarea (ac)	ΣQ_{LID} (cfs)
1A		38.3	0.01	99	0.85	30	8.8	38.3	8.8
2A		35.8	0.01	99	0.85	30	8.2	74.1	16.1
3A		8.7	0.01	99	0.85	30	2.0	82.8	18.0
4A		38.8	0.01	99	0.85	30	8.9	121.6	26.4
5A		6.6	0.01	99	0.85	30	1.5	128.2	27.7



VICINITY MAP

NOT TO SCALE



LEGEND:

- TRACT BOUNDARY
- DRAINAGE AREA BOUNDARY
- SUBAREA BOUNDARY
- TIME OF CONCENTRATION PATH
- 5.5 ISOHYET
- DEBRIS POTENTIAL AREA (DPA)
- MAIN CONVEYANCE
- SOIL CLASSIFICATION AREA
- PROPOSED WATERSHED BOUNDARY
- FEMA FEMA FLOODZONE
- ML CAPITAL FLOOD PLAIN BOUNDARY

528F — SUBAREA NODE
28.4 AC — ACREAGE
Tc = 11 — TIME OF CONCENTRATION

DRAINAGE DESIGN CRITERIA:

1. 50–YR, 24–HR ISOHYETS: 5.5"
2. SOIL NUMBER: 99
3. DESIGN STORM: 2–YR, 24–HR, CLEAR STORM
4. PERCENT IMPERVIOUS VALUES:
   Undeveloped Natural Areas: 1%
5. DPA = 8, 35,500 CY PER SQ MI
6. BULKING FOR DPA 8: 1.36 FOR THE FIRST 0.1 SQ MI

2-YR DESIGN STORM:

2-yr Clear (DESIGN STORM)								JUNCTION	
Subarea	Node	Area (ac)	Imp	Soil Type	2-Yr Depth (in)	2-Yr Tc (min)	Q_2 (cfs)	Σarea (ac)	ΣQ_2 (cfs)
1A		38.3	0.01	99	2.1285	25	12.1	38.3	12.1
2A		35.8	0.01	99	2.1285	30	9.8	74.1	21.0
3A		8.7	0.01	99	2.1285	20	3.2	82.8	23.8
4A		38.8	0.01	99	2.1285	30	10.6	121.6	34.0
5A		6.6	0.01	99	2.1285	19	2.6	128.2	36.0

NORTH

FEET 100' 50' 0' 100'
1" ½" 0" 1" INCHES

DESIGNED: ER					
DRAFTED: SC					
CHECKED: JHF	NO.		REVISIONS	DATE	BY

OWNER/DEVELOPER:
CITY OF SANTA CLARITA
PARK PLANNING AND OPEN SPACE
PROJECT MANAGER: JEFF MORRISON
23920 VALENCIA BLVD. SUITE. 270
SANTA CLARITA, CA 91355–2196

REGISTERED PROFESSIONAL ENGINEER
JASON H. FUKUMITSU
No. 40695
CIVIL
STATE OF CALIFORNIA

PLANS PREPARED BY:
HUNSAKER & ASSOCIATES
LOS ANGELES, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
26074 Avenue Hall, Ste 23 ▪ Valencia, CA 91355
PH: (661) 294-2211 ▪ FX: (661) 294-9890

JASON H. FUKUMITSU DATE

CITY OF SANTA CLARITA
BLUE CLOUD MOUNTAIN BIKE PARK
EXISTING CONDITIONS
HYDROLOGY STUDY MAP

IN THE UNINCORPORATED AREA OF THE COUNTY OF LOS ANGELES STATE OF CALIFORNIA

SCALE: 1" = 100'
DATE: 11/08/2024
JOB No. 0317–001–001
SHEET
OF 1 SHEET

REFERENCE STORM FREQUENCIES:

50-yr BB										JUNCTION			
Subarea	Node	Area (ac)	Imp	Soil Type	25/50-Yr Depth (in)	25/50-Yr Tc (min)	Q_{50}/Q_{50b} (cfs)	Q_{50bb} (cfs)	DPV (cy)	Σarea (ac)	ΣQ_{50b} (cfs)	ΣQ_{50bb} (cfs)	ΣDPV (cy)
1A		38.3	0.01	99	5.5	9	80.7	109.8	2,124	38.3	80.7		
2A		35.3	0.01	99	5.5	12	63.9	86.9	1,958	73.6	138.6		
	2A									73.6	138.6	187.1	3,824
4A		38.4	0.01	99	5.5	14	64.0	87.0	2,130	112	200.8		
	4A									112	200.8	266.0	4,725
5A		4.1	0.01	99	5.5	7	9.8	13.3	227	116.1	205.7		
	5A									116.1	205.7	272.0	4,807
6B		7.9	0.01	99	5.5	11	15.0	20.4	438	7.9	15.0		
7B		4.2	0.02	99	5.5	11	7.8			12.1	22.8		
	8AB									128.2	226.5	296.0	4,944

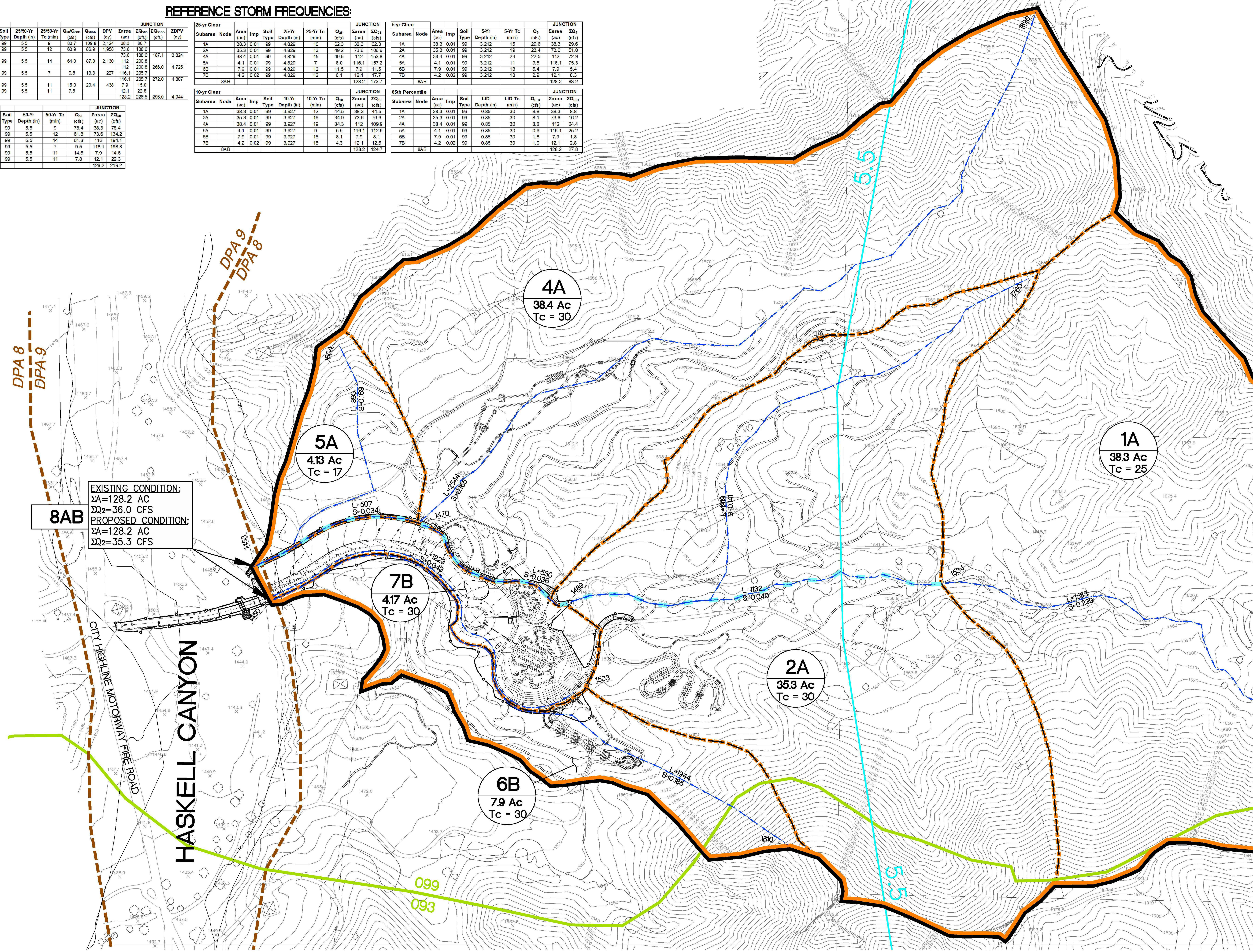
50-yr Clear								JUNCTION	
Subarea	Node	Area (ac)	Imp	Soil Type	50-Yr Depth (in)	50-Yr Tc (min)	Q_{50} (cfs)	Σarea (ac)	ΣQ_{50} (cfs)
1A		38.3	0.01	99	5.5	9	78.4	38.3	78.4
2A		35.3	0.01	99	5.5	12	61.8	73.6	134.2
4A		38.4	0.01	99	5.5	14	61.8	112	194.1
5A		4.1	0.01	99	5.5	7	9.5	116.1	198.8
6B		7.9	0.01	99	5.5	11	14.6	7.9	14.6
7B		4.2	0.02	99	5.5	11	7.8	12.1	22.3
	8AB							128.2	219.2

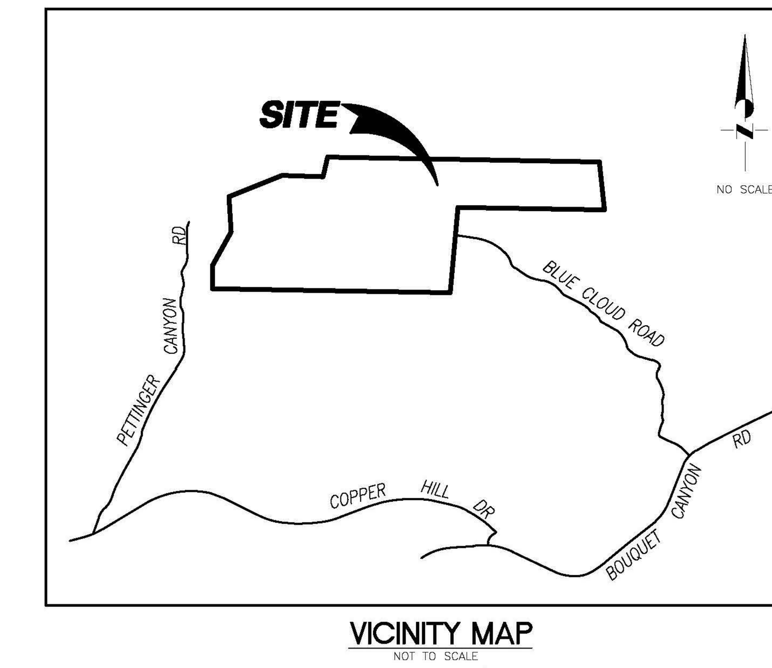
25-yr Clear								JUNCTION	
Subarea	Node	Area (ac)	Imp	Soil Type	25-Yr Depth (in)	25-Yr Tc (min)	Q_{25} (cfs)	Σarea (ac)	ΣQ_{25} (cfs)
1A		38.3	0.01	99	4.829	10	62.3	38.3	62.3
2A		35.3	0.01	99	4.829	13	49.2	73.6	106.6
4A		38.4	0.01	99	4.829	15	49.5	112	153.8
5A		4.1	0.01	99	4.829	7	8.0	116.1	157.2
6B		7.9	0.01	99	4.829	12	11.5	7.9	11.5
7B		4.2	0.02	99	4.829	12	6.1	12.1	17.7
	8AB							128.2	173.7

10-yr Clear								JUNCTION	
Subarea	Node	Area (ac)	Imp	Soil Type	10-Yr Depth (in)	10-Yr Tc (min)	Q_{10} (cfs)	Σarea (ac)	ΣQ_{10} (cfs)
1A		38.3	0.01	99	3.927	12	44.5	38.3	44.5
2A		35.3	0.01	99	3.927	16	34.9	73.6	76.6
4A		38.4	0.01	99	3.927	19	34.3	112	109.9
5A		4.1	0.01	99	3.927	9	5.6	116.1	112.9
6B		7.9	0.01	99	3.927	15	8.1	7.9	8.1
7B		4.2	0.02	99	3.927	15	4.3	12.1	12.5
	8AB							128.2	124.7

5-yr Clear								JUNCTION	
Subarea	Node	Area (ac)	Imp	Soil Type	5-Yr Depth (in)	5-Yr Tc (min)	Q_5 (cfs)	Σarea (ac)	ΣQ_5 (cfs)
1A		38.3	0.01	99	3.212	15	29.6	38.3	29.6
2A		35.3	0.01	99	3.212	19	23.4	73.6	51.0
4A		38.4	0.01	99	3.212	23	22.5	112	72.9
5A		4.1	0.01	99	3.212	11	3.8	116.1	75.3
6B		7.9	0.01	99	3.212	18	5.4	7.9	5.4
7B		4.2	0.02	99	3.212	18	2.9	12.1	8.3
	8AB							128.2	83.2

85th Percentile								JUNCTION	
Subarea	Node	Area (ac)	Imp	Soil Type	LID Depth (in)	LID Tc (min)	Q_{LID} (cfs)	Σarea (ac)	ΣQ_{LID} (cfs)
1A		38.3	0.01	99	0.85	30	8.8	38.3	8.8
2A		35.3	0.01	99	0.85	30	8.1	73.6	16.2
4A		38.4	0.01	99	0.85	30	8.8	112	24.4
5A		4.1	0.01	99	0.85	30	0.9	116.1	25.2
6B		7.9	0.01	99	0.85	30	1.8	7.9	1.8
7B		4.2	0.02	99	0.85	30	1.0	12.1	2.8
	8AB							128.2	27.8





VICINITY MAP
NOT TO SCALE
THOMAS GUIDE 4461/ D-7

LEGEND:

- TRACT BOUNDARY
- DRAINAGE AREA BOUNDARY
- SUBAREA BOUNDARY
- TIME OF CONCENTRATION PATH
- 5.5 ISOHYET
- DEBRIS POTENTIAL AREA (DPA)
- MAIN CONVEYANCE
- SOIL CLASSIFICATION AREA
- PROPOSED WATERSHED BOUNDARY
- FEMA FEMA FLOODZONE
- ML CAPITAL FLOOD PLAIN BOUNDARY

528F — SUBAREA NODE
28.4 AC — ACREAGE
Tc = 11 — TIME OF CONCENTRATION

8AB — CONFLUENCE NODE

DRAINAGE DESIGN CRITERIA:

1. 50–YR, 24–HR ISOHYETS: 5.5"
2. SOIL NUMBER: 99
3. DESIGN STORM: 2–YR, 24–HR, CLEAR STORM
4. PERCENT IMPERVIOUS VALUES:
   Undeveloped Natural Areas: 1%
   Developed Regional Parks and Recreation: 2%
5. DPA = 8, 35,500 CY PER SQ MI
6. BULKING FOR DPA 8: 1.36 FOR THE FIRST 0.1 SQ MI

2-YR DESIGN STORM:

2-yr Clear (DESIGN STORM)								JUNCTION	
Subarea	Node	Area (ac)	Imp	Soil Type	2-Yr Depth (in)	2-Yr Tc (min)	Q_2 (cfs)	Σarea (ac)	ΣQ_2 (cfs)
1A		38.3	0.01	99	2.1285	25	12.1	38.3	12.1
2A		35.3	0.01	99	2.1285	30	9.6	73.6	21.0
4A		38.4	0.01	99	2.1285	30	10.5	112	31.0
5A		4.1	0.01	99	2.1285	17	1.7	116.1	32.1
6B		7.9	0.01	99	2.1285	30	2.2	7.9	2.2
7B		4.2	0.02	99	2.1285	30	1.2	12.1	3.3
	8AB							128.2	35.3

NORTH

FEET 100' 50' 0' 100'
1" ½" 0" 1" INCHES

DESIGNED: ER
DRAFTED: SC
CHECKED: JHF

NO.	REVISIONS	DATE	BY

OWNER/DEVELOPER:
CITY OF SANTA CLARITA
PARK PLANNING AND OPEN SPACE
PROJECT MANAGER: JEFF MORRISON
23920 VALENCIA BLVD. SUITE. 270
SANTA CLARITA, CA 91355–2196

REGISTERED PROFESSIONAL ENGINEER JASON H. FUKUMITSU No. 40695 CIVIL STATE OF CALIFORNIA

PLANS PREPARED BY:
HUNSAKER & ASSOCIATES
LOS ANGELES, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
26074 Avenue Hall, Ste 23 ▪ Valencia, CA 91355
PH: (661) 294-2211 ▪ FX: (661) 294-9890
JASON H. FUKUMITSU DATE

CITY OF SANTA CLARITA
BLUE CLOUD MOUNTAIN BIKE PARK
PROPOSED CONDITIONS
HYDROLOGY STUDY MAP

IN THE UNINCORPORATED AREA OF THE COUNTY OF LOS ANGELES STATE OF CALIFORNIA

SCALE: 1" = 100'
DATE: 11/11/2024
JOB No. 0317–001–001
SHEET
OF 1 SHEET

APPENDIX G:
NOISE IMPACT ANALYSIS

NOISE IMPACT ANALYSIS

SANTA CLARITA BLUE CLOUD BIKE PARK PROJECT

CITY OF SANTA CLARITA

Lead Agency:

City of Santa Clarita
23920 Valencia Boulevard, Suite 300
Santa Clarita, CA 91355-2196

Prepared by:

Vista Environmental
1021 Didrickson Way
Laguna Beach, California 92651
949 510 5355
Greg Tonkovich, INCE

Project No. 23002

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ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
City	City of Santa Clarita
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	A-weighted decibels
DOT	Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
EPA	Environmental Protection Agency
Hz	Hertz
Ldn	Day-night average noise level
Leq	Equivalent sound level
Lmax	Maximum noise level
ONAC	Federal Office of Noise Abatement and Control
OSB	Oriented Strand Board
OSHA	Occupational Safety and Health Administration
PPV	Peak particle velocity
RMS	Root mean square
SEL	Single Event Level or Sound Exposure Level
STC	Sound Transmission Class
VdB	Vibration velocity level in decibels

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Noise Impact Analysis has been prepared to determine the noise and vibration impacts associated with the proposed Santa Clarita Blue Cloud Bike Park project (proposed project). The following is provided in this report:

- A description of the study area and the proposed project;
- Information regarding the fundamentals of noise;
- Information regarding the fundamentals of vibration;
- An evaluation of the current noise environment;
- An analysis of the potential short-term construction-related noise impacts from the proposed project; and,
- An analysis of long-term operations-related noise impacts from the proposed project.

1.2 Site Location and Study Area

The project site is located in the northern portion of the City of Santa Clarita (City). The project site includes nearly 500 acres of open space, including the Haskell Canyon Open Space and the Blue Cloud Open Space areas. The project site is bounded by open space to the north, open space, canine training and boarding facilities and Blue Cloud Road to the east, open space and single-family homes to the south, and open space and Pettinger Canyon Road to the west. The proposed site plan and study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are homes located within the canine training and boarding facilities to the east that are as near as 800 feet from the proposed areas to be disturbed as part of the project. There are also single-family homes as near as 1,700 feet west and 1,900 feet to the south of the areas to be disturbed as part of the project.

1.3 Proposed Project Description

The proposed project would consist of developing a mountain bike park consisting of approximately 15 miles of trails interspersed throughout the Project Site and two activity/programming areas – the Haskell Bike Park Core and the Blue Cloud Trailhead. Trail types for all skill levels provided within the Blue Cloud Bike Park include approximately 3.7 miles of perimeter and climbing trails (beginner and intermediate), approximately 5.5 miles of downhill bike trails (beginner, intermediate, expert, and pro), and approximately 5 miles of multi-use trails ((beginner, intermediate, and expert). The proposed trail widths would range 4 to 6 feet wide. The Project would also maintain approximately 1.6 miles of existing multi-use trails.

The Haskell Core would include a 56-space parking lot and a parking/emergency turnaround with eight additional parking spaces, two American Disabilities Act (ADA) parking spaces, and four spaces for food trucks; an event plaza with picnic tables and a flexible stage; beginner, intermediate, and advanced pump tracks; a dual slalom course; progressive jumplines; and a progressive skills area. Event/spectator areas would be provided adjacent to the main activity areas. Other amenities within the Haskell Core include shade structures at the start zones of the dual slalom course and the progressive jumplines, vault restrooms, bike repair stations, a rest area with benches and shade structure, and cargo containers for storage areas. Several trailheads leading to perimeter, climbing, and multi-use trails would also be located in the Haskell Core.

The Blue Cloud Trailhead would include a parking/emergency turnaround with 10 parking spaces and one ADA parking space. This portion of the Project Site would feature a field station with gathering and restoration work spaces for volunteers, designated areas for potential future landscape restoration, and a multi-use trailhead. Visitor amenities that would be provided at the Blue Cloud Trailhead include vault restrooms, a bike repair station, and the Saddle Trail Hub (meeting space for riders) with a shade structure.

Specifically, the proposed project is anticipated to disturb approximately 20 acres, would require the import of approximately 4,400 cubic yards of material for road and trail base, would include construction of approximately 3,500 square feet of structures, and would pave approximately 123,000 square feet for parking areas, walkways and event plaza areas.

1.4 Executive Summary

Standard Noise Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the City of Santa Clarita and State of California.

City of Santa Clarita Noise Regulations

The following lists the noise and vibration regulations from the Municipal Code that are applicable, but not limited to the proposed project.

- Section 11.44.040 Noise Limits
- Section 11.44.080 Construction Noise Exemptions
- Section 17.15.050 Vibration Performance Standards

State of California Noise Regulations

The following lists the State of California noise regulations that are applicable, but not limited to the proposed project.

- California Vehicle Code Section 2700-27207 – On Road Vehicle Noise Limits
- California Vehicle Code Section 38365-38350 – Off-Road Vehicle Noise Limits

Summary of Analysis Results

The following is a summary of the proposed project’s impacts with regard to the State CEQA Guidelines noise checklist questions.

Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than significant impact.

Generation of excessive groundborne vibration or groundborne noise levels?

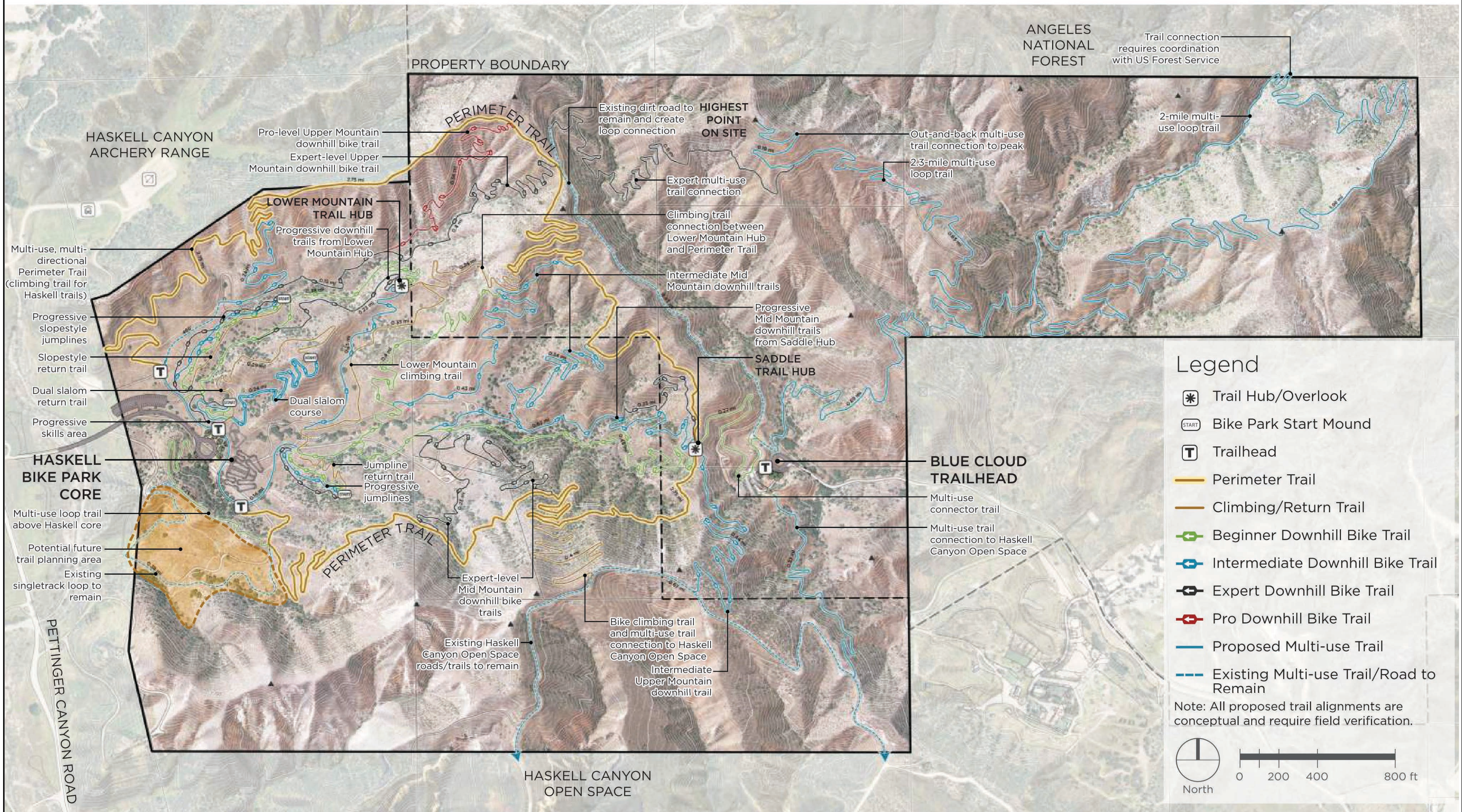
Less than significant impact.

For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No impact.

1.5 Mitigation Measures for the Proposed Project

This analysis found that through adherence to the noise and vibration regulations detailed in Section 1.4 above, all noise and vibration impacts would be reduced to less than significant levels.



SOURCE: Avid Trails.

VISTA ENVIRONMENTAL

Figure 1
Proposed Site Plan and Study Area

2.0 NOISE FUNDAMENTALS

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit which expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear.

2.1 Noise Descriptors

Noise Equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period.

The Day-Night Average Level (Ldn) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time-of-day corrections require the addition of ten decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the Ldn, except that it has another addition of 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels, which creates an increased sensitivity to sounds. For this reason, the sound appears louder in the evening and nighttime hours and is weighted accordingly.

2.2 Tone Noise

A pure tone noise is a noise produced at a single frequency and laboratory tests have shown that humans are more perceptible to changes in noise levels of a pure tone. For a noise source to contain a "pure tone," there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to "stand out" against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contiguous one-third octave bands by:

- 5 dB for center frequencies of 500 hertz (Hz) and above
- 8 dB for center frequencies between 160 and 400 Hz
- 15 dB for center frequencies of 125 Hz or less

2.3 Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects and refraction, and shielding by natural and manmade features. Sound from point sources, such as air conditioning condensers, radiate uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

2.4 Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, as compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3.0 dBA/DD drop-off rate for hard-site conditions. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis.

3.0 GROUND-BORNE VIBRATION FUNDAMENTALS

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

3.1 Vibration Descriptors

There are several different methods that are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Due to the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels and is denoted as (L_v) and is based on the rms velocity amplitude. A commonly used abbreviation is "VdB", which in this text, is when L_v is based on the reference quantity of 1 micro inch per second.

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Off-site sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration.

3.3 Vibration Propagation

The propagation of ground-borne vibration is not as simple to model as airborne noise. This is due to the fact that noise in the air travels through a relatively uniform median, while ground-borne vibrations travel through the earth which may contain significant geological differences. There are three main types of vibration propagation; surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation."

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 REGULATORY SETTING

The project site is located in the City of Santa Clarita. Noise regulations are addressed through the efforts of various federal, state, and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the FTA, while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being sited adjacent to a highway or, alternately that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Although the proposed project is not under the jurisdiction of the FTA, the *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual), prepared by the FTA, September 2018, is a guidance document from a government agency that has defined what constitutes a significant noise impact from implementing a project. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings are provided below in Table A.

Table A – FTA Project Effects on Cumulative Noise Exposure

Existing Noise Exposure (dBA Leq or Ldn)	Allowable Noise Impact Exposure dBA Leq or Ldn		
	Project Only	Combined	Noise Exposure Increase
45	51	52	+7
50	53	55	+5
55	55	58	+3
60	57	62	+2
65	60	66	+1
70	64	71	+1
75	65	75	0

Source: Federal Transit Administration, 2018.

The FTA also provides guidance on construction noise and recommends developing construction noise criteria on a project-specific basis that utilizes local noise ordinances if possible. However, local noise ordinances usually relate to nuisance and hours of allowed activity and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the noise impacts of a construction project. Project construction noise criteria should take into account the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land uses. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings for a detailed construction noise assessment are provided below in Table B.

Table B – FTA Construction Noise Criteria

Land Use	Day (dBA $Leq_{(8\text{-hour})}$)	Night (dBA $Leq_{(8\text{-hour})}$)	30-day Average (dBA Ldn)
Residential	80	70	75
Commercial	85	85	80[1]
Industrial	90	90	85[1]

Notes:
[1] Use a 24-hour $Leq_{(24\ hour)}$ instead of $Ldn_{(30\ day)}$.
Source: Federal Transit Administration, 2018.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

4.2 State Regulations

Noise Standards

California Department of Health Services Office of Noise Control

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the "Land Use Compatibility for Community Noise Environments Matrix," which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

California Noise Insulation Standards

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

Government Code Section 65302

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

California Vehicle Code Section 27200-27207 – On-Road Vehicle Noise

California Vehicle Code Section 27200-27207 provides noise limits for vehicles operated in California. For vehicles over 10,000 pounds noise is limited to 88 dB for vehicles manufactured before 1973, 86 dB for vehicles manufactured before 1975, 83 dB for vehicles manufactured before 1988, and 80 dB for vehicles manufactured after 1987. All measurements are based at 50 feet from the vehicle.

California Vehicle Section 38365-38380 – Off-Road Vehicle Noise

California Vehicle Code Section 38365-38380 provides noise limits for off-highway motor vehicles operated in California. 92 dBA for vehicles manufactured before 1973, 88 dBA for vehicles manufactured before 1975, 86 dBA for vehicles manufactured before 1986, and 82 dBA for vehicles manufactured after December 31, 1985. All measurements are based at 50 feet from the vehicle.

Vibration Standards

Title 14 of the California Administrative Code Section 15000 requires that all state and local agencies implement the California Environmental Quality Act (CEQA) Guidelines, which requires the analysis of exposure of persons to excessive groundborne vibration. However, no statute has been adopted by the state that quantifies the level at which excessive groundborne vibration occurs.

Caltrans issued the *Transportation- and Construction-Induced Vibration Guidance Manual* in 2004. The manual provides practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. However, this manual is also used as a reference point by many lead agencies and CEQA practitioners throughout California, as it provides numeric thresholds for vibration impacts. Thresholds are established for continuous (construction-related) and transient (transportation-related) sources of vibration, which found that the human response becomes distinctly perceptible at 0.25 inch per second PPV for transient sources and 0.04 inch per second PPV for continuous sources.

4.3 Local Regulations

The City of Santa Clarita General Plan and Municipal Code establishes the following applicable policies related to noise and vibration.

City of Santa Clarita General Plan

Goal 1

To Protect the health and welfare of the residents of the City of Santa Clarita and the planning area by the elimination, mitigation, and prevention of significant existing and future noise levels.

Policies

1.2 Include noise impact considerations in land use planning decisions.

1.3 Control noise sources adjacent to residential, recreational, and community facilities, and those land uses classified as noise sensitive land uses.

Goal 3

To prevent and mitigate significant noise levels in residential neighborhoods.

Policies

3.2 Ensure that special noise sources, such as construction activities, leaf blowers, motorized lawn mowers, garbage collection, truck deliveries, and any other activities, which produce significant discernible noise do not create undue disturbances in residential neighborhoods.

3.3 Require that those responsible for construction activities develop techniques to mitigate or minimize the noise impacts on residences, and adopt standards which regulate noise from noise construction activities which may occur near residential neighborhoods.

City of Santa Clarita Municipal Code

The City of Santa Clarita Municipal Code establishes the following applicable standards related to noise.

Chapter 11.44.040 Noise Limits

A. It shall be unlawful for any person within the City to produce or cause or allow to be produced noise which is received on property occupied by another person within the designated region, in excess of the following levels, except as expressly provided otherwise herein:

Region	**Time**	**Sound Level dB**
Residential zone	Day	65
Residential zone	Night	55
Commercial and manufacturing	Day	80
Commercial and manufacturing	Night	70

At the boundary line between a residential property and a commercial and manufacturing property, the noise level of the quieter zone shall be used.

Chapter 11.44.080 Special Noise Sources-Construction and Building.

No person shall engage in any construction work which requires a building permit from the City on sites within three hundred (300) feet of a residentially zoned property except between the hours of seven a.m. to seven p.m., Monday through Friday, and eight a.m. to six p.m. on Saturday. Further, no work shall be performed on the following public holidays: New Year's Day, Independence Day, Thanksgiving, Christmas, Memorial Day and Labor Day.

Emergency work as defined in Section 11.44.020(D) is permitted at all times.

The Department of Community Development may issue a permit for work to be done "after hours"; provided, that containment of construction noise is provided.

Chapter 17.15.050 Performance Standards: C and I Zones

C. Vibration. No use, except a temporary construction operation, shall be permitted which generates inherent and recurrent ground vibration perceptible without instruments at the boundary of the lot on which the use is located.

5.0 EXISTING NOISE CONDITIONS

To determine the existing noise levels, noise measurements have been taken in the vicinity of the project site. The field survey noted that noise within the project area is generally characterized by vehicle traffic on the nearby roads and from dogs barking at the canine facilities. The following describes the measurement procedures, measurement locations, noise measurement results, and the modeling of the existing noise environment.

5.1 Noise Measurement Equipment

The noise measurements were taken using a Larson-Davis Model 831 Type 1 precision sound level meter programmed in "slow" mode to record noise levels in "A" weighted form as well as the frequency spectrum of the noise broken down into 1/3 octaves. The sound level meter and microphone were mounted on a tripod five feet above the ground and were equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200. The accuracy of the calibrator is maintained through a program established through the manufacturer and is traceable to the National Bureau of Standards. The unit meets the requirements of ANSI Standard S1.4-1984 and IEC Standard 942: 1988 for Class 1 equipment. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

Noise Measurement Location

The noise monitoring locations were selected in order to obtain noise levels in the vicinity of the project site. Descriptions of the noise monitoring sites are provided below in Table C and are shown in Figure 2. Appendix A includes a photo index of the study area and noise level measurement locations.

Noise Measurement Timing and Climate

The noise measurements were recorded between 12:33 p.m. and 1:20 p.m. on Tuesday, March 26, 2024. During the noise measurements, the sky was clear, the temperature was 64 degrees Fahrenheit, the humidity was 41 percent, barometric pressure was 28.45 inches of mercury, and the wind was blowing at an average rate of five miles per hour.

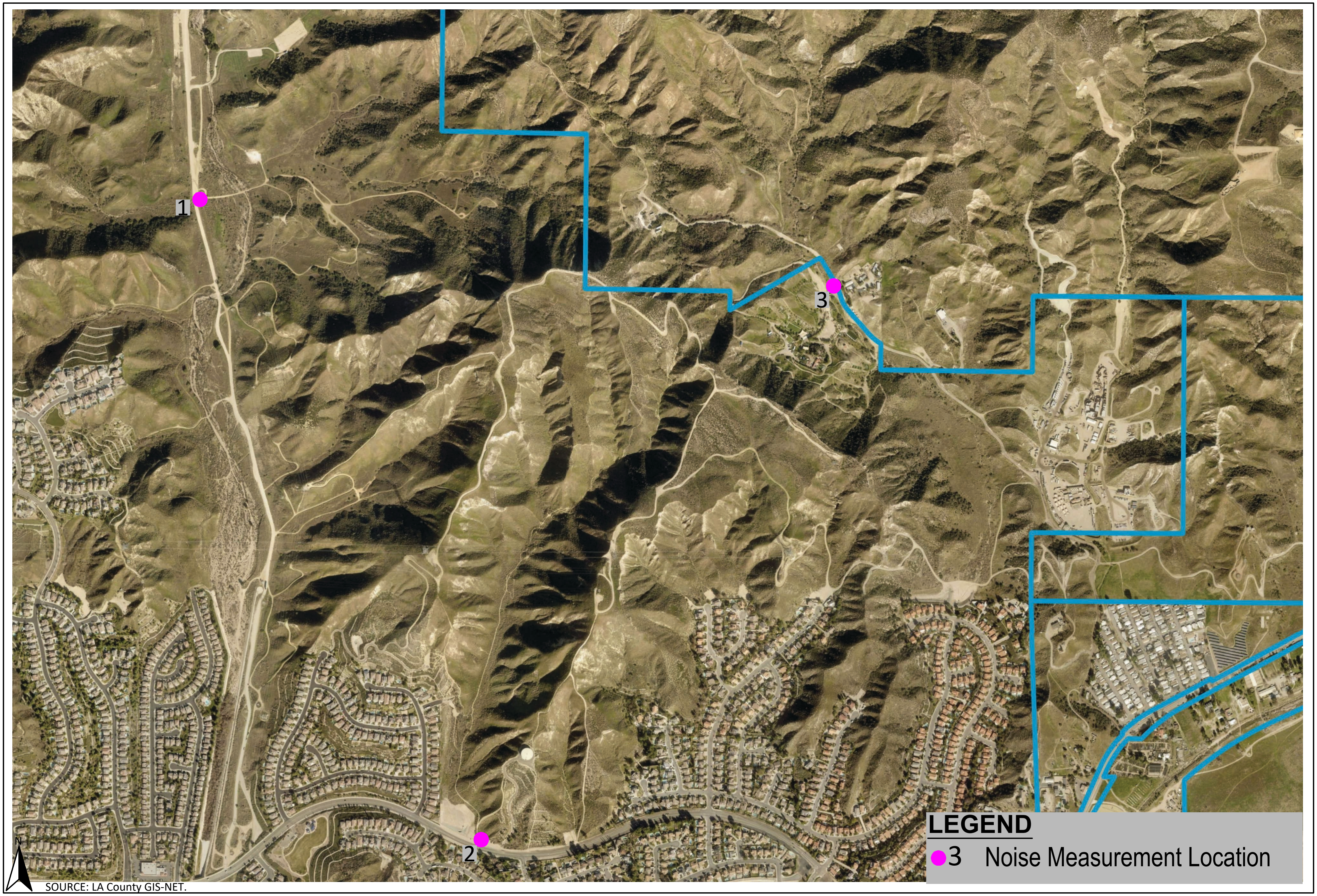
5.2 Noise Measurement Results

The results of the noise level measurements are presented in Table C and the noise monitoring data printouts are included in Appendix B.

Table C – Existing (Ambient) Noise Level Measurements

Site No.	Description	Primary Noise Sources	Start Time of Measurement	Measured Noise Level dBA Leq	Measured Noise Level dBA Lmax
1	Located west of the bike park, approximately 50 feet east of Pettinger Canyon Road centerline and at turnoff to proposed road to bike park.	Vehicles on Pettinger Canyon Road	12:33 p.m.	52.6	68.3
2	Located south of the bike park at Haskell Canyon Trailhead, approximately 60 feet north of Copper Hill Drive centerline.	Vehicles on Copper Hill Drive	12:51 p.m.	67.3	78.1
3	Located east of the bike park between the canine facilities, approximately 20 feet west of Blue Cloud Road centerline.	Dogs barking at canine facilities	1:10 p.m.	47.5	55.3

Source: Noise measurements taken on March 26, 2024.



VISTA ENVIRONMENTAL

Figure 2
Field Noise Monitoring Locations

6.0 MODELING PARAMETERS AND ASSUMPTIONS

6.1 Construction Noise

The noise impacts from construction of the proposed project have been analyzed through use of the FHWA's Roadway Construction Noise Model (RCNM). The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table D below provides a list of the construction equipment anticipated to be used for each phase of construction as detailed in *Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis Santa Clarita Blue Cloud Bike Park Project* (Air Quality Analysis), prepared by Vista Environmental, April 1, 2024.

Table D – Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Number of Equipment	Acoustical Use Factor[1] (percent)	Spec 721.560 Lmax at 50 feet[2] (dBA, slow[3])	Actual Measured Lmax at 50 feet[4] (dBA, slow[3])
Site Preparation				
Rubber Tired Dozers	3	40	85	82
Tractors	2	40	84	N/A
Front End Loader	1	40	80	79
Backhoe	1	40	80	78
Grading				
Excavators	2	40	85	81
Grader	1	40	85	83
Rubber Tired Dozer	1	40	85	82
Scrapers	2	40	85	84
Tractor	1	40	84	N/A
Front End Loader	1	40	80	79
Building Construction				
Crane	1	16	85	81
Forklift (Gradall)	3	40	85	83
Generator	1	50	82	81
Tractor	1	40	84	N/A
Front End Loader	1	40	80	79
Backhoe	1	40	80	78
Welder	1	40	73	74
Paving				
Paver	2	50	85	77
Paving Equipment	2	50	85	77
Roller	2	20	85	80
Architectural Coating				
Air Compressor	1	40	80	78

Notes:
[1] Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.
[2] Spec 721.560 is the equipment noise level utilized by the RCNM program.
[3] The "slow" response averages sound levels over 1-second increments. A "fast" response averages sound levels over 0.125-second increments.
[4] Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.
Source: Federal Highway Administration, 2006 and CalEEMod default equipment mix.

Table D also shows the associated measured noise emissions for each piece of equipment from the RCNM model and measured percentage of typical equipment use per day. Construction noise impacts to the nearby sensitive receptors have been calculated according to the equipment noise levels and usage factors listed in Table D and through use of the RCNM. For each phase of construction, each piece of equipment was placed at the shortest distance from the disturbed area to the sensitive receptor.

6.2 Vibration

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table E gives approximate vibration levels for particular construction activities. The data in Table E provides a reasonable estimate for a wide range of soil conditions.

Table E – Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity (inches/second)	Approximate Vibration Level (L_v)at 25 feet
Pile driver (impact)	Upper range	1.518	112
	typical	0.644	104
Pile driver (sonic)	Upper range	0.734	105
	typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drill		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration, 2018.

The construction-related vibration impacts have been calculated through the vibration levels shown above in Table E and through typical vibration propagation rates. The equipment assumptions were based on the equipment lists provided above in Table D.

7.0 IMPACT ANALYSIS

7.1 CEQA Thresholds of Significance

Consistent with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generation of excessive groundborne vibration or groundborne noise levels; or
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

7.2 Generation of Noise Levels in Excess of Standards

The proposed project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. The following section calculates the potential noise emissions associated with the temporary construction activities and long-term operations of the proposed project and compares the noise levels to the City standards.

Construction-Related Noise

Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

Section 11.44.080 of the Municipal Code exempts construction noise from the City noise standards that occurs between 7:00 a.m. and 7:00 p.m. Monday through Friday and between 8:00 a.m. and 6:00 p.m. on Saturdays, with no work allowed on Sundays and holidays. However, the City construction noise standards do not provide any limits to the noise levels that may be created from construction activities and even with adherence to the City standards, the resultant construction noise levels may result in a significant substantial temporary noise increase to the nearby homes and canine facilities.

In order to determine if the proposed construction activities would create a significant substantial temporary noise increase, the FTA construction noise criteria thresholds detailed above in Section 4.1 have been utilized, which shows that a significant construction noise impact would occur if construction noise exceeds 80 dBA at the nearest homes and 85 dBA at the canine facilities to the east. The calculated construction noise results are shown below in Table F and the RCNM printouts are provided in Appendix C.

Table F – Construction Noise Levels at the Nearby Receptors

Construction Phase	Construction Noise Level (dBA Leq) at:		
	Canine Facilities to East	Homes to West	Homes to South
Site Preparation	62	56	55
Grading	64	57	56
Building Construction	63	56	55
Paving	58	51	50
Architectural Coating	50	43	42
FTA Construction Noise Threshold[1]	**85**	**80**	**80**
Exceed Threshold?	No	No	No

Notes:
[1] FTA Construction Noise Threshold obtained from Table B above.
Source: RCNM, Federal Highway Administration, 2006

Table F shows that the construction-related noise levels for all phases of construction activities would be within the FTA construction noise standards. Therefore, through adherence to allowable construction times provided in 11.44.080 of the Municipal Code, the construction activities for the proposed project would not create a substantial temporary increase in ambient noise levels that are in excess of applicable noise standards. Impacts would be less than significant.

Operational-Related Noise

The proposed project would consist of the development and operation of a bike park. Potential noise impacts associated with the operations of the proposed project would be from project-generated vehicular traffic on the nearby roadways and from onsite noise sources to the nearby sensitive receptors. The noise impacts created from project-generated vehicular traffic on the nearby roadways and from onsite noise sources to the nearby sensitive receptors have been analyzed separately below.

Roadway Vehicular Noise Impact to Nearby Sensitive Receptors

Vehicle noise is a combination of the noise produced by the engine, exhaust and tires. The level of traffic noise depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic. The proposed project does not propose any uses that would require a substantial number of truck trips and the proposed project would not alter the speed limit on any existing roadway so the proposed project's potential offsite noise impacts have been focused on the noise impacts associated with the change of volume of traffic that would occur with development of the proposed project.

Neither the General Plan nor the Municipal Code defines what constitutes a "substantial permanent increase to ambient noise levels". As such, this impact analysis has utilized guidance from the FTA for a moderate impact that has been detailed above in Table A, which shows that the project contribution to the noise environment can range between 0 and 7 dB, which is dependent on the existing roadway noise levels.

According to the project applicant, the proposed project would generate up to 100 daily vehicle trips on weekends and during special event days. According to the *One Valley One Vision Draft Program EIR City of Santa Clarita,* September 2010, Copper Hill east of McBean is the closest roadway segment with traffic data to the project site and it currently has 35,000 daily trips. The proposed project would contribute up to 0.3 percent of the daily trips on Cooper Hill Drive. In order for project-generated vehicular traffic to increase the noise level on any of the nearby roadways by 3 dB, the average daily traffic (ADT) would have to double, or by 1.5 dB, the ADT would have to increase by 50 percent. As such, the proposed project's roadway noise impacts would be negligible and would not result in a quantitative increase in roadway noise levels. Therefore, operational roadway noise impacts to the nearby sensitive receptors would be less than significant.

Onsite Noise Impacts

The project would create operational noise from the usage of the bike trails and parking lots, music associated with events at the bike park, and the operation of off-road equipment that would include monthly use of a mini-excavator or a trail dozer for trail maintenance and a small generator may be used for music events or food trucks. Section 11.44.040 of the Municipal Code limits the project's operational noise at the nearby homes to 65 dBA during the daytime and 55 dBA during the nighttime and at the canine facilities to the east to 80 dBA during the daytime and 70 dBA during the nighttime.

In order to determine the noise impacts from the operational use of the bike trails and parking lots and from a music event at the bike park, reference noise measurements for similar operations were taken of each source and are shown in Table G and the reference noise measurement printouts are provided in Appendix D. In order to determine the noise impacts from the off-road equipment, the RCNM Model was utilized where a backhoe and small generator were modeled. All of the reference noise levels were calculated at the distances to the nearby receptors based on standard geometric spreading of noise of a drop-off rate of 6 dB reduction for every doubling of distance between source and receptor. It should be noted that the calculated noise levels represent a worst-case as the noise calculations do not take account the hilly terrain of the bike park or the sound reduction provided by the vegetation.

Table G – Operational Noise Levels at the Nearby Sensitive Receptors

Noise Source	Reference Noise Measurements[1]		Calculated Noise Levels (dBA Leq) at:		
	Distance Receptor to Source (feet)	Reference Noise Level (dBA Leq)	Canine Facilities to East	Homes to West	Homes to South
Bike Trails	20	40.6	9	2	1
Parking Lots	10	51.7	8	6	1
Music Event	70	74.0	39	44	37
Off-Road Equipment	50	75.1	50	43	42
Generator	50	73.6	32	37	30
Noise Level from All Sources Combined			**50**	**46**	**43**
City Noise Standards[2] (day/night)			**80/70**	**65/55**	**65/55**
Exceed City Noise Standards (day/night)?			**No/No**	**No/No**	**No/No**

Notes:
[1] The reference noise measurements printouts are provided in Appendix D.
[2] From Section 11.44.040 of the Municipal Code.
Source: Noise calculation methodology from Caltrans, 2013 (see Appendix D).

Table G shows that the proposed project's worst-case (i.e., during a music event and trail maintenance) operational noise from the simultaneous operation of all noise sources on the project site would create a noise level as high as 50 dBA Leq at the canine facilities to the east, 46 dBA Leq at the homes to the west, and 43 dBA Leq at the home to the south, which would be within the applicable City's daytime and nighttime noise standards as detailed in Section 11.44.040 of the Municipal Code. Therefore, operation of the proposed project would not result in a substantial permanent increase in ambient noise levels from onsite noise sources. Impacts would be less than significant.

Level of Significance

Less than significant impact.

7.3 Generation of Excessive Groundborne Vibration

The proposed project would not expose persons to or generation of excessive groundborne vibration or groundborne noise levels. The following section analyzes the potential vibration impacts associated with the construction and operations of the proposed project.

Construction-Related Vibration Impacts

Vibration impacts from construction activities associated with the proposed project would typically be created from the operation of heavy off-road equipment. The nearest sensitive receptors to the project site are homes located within the canine training and boarding facilities to the east that are as near as 800 feet from the proposed areas to be disturbed as part of the project.

Section 17.15.050 of the Municipal Code limits vibration to what is perceptible at the boundary of the lot where it is created. However, Section 17.15.050 exempts construction activities from this vibration standard. Since the City construction vibration standards do not provide any limits to the vibration levels that may be created from construction activities, the Caltrans vibration guidance that is detailed above in Section 4.2 has been utilized, which defines the threshold of perception from transient sources at 0.25 inch per second PPV.

As detailed above, the primary source of vibration during construction would be from the operation of a dozer. From Table E above a large bulldozer would create a vibration level of 0.089 inch per second PPV at 25 feet. Based on typical propagation rates, the vibration level at the nearest offsite structures (800 feet away) would be 0.002 inch per second PPV. The vibration level at the nearest offsite structure would be well below the 0.25 inch per second PPV threshold detailed above. Impacts would be less than significant.

Operations-Related Vibration Impacts

The proposed project would consist of the operation of a bike park. The on-going operation of the proposed project would not include the operation of any known vibration sources. Therefore, a less than significant vibration impact is anticipated from the operation of the proposed project.

Level of Significance

Less than significant impact.

7.4 Aircraft Noise

The proposed project would not expose people residing or working in the project area to excessive noise levels from aircraft. The nearest airport is Agua Dulce Airpark that is located approximately ten miles east of the project site. The project site is located outside of the 60 dBA CNEL noise contours of Agua Dulce Airpark. No impacts would occur from aircraft noise.

Level of Significance

No impact.

8.0 REFERENCES

California Department of Transportation, *2016 Annual Average Daily Truck Traffic on the California State Highway System*, 2018.

California Department of Transportation (Caltrans), *Technical Noise Supplement to the Traffic Noise Analytics Protocol*, September 2013.

California Department of Transportation, *Transportation- and Construction-Induced Vibration Guidance Manual*, September 2013.

City of Santa Clarita, *Draft Program EIR for the City of Santa Clarita's Proposed One Valley One Vision General Plan,* September 2010.

City of Santa Clarita, *City of Santa Clarita General Plan,* June 2011.

City of Santa Clarita, *Santa Clarita Municipal Code*, July 14, 2020.

Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* September 2018.

U.S. Department of Transportation, *FHWA Roadway Construction Noise Model User's Guide,* January, 2006.

Vista Environmental, *Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis Santa Clarita Blue Cloud Bike Park Project,* April 1, 2024.

APPENDIX A

Field Noise Measurements Photo Index


Noise Measurement Site 1 - looking north


Noise Measurement Site 1 - looking northeast


Noise Measurement Site 1 - looking east


Noise Measurement Site 1 - looking southeast


Noise Measurement Site 1 - looking south


Noise Measurement Site 1 - looking southwest


Noise Measurement Site 1 - looking west


Noise Measurement Site 1 - looking northwest

Noise Measurement Site 2 - looking north

Noise Measurement Site 2 - looking northeast


Noise Measurement Site 2 - looking east


Noise Measurement Site 2 - looking southeast


Noise Measurement Site 2 - looking south


Noise Measurement Site 2 - looking southwest

Noise Measurement Site 2 - looking west

Noise Measurement Site 2 - looking northwest

Noise Measurement Site 3 - looking north

Noise Measurement Site 3 - looking northeast

Noise Measurement Site 3 - looking east

Noise Measurement Site 3 - looking southeast

Noise Measurement Site 3 - looking south

Noise Measurement Site 3 - looking southwest

Noise Measurement Site 3 - looking west

Noise Measurement Site 3 - looking northwest

APPENDIX B

Field Noise Measurements Printouts

Measurement Report

Report Summary

Meter's File Name	831_Data.001	Computer's File Name	SLM_0002509_831_Data_001.32.ldbin
Meter	831		
Firmware	2.403		
User	GT	Location	
Description	Santa Clarita Blue Cloud Bike Park		
Note	Located approx 50 ft east of Pettinger Cyn Rd CL at proposed entrance road to Bike Park		

Start Time	2024-03-26 12:33:45	Duration	0:10:00.7		
End Time	2024-03-26 12:43:46	Run Time	0:10:00.7	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	52.6 dB		
LAE	80.4 dB	SEA	--- dB
EA	12.1 µPa²h		
LZ_{peak}	103.7 dB	2024-03-26 12:33:45	
LAS_{max}	68.3 dB	2024-03-26 12:41:21	
LAS_{min}	27.6 dB	2024-03-26 12:42:35	
LA_{eq}	52.6 dB		
LC_{eq}	64.1 dB	LC_{eq} - LA_{eq}	11.5 dB
LAI_{eq}	56.4 dB	LAI_{eq} - LA_{eq}	3.8 dB

Exceedances

Exceedances	Count	Duration
LAS > 65.0 dB	3	0:00:10.8
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
52.6 dB	52.6 dB	0.0 dB	
LDEN	**LDay**	**LEve**	**LNight**
52.6 dB	52.6 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	52.6 dB		64.1 dB		78.8 dB	
$Ls_{(max)}$	68.3 dB	2024-03-26 12:41:21	78.6 dB	2024-03-26 12:40:13	94.0 dB	2024-03-26 12:40:14
$LF_{(max)}$	70.7 dB	2024-03-26 12:39:57	83.1 dB	2024-03-26 12:40:13	98.6 dB	2024-03-26 12:33:45
$LI_{(max)}$	75.1 dB	2024-03-26 12:39:57	86.1 dB	2024-03-26 12:39:56	101.6 dB	2024-03-26 12:33:45
$LS_{(min)}$	27.6 dB	2024-03-26 12:42:35	41.8 dB	2024-03-26 12:43:01	49.0 dB	2024-03-26 12:42:55
$LF_{(min)}$	25.3 dB	2024-03-26 12:43:07	39.5 dB	2024-03-26 12:42:43	44.0 dB	2024-03-26 12:42:44
$LI_{(min)}$	26.9 dB	2024-03-26 12:42:34	42.4 dB	2024-03-26 12:42:34	51.3 dB	2024-03-26 12:42:55
$L_{Peak(max)}$	90.0 dB	2024-03-26 12:39:57	93.4 dB	2024-03-26 12:39:56	103.7 dB	2024-03-26 12:33:45

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	61.2 dB
LAS 10.0	54.3 dB
LAS 33.3	39.9 dB
LAS 50.0	36.2 dB
LAS 66.6	33.2 dB
LAS 90.0	30.3 dB

Measurement Report

Report Summary

Meter's File Name	831_Data.002	Computer's File Name	SLM_0002509_831_Data_002.26.ldbin
Meter	831		
Firmware	2.403		
User	GT	Location	
Description	Santa Clarita Blue Cloud Bike Park		
Note	At Haskell Cyn Trailhead, approx 60 ft north of Copper Hill Dr CL		

Start Time	2024-03-26 12:51:00	Duration	0:10:00.5		
End Time	2024-03-26 13:01:01	Run Time	0:10:00.5	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	67.3 dB		
LAE	95.1 dB	SEA	--- dB
EA	356.7 µPa²h		
LZ_{peak}	102.5 dB	2024-03-26 12:51:00	
LAS_{max}	78.1 dB	2024-03-26 12:53:19	
LAS_{min}	40.6 dB	2024-03-26 12:54:05	
LA_{eq}	67.3 dB		
LC_{eq}	71.9 dB	LC_{eq} - LA_{eq}	4.6 dB
LAI_{eq}	69.2 dB	LAI_{eq} - LA_{eq}	1.9 dB

Exceedances

Exceedances	Count	Duration
LAS > 65.0 dB	29	0:05:21.2
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
67.3 dB	67.3 dB	0.0 dB	
LDEN	**LDay**	**LEve**	**LNight**
67.3 dB	67.3 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	67.3 dB		71.9 dB		74.4 dB	
$LS_{(max)}$	78.1 dB	2024-03-26 12:53:19	88.2 dB	2024-03-26 12:53:19	95.1 dB	2024-03-26 12:51:00
$LF_{(max)}$	80.5 dB	2024-03-26 12:53:19	90.9 dB	2024-03-26 12:53:19	97.9 dB	2024-03-26 12:51:00
$LI_{(max)}$	81.3 dB	2024-03-26 12:53:19	91.9 dB	2024-03-26 12:53:19	100.4 dB	2024-03-26 12:51:00
$LS_{(min)}$	40.6 dB	2024-03-26 12:54:05	50.6 dB	2024-03-26 12:54:05	56.0 dB	2024-03-26 12:54:07
$LF_{(min)}$	38.6 dB	2024-03-26 12:54:03	49.2 dB	2024-03-26 12:54:03	52.7 dB	2024-03-26 12:54:05
$LI_{(min)}$	40.6 dB	2024-03-26 12:54:05	51.3 dB	2024-03-26 12:54:04	56.5 dB	2024-03-26 12:54:09
$L_{Peak(max)}$	92.5 dB	2024-03-26 13:00:20	98.9 dB	2024-03-26 12:53:19	102.5 dB	2024-03-26 12:51:00

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	72.3 dB
LAS 10.0	71.2 dB
LAS 33.3	68.1 dB
LAS 50.0	64.7 dB
LAS 66.6	59.0 dB
LAS 90.0	50.4 dB

Measurement Report

Report Summary

Meter's File Name	831_Data.003	Computer's File Name	SLM_0002509_831_D
Meter	831		
Firmware	2.403		
User	GT	Location	
Description	Santa Clarita Blue Cloud Bike Park		
Note	Approx 20 ft west of Blue Cloud Rd CL, between Canine Country Club and Cesar Millan's Dog Psychology Center		

Start Time	2024-03-26 13:10:51	Duration	0:10:00.7		
End Time	2024-03-26 13:20:51	Run Time	0:10:00.7	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	47.5 dB		
LAE	75.3 dB	SEA	--- dB
EA	3.7 µPa²h		
LZ_{peak}	104.3 dB	2024-03-26 13:10:51	
LAS_{max}	55.3 dB	2024-03-26 13:11:19	
LAS_{min}	32.4 dB	2024-03-26 13:17:06	
LA_{eq}	47.5 dB		
LC_{eq}	55.4 dB	LC_{eq} - LA_{eq}	7.9 dB
LAI_{eq}	54.3 dB	LAI_{eq} - LA_{eq}	6.9 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	0	0:00:00.0
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
47.5 dB	47.5 dB	0.0 dB	
LDEN	**LDay**	**LEve**	**LNight**
47.5 dB	47.5 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	47.5 dB		55.4 dB		73.5 dB	
$Ls_{(max)}$	55.3 dB	2024-03-26 13:11:19	75.8 dB	2024-03-26 13:10:51	95.9 dB	2024-03-26 13:10:51
$LF_{(max)}$	62.2 dB	2024-03-26 13:20:51	77.5 dB	2024-03-26 13:17:23	99.9 dB	2024-03-26 13:10:51
$LI_{(max)}$	67.7 dB	2024-03-26 13:20:51	81.0 dB	2024-03-26 13:17:23	102.4 dB	2024-03-26 13:10:51
$LS_{(min)}$	32.4 dB	2024-03-26 13:17:06	42.3 dB	2024-03-26 13:19:28	50.1 dB	2024-03-26 13:18:28
$LF_{(min)}$	27.5 dB	2024-03-26 13:15:46	38.4 dB	2024-03-26 13:18:28	44.4 dB	2024-03-26 13:18:28
$LI_{(min)}$	35.4 dB	2024-03-26 13:17:08	43.2 dB	2024-03-26 13:16:38	51.9 dB	2024-03-26 13:19:36
$L_{Peak(max)}$	79.4 dB	2024-03-26 13:17:23	87.4 dB	2024-03-26 13:17:23	104.3 dB	2024-03-26 13:10:51

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	51.5 dB
LAS 10.0	50.5 dB
LAS 33.3	47.9 dB
LAS 50.0	46.5 dB
LAS 66.6	44.9 dB
LAS 90.0	40.7 dB

APPENDIX C

RCNM Model Construction Noise Calculation Printouts

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Site Preparation

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Canine Facilities to East	Commercial	47.5	47.5	47.5

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	800	0
Dozer	No	40		81.7	800	0
Dozer	No	40		81.7	800	0
Tractor	No	40	84		800	0
Tractor	No	40	84		800	0
Front End Loader	No	40		79.1	800	0
Backhoe	No	40		77.6	800	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Dozer		57.6	53.6	N/A	N/A	N/A	N/A
Dozer		57.6	53.6	N/A	N/A	N/A	N/A
Dozer		57.6	53.6	N/A	N/A	N/A	N/A
Tractor		59.9	55.9	N/A	N/A	N/A	N/A
Tractor		59.9	55.9	N/A	N/A	N/A	N/A
Front End Loader		55.0	51.0	N/A	N/A	N/A	N/A
Backhoe		53.5	49.5	N/A	N/A	N/A	N/A
	Total	**60**	**62**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Site Preparation

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes to West	Residential	52.6	52.6	52.6

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	1700	0
Dozer	No	40		81.7	1700	0
Dozer	No	40		81.7	1700	0
Tractor	No	40	84		1700	0
Tractor	No	40	84		1700	0
Front End Loader	No	40		79.1	1700	0
Backhoe	No	40		77.6	1700	0

Results

Equipment		Calculated (dBA) ***Lmax**	**Leq**	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq
Dozer		51.0	47.1	N/A	N/A	N/A	N/A
Dozer		51.0	47.1	N/A	N/A	N/A	N/A
Dozer		51.0	47.1	N/A	N/A	N/A	N/A
Tractor		53.4	49.4	N/A	N/A	N/A	N/A
Tractor		53.4	49.4	N/A	N/A	N/A	N/A
Front End Loader		48.5	44.5	N/A	N/A	N/A	N/A
Backhoe		46.9	43.0	N/A	N/A	N/A	N/A
	Total	**53**	**56**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date:	4/1/2024
Case Description:	Blue Cloud Bike Park - Site Preparation

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to South	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	1900.0	0.0
Dozer	No	40		81.7	1900.0	0.0
Dozer	No	40		81.7	1900.0	0.0
Tractor	No	40	84		1900.0	0.0
Tractor	No	40	84		1900.0	0.0
Front End Loader	No	40		79.1	1900.0	0.0
Backhoe	No	40		77.6	1900.0	0.0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Dozer		50.1	46.1	N/A	N/A	N/A	N/A
Dozer		50.1	46.1	N/A	N/A	N/A	N/A
Dozer		50.1	46.1	N/A	N/A	N/A	N/A
Tractor		52.4	48.4	N/A	N/A	N/A	N/A
Tractor		52.4	48.4	N/A	N/A	N/A	N/A
Front End Loader		47.5	43.5	N/A	N/A	N/A	N/A
Backhoe		46.0	42.0	N/A	N/A	N/A	N/A
	Total	**52**	**55**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Canine Facilities to East	Commercial	47.5	47.5	47.5

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	800	0
Excavator	No	40		80.7	800	0
Grader	No	40	85		800	0
Dozer	No	40		81.7	800	0
Scraper	No	40		83.6	800	0
Scraper	No	40		83.6	800	0
Tractor	No	40	84		800	0
Front End Loader	No	40		79.1	800	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Excavator		56.6	52.6	N/A	N/A	N/A	N/A
Excavator		56.6	52.6	N/A	N/A	N/A	N/A
Grader		60.9	56.9	N/A	N/A	N/A	N/A
Dozer		57.6	53.6	N/A	N/A	N/A	N/A
Scraper		59.5	55.5	N/A	N/A	N/A	N/A
Scraper		59.5	55.5	N/A	N/A	N/A	N/A
Tractor		59.9	55.9	N/A	N/A	N/A	N/A
Front End Loader		55.0	51.0	N/A	N/A	N/A	N/A
	Total	**61**	**64**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Grading

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to West	Residential	52.6	52.6	52.6

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	1700	0
Excavator	No	40		80.7	1700	0
Grader	No	40	85		1700	0
Dozer	No	40		81.7	1700	0
Scraper	No	40		83.6	1700	0
Scraper	No	40		83.6	1700	0
Tractor	No	40	84		1700	0
Front End Loader	No	40		79.1	1700	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Excavator		50.1	46.1	N/A	N/A	N/A	N/A
Excavator		50.1	46.1	N/A	N/A	N/A	N/A
Grader		54.4	50.4	N/A	N/A	N/A	N/A
Dozer		51.0	47.1	N/A	N/A	N/A	N/A
Scraper		53.0	49.0	N/A	N/A	N/A	N/A
Scraper		53.0	49.0	N/A	N/A	N/A	N/A
Tractor		53.4	49.4	N/A	N/A	N/A	N/A
Front End Loader		48.5	44.5	N/A	N/A	N/A	N/A
	Total	**54**	**57**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024

Case Description: Blue Cloud Bike Park - Grading

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to South	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	1900	0
Excavator	No	40		80.7	1900	0
Grader	No	40	85		1900	0
Dozer	No	40		81.7	1900	0
Scraper	No	40		83.6	1900	0
Scraper	No	40		83.6	1900	0
Tractor	No	40	84		1900	0
Front End Loader	No	40		79.1	1900	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Excavator		49.1	45.1	N/A	N/A	N/A	N/A
Excavator		49.1	45.1	N/A	N/A	N/A	N/A
Grader		53.4	49.4	N/A	N/A	N/A	N/A
Dozer		50.1	46.1	N/A	N/A	N/A	N/A
Scraper		52.0	48.0	N/A	N/A	N/A	N/A
Scraper		52.0	48.0	N/A	N/A	N/A	N/A
Tractor		52.4	48.4	N/A	N/A	N/A	N/A
Front End Loader		47.5	43.5	N/A	N/A	N/A	N/A
	Total	**53**	**56**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Building Construction

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Canine Facilities to East	Commercial	47.5	47.5	47.5

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	800	0
Gradall	No	40		83.4	800	0
Gradall	No	40		83.4	800	0
Gradall	No	40		83.4	800	0
Generator	No	50		80.6	800	0
Tractor	No	40	84		800	0
Front End Loader	No	40		79.1	800	0
Backhoe	No	40		77.6	800	0
Welder / Torch	No	40		74	800	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq
Crane		56.5	48.5	N/A	N/A	N/A	N/A
Gradall		59.3	55.3	N/A	N/A	N/A	N/A
Gradall		59.3	55.3	N/A	N/A	N/A	N/A
Gradall		59.3	55.3	N/A	N/A	N/A	N/A
Generator		56.5	53.5	N/A	N/A	N/A	N/A
Tractor		59.9	55.9	N/A	N/A	N/A	N/A
Front End Loader		55.0	51.0	N/A	N/A	N/A	N/A
Backhoe		53.5	49.5	N/A	N/A	N/A	N/A
Welder / Torch		49.9	45.9	N/A	N/A	N/A	N/A
	Total	**60**	**63**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Building Construction

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes to West	Residential	52.6	52.6	52.6

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	1700	0
Gradall	No	40		83.4	1700	0
Gradall	No	40		83.4	1700	0
Gradall	No	40		83.4	1700	0
Generator	No	50		80.6	1700	0
Tractor	No	40	84		1700	0
Front End Loader	No	40		79.1	1700	0
Backhoe	No	40		77.6	1700	0
Welder / Torch	No	40		74	1700	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Crane		49.9	42.0	N/A	N/A	N/A	N/A
Gradall		52.8	48.8	N/A	N/A	N/A	N/A
Gradall		52.8	48.8	N/A	N/A	N/A	N/A
Gradall		52.8	48.8	N/A	N/A	N/A	N/A
Generator		50.0	47.0	N/A	N/A	N/A	N/A
Tractor		53.4	49.4	N/A	N/A	N/A	N/A
Front End Loader		48.5	44.5	N/A	N/A	N/A	N/A
Backhoe		46.9	43.0	N/A	N/A	N/A	N/A
Welder / Torch		43.4	39.4	N/A	N/A	N/A	N/A
	Total	**53**	**56**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Building Construction

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes to South	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	1900	0
Gradall	No	40		83.4	1900	0
Gradall	No	40		83.4	1900	0
Gradall	No	40		83.4	1900	0
Generator	No	50		80.6	1900	0
Tractor	No	40	84		1900	0
Front End Loader	No	40		79.1	1900	0
Backhoe	No	40		77.6	1900	0
Welder / Torch	No	40		74	1900	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Crane		49.0	41.0	N/A	N/A	N/A	N/A
Gradall		51.8	47.8	N/A	N/A	N/A	N/A
Gradall		51.8	47.8	N/A	N/A	N/A	N/A
Gradall		51.8	47.8	N/A	N/A	N/A	N/A
Generator		49.0	46.0	N/A	N/A	N/A	N/A
Tractor		52.4	48.4	N/A	N/A	N/A	N/A
Front End Loader		47.5	43.5	N/A	N/A	N/A	N/A
Backhoe		46.0	42.0	N/A	N/A	N/A	N/A
Welder / Torch		42.4	38.4	N/A	N/A	N/A	N/A
	Total	**52**	**55**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Paving

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Canine Facilities to East	Commercial	47.5	47.5	47.5

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	800	0
Paver	No	50		77.2	800	0
Paver	No	50		77.2	800	0
Paver	No	50		77.2	800	0
Roller	No	20		80	800	0
Roller	No	20		80	800	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Paver		53.1	50.1	N/A	N/A	N/A	N/A
Paver		53.1	50.1	N/A	N/A	N/A	N/A
Paver		53.1	50.1	N/A	N/A	N/A	N/A
Paver		53.1	50.1	N/A	N/A	N/A	N/A
Roller		55.9	48.9	N/A	N/A	N/A	N/A
Roller		55.9	48.9	N/A	N/A	N/A	N/A
	Total	**56**	**58**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Paving

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to West	Residential	52.6	52.6	52.6

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	1700	0
Paver	No	50		77.2	1700	0
Paver	No	50		77.2	1700	0
Paver	No	50		77.2	1700	0
Roller	No	20		80	1700	0
Roller	No	20		80	1700	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Paver		46.6	43.6	N/A	N/A	N/A	N/A
Paver		46.6	43.6	N/A	N/A	N/A	N/A
Paver		46.6	43.6	N/A	N/A	N/A	N/A
Paver		46.6	43.6	N/A	N/A	N/A	N/A
Roller		49.4	42.4	N/A	N/A	N/A	N/A
Roller		49.4	42.4	N/A	N/A	N/A	N/A
	Total	**49**	**51**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Paving

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to South	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	1900	0
Paver	No	50		77.2	1900	0
Paver	No	50		77.2	1900	0
Paver	No	50		77.2	1900	0
Roller	No	20		80	1900	0
Roller	No	20		80	1900	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Paver		45.6	42.6	N/A	N/A	N/A	N/A
Paver		45.6	42.6	N/A	N/A	N/A	N/A
Paver		45.6	42.6	N/A	N/A	N/A	N/A
Paver		45.6	42.6	N/A	N/A	N/A	N/A
Roller		48.4	41.4	N/A	N/A	N/A	N/A
Roller		48.4	41.4	N/A	N/A	N/A	N/A
	Total	**48**	**50**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Painting

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Canine Facilities to East	Commercial	47.5	47.5	47.5

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	800	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Compressor (air)		53.6	49.6	N/A	N/A	N/A	N/A
	Total	**54**	**50**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes to West	Residential	52.6	52.6	52.6

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	1700	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Compressor (air)		47.0	43.1	N/A	N/A	N/A	N/A
	Total	**47**	**43**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Painting

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to South	Residential	67.3	67.3	67.3

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40.0		77.7	1900	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Compressor (air)		46.1	42.1	N/A	N/A	N/A	N/A
	Total	**46**	**42**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX D

Onsite Noise Sources Reference Noise Measurements Printouts

General Information

Serial Number	02509
Model	831
Firmware Version	2.301
Filename	831_Data.001
User	GT
Job Description	Peters Canyon Regional Park
Location	190 feet north of Intersection of Peters Cyn and Silverado Terrac

Measurement Description	
Start Time	Tuesday, 2017 July 04 12:03:44
Stop Time	Tuesday, 2017 July 04 12:18:45
Duration	00:15:00.5
Run Time	00:15:00.5
Pause	00:00:00.0
Pre Calibration	Tuesday, 2017 July 04 12:01:08
Post Calibration	None
Calibration Deviation	---

Note

Approximately 20' from dirt trail CL and 35' from Class 1 Bike Trail
Noise from people talking, bicycles on dirt trail and vehicles on Peters Cyn Rd
83F, 29.61 in Hg, 52% Hu, 4 mph wind, clear sky

Overall Data

LAeq		40.6	dB
LASmax	2017 Jul 04 12:17:37	60.2	dB
LApeak (max)	2017 Jul 04 12:17:37	95.9	dB
LASmin	2017 Jul 04 12:09:17	31.6	dB
LCeq		53.8	dB
LAeq		40.6	dB
LCeq - LAeq		13.1	dB
LAIeq		49.2	dB
LAeq		40.6	dB
LAIeq - LAeq		8.6	dB
Ldn		40.6	dB
LDay 07:00-23:00		40.6	dB
LNight 23:00-07:00		---	dB
Lden		40.6	dB
LDay 07:00-19:00		40.6	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		70.2	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	45.7	dBA
LAS10.00	44.2	dBA
LAS33.30	39.5	dBA
LAS50.00	37.5	dBA
LAS66.60	35.5	dBA
LAS90.00	33.6	dBA

LAS > 65.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB

Under Range Limit	26.2	dB
Under Range Peak	75.8	dB
Noise Floor	17.0	dB
Overload	143.3	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	61.9	54.7	49.1	49.3	47.0	39.6	35.8	35.7	36.1	37.4	39.6	43.0
LZSmax	79.4	70.2	60.9	60.0	64.5	51.1	47.9	47.2	51.8	57.7	49.6	43.6
LZSmin	39.3	41.9	41.7	43.5	40.5	32.2	29.7	30.8	32.8	35.8	39.2	42.8

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	59.0	57.1	54.7	52.2	49.2	47.1	45.7	44.1	43.1	44.3	42.8	46.0
LZSmax	77.2	71.9	71.3	67.7	64.7	62.0	60.8	56.2	56.4	57.7	56.6	59.9
LZSmin	33.0	34.6	34.2	33.8	35.7	36.1	35.8	36.7	34.5	36.3	35.6	37.9

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	44.8	40.9	38.5	36.4	34.8	32.3	31.2	30.8	31.3	31.3	30.8	30.8
LZSmax	64.8	51.5	53.2	49.1	47.5	44.6	46.6	43.3	43.6	45.6	43.0	46.3
LZSmin	36.4	35.0	31.7	29.1	26.2	24.6	24.4	24.1	24.9	25.0	26.0	26.5

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	31.1	31.5	31.4	32.0	33.0	32.8	33.6	34.7	35.8	37.0	37.8	39.5
LZSmax	43.3	49.4	47.5	49.8	55.7	50.1	47.6	45.0	38.5	38.2	38.5	39.8
LZSmin	27.0	27.7	28.6	29.8	30.8	31.9	33.1	34.3	35.5	36.7	37.6	39.3

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	04 Jul 2017 12:01:07	-25.8
PRM831	22 Jun 2017 14:02:37	-26.3
PRM831	22 Jun 2017 12:06:39	-25.9
PRM831	06 Apr 2017 13:35:04	-25.9
PRM831	05 Apr 2017 10:29:19	-25.5
PRM831	28 Mar 2017 11:12:45	-25.8
PRM831	02 Nov 2016 10:44:45	-25.2
PRM831	22 Sep 2016 15:49:59	-26.5
PRM831	24 Aug 2016 19:03:10	-26.1
PRM831	26 Jul 2016 10:53:46	-26.0
PRM831	26 Jul 2016 09:33:01	-26.4

General Information

Serial Number	02509
Model	831
Firmware Version	2.301
Filename	831_Data.002
User	GT
Job Description	Peters Canyon Regional Park
Location	East side of Parking Lot for Peters Canyon Regional Park
Measurement Description	
Start Time	Tuesday, 2017 July 04 12:32:01
Stop Time	Tuesday, 2017 July 04 12:47:01
Duration	00:15:00.6
Run Time	00:15:00.6
Pause	00:00:00.0
Pre Calibration	Tuesday, 2017 July 04 12:01:07
Post Calibration	None
Calibration Deviation	---

Note

On island between north and south sections of parking lot and approx 50' SW of pay station
Noise from vehicles and people in parking lot, aircraft overflights and vehicles on Canyon View Ave
84F, 29.31 in Hg, 49% Hu, 7 mph wind, clear sky

Overall Data

LAeq		51.7	dB
LASmax	2017 Jul 04 12:40:31	69.7	dB
LApeak (max)	2017 Jul 04 12:32:16	85.1	dB
LASmin	2017 Jul 04 12:37:07	38.6	dB
LCeq		63.9	dB
LAeq		51.7	dB
LCeq - LAeq		12.1	dB
LAIeq		55.2	dB
LAeq		51.7	dB
LAIeq - LAeq		3.5	dB
Ldn		51.7	dB
LDay 07:00-23:00		51.7	dB
LNight 23:00-07:00		---	dB
Lden		51.7	dB
LDay 07:00-19:00		51.7	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		81.2	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	55.4	dBA
LAS10.00	51.5	dBA
LAS33.30	45.9	dBA
LAS50.00	44.8	dBA
LAS66.60	43.6	dBA
LAS90.00	41.5	dBA

LAS > 65.0 dB (Exceedence Counts / Duration)	2 / 14.5	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB
Under Range Limit	26.2	dB
Under Range Peak	75.8	dB
Noise Floor	17.0	dB
Overload	143.3	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	71.6	65.6	60.7	58.1	55.6	50.5	51.1	46.6	40.7	38.6	39.9	43.0
LZSmax	87.2	82.8	72.1	71.8	73.7	68.3	71.0	66.2	56.3	49.0	44.3	43.3
LZSmin	40.7	47.4	48.4	47.0	43.0	36.6	35.3	35.0	34.4	36.3	39.6	42.8

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	68.8	66.3	64.3	62.6	60.5	58.2	58.1	54.2	54.2	55.0	52.9	51.6
LZSmax	84.8	82.1	79.1	80.0	78.1	74.0	71.3	67.6	71.6	71.2	70.7	68.2
LZSmin	31.8	34.8	36.0	38.8	40.2	42.5	43.3	42.8	39.1	41.8	41.3	40.9

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	52.2	51.5	48.4	46.7	45.7	44.6	44.9	46.3	47.2	44.1	40.6	39.4
LZSmax	71.8	69.8	65.3	64.0	65.3	62.8	64.0	66.1	68.1	65.5	58.9	59.0
LZSmin	32.2	37.3	34.1	32.8	31.2	30.1	29.8	29.8	29.5	29.8	30.3	30.3

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	37.1	35.3	34.9	34.3	33.7	33.5	34.0	34.9	36.3	37.0	37.9	39.7
LZSmax	52.4	50.6	50.5	46.0	44.2	41.7	39.6	42.9	37.7	37.4	38.6	40.3
LZSmin	29.3	29.3	29.7	30.6	31.3	32.1	31.9	33.6	35.9	36.7	37.7	39.5

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	04 Jul 2017 12:01:07	-25.8
PRM831	22 Jun 2017 14:02:37	-26.3
PRM831	22 Jun 2017 12:06:39	-25.9
PRM831	06 Apr 2017 13:35:04	-25.9
PRM831	05 Apr 2017 10:29:19	-25.5
PRM831	28 Mar 2017 11:12:45	-25.8
PRM831	02 Nov 2016 10:44:45	-25.2
PRM831	22 Sep 2016 15:49:59	-26.5
PRM831	24 Aug 2016 19:03:10	-26.1
PRM831	26 Jul 2016 10:53:46	-26.0
PRM831	26 Jul 2016 09:33:01	-26.4

SLM & RTA Summary
Translated: 10-Feb-2010 10:05:45

File Translated: Z:\Vista Env\2009\090103-Napa St Regis\Noise Measurements\LD\St Regis Wedding.slmdl
Model Number: 824
Serial Number: A3176
Firmware Rev: 4.283
Software Version: 3.120
Name: Vista Environmental
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup: SLM&RTA.ssa
Setup Descr: SLM & Real-Time Analyzer
Location: St. Regis Monarch Beach Resort
Note 1: 70' from 200 guest wedding reception w-amplified music
Note 2: 150' from outdoor restaurant

Overall Any Data
Start Time: 31-May-2009 15:11:59
Elapsed Time: 00:11:00.3

	A Weight	C Weight	Flat
Leq:	74.0 dBA	83.3 dBC	83.6 dBF
SEL:	102.2 dBA	111.5 dBC	111.8 dBF
Peak:	94.2 dBA	101.1 dBC	101.7 dBF
	31-May-2009 15:16:18	31-May-2009 15:12:34	31-May-2009 15:19:49
Lmax (slow):	78.4 dBA	88.4 dBC	88.7 dBF
	31-May-2009 15:20:35	31-May-2009 15:17:59	31-May-2009 15:17:59
Lmin (slow):	64.8 dBA	72.6 dBC	72.8 dBF
	31-May-2009 15:15:29	31-May-2009 15:15:24	31-May-2009 15:15:24
Lmax (fast):	81.3 dBA	92.2 dBC	92.5 dBF
	31-May-2009 15:20:34	31-May-2009 15:17:59	31-May-2009 15:17:59
Lmin (fast):	52.7 dBA	58.2 dBC	59.1 dBF
	31-May-2009 15:15:24	31-May-2009 15:15:24	31-May-2009 15:15:24
Lmax (impulse):	83.6 dBA	94.2 dBC	94.4 dBF
	31-May-2009 15:20:34	31-May-2009 15:19:49	31-May-2009 15:19:49
Lmin (impulse):	65.3 dBA	74.8 dBC	75.0 dBF
	31-May-2009 15:15:29	31-May-2009 15:14:53	31-May-2009 15:14:53

Spectra
Start Time: 31-May-2009 15:11:59 Run Time: 00:11:00.3

Freq	Leq 1/3	Leq 1/1	Max 1/3	Max 1/1	Min 1/3	Min 1/1
12.5 Hz	53.9		53.5		28.1	
16.0 Hz	49.2	56.3	46.8	56.5	25.0	35.3
20.0 Hz	49.8		52.5		33.9	
25.0 Hz	50.7		52.6		38.3	
31.5 Hz	52.2	64.1	55.5	66.5	38.4	43.7
40.0 Hz	63.6		66.0		39.9	
50.0 Hz	68.2		73.5		43.2	
63.0 Hz	68.9	77.9	74.3	81.3	42.1	47.0
80.0 Hz	76.8		79.3		41.3	
100 Hz	78.6		81.4		42.2	
125 Hz	76.7	81.0	78.5	83.5	43.8	47.1
160 Hz	68.1		71.3		40.2	
200 Hz	68.2		72.1		41.4	
250 Hz	67.1	71.5	72.1	75.6	40.0	44.6
315 Hz	64.0		65.4		37.3	
400 Hz	61.7		68.7		38.8	
500 Hz	63.6	68.7	65.1	74.7	41.3	48.0

630 Hz	65.7		72.7		46.3	
800 Hz	65.3		75.3		45.1	
1000 Hz	66.3	69.8	76.9	80.4	42.6	48.3
1250 Hz	62.9		74.3		42.2	
1600 Hz	63.9		71.2		41.2	
2000 Hz	61.4	66.9	72.4	76.0	39.9	45.3
2500 Hz	60.4		69.5		40.5	
3150 Hz	58.5		64.7		38.0	
4000 Hz	54.0	60.3	61.4	66.7	35.0	40.6
5000 Hz	50.4		55.1		33.2	
6300 Hz	46.2		47.8		30.1	
8000 Hz	42.6	48.2	45.6	50.5	27.3	32.5
10000 Hz	37.5		42.2		23.2	
12500 Hz	32.4		37.4		20.2	
16000 Hz	24.2	33.4	27.2	37.9	19.1	24.5
20000 Hz	22.4		23.3		19.7	

Ln Start Level: 15 dB

L (1.00)	0.0
L (5.00)	0.0
L (50.00)	0.0
L (90.00)	0.0
L (95.00)	0.0
L (99.00)	0.0

Detector: Slow
Weighting: A

SPL Exceedance Level 1:	85.0 dB	Exceeded:	0 times
SPL Exceedance Level 2:	120.0 dB	Exceeded:	0 times
Peak-1 Exceedance Level:	105.0 dB	Exceeded:	0 times
Peak-2 Exceedance Level:	100.0 dB	Exceeded:	0 times

Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

Current Any Data
Start Time: 31-May-2009 15:11:59
Elapsed Time: 00:11:00.3

	A Weight	C Weight	Flat
Leq:	74.0 dBA	83.3 dBC	83.6 dBF
SEL:	102.2 dBA	111.5 dBC	111.8 dBF
Peak:	94.2 dBA	101.1 dBC	101.7 dBF
	31-May-2009 15:16:18	31-May-2009 15:12:34	31-May-2009 15:19:49
Lmax (slow):	78.4 dBA	88.4 dBC	88.7 dBF
	31-May-2009 15:20:35	31-May-2009 15:17:59	31-May-2009 15:17:59
Lmin (slow):	64.8 dBA	72.6 dBC	72.8 dBF
	31-May-2009 15:15:29	31-May-2009 15:15:24	31-May-2009 15:15:24
Lmax (fast):	81.3 dBA	92.2 dBC	92.5 dBF
	31-May-2009 15:20:34	31-May-2009 15:17:59	31-May-2009 15:17:59
Lmin (fast):	52.7 dBA	58.2 dBC	59.1 dBF
	31-May-2009 15:15:24	31-May-2009 15:15:24	31-May-2009 15:15:24
Lmax (impulse):	83.6 dBA	94.2 dBC	94.4 dBF
	31-May-2009 15:20:34	31-May-2009 15:19:49	31-May-2009 15:19:49
Lmin (impulse):	65.3 dBA	74.8 dBC	75.0 dBF
	31-May-2009 15:15:29	31-May-2009 15:14:53	31-May-2009 15:14:53

Calibrated:	31-May-2009 11:57:31	Offset:	-48.5 dB
Checked:	31-May-2009 11:57:31	Level:	94.0 dB

Calibrator	not set	Level:	94.0 dB
Cal Records Count:	0		
Interval Records:	Disabled	Number Interval Records:	0
Time History:	Disabled	Number History Records:	0
Run/Stop Records:		Number Run/Stop Records:	2

Roadway Construction Noise Model (RCNM),Version 1.1

Report date:	4/1/2024
Case Description:	Blue Cloud Bike Park - Operations

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Canine Facilities to East	Commercial	47.5	47.5	47.5

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40		77.6	800	0
Generator (<25KVA, VMS signs)	No	50		72.8	4100	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Backhoe		53.5	49.5	N/A	N/A	N/A	N/A
Generator (<25KVA, VMS signs)		34.5	31.5	N/A	N/A	N/A	N/A
	Total	**54**	**50**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to West	Residential	52.6	52.6	52.6

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40		77.6	1700	0
Generator (<25KVA, VMS signs)	No	50		72.8	2300	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Backhoe		46.9	43.0	N/A	N/A	N/A	N/A
Generator (<25KVA, VMS signs)		39.6	36.5	N/A	N/A	N/A	N/A
	Total	**47**	**44**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/1/2024
Case Description: Blue Cloud Bike Park - Operations

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to South	Residential	67.3	67.3	67.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	1900	0
Generator (<25KVA, VMS signs)	No	50		72.8	5200	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		46.0	42.0	N/A	N/A	N/A	N/A
Generator (<25KVA, VMS signs)		32.5	29.5	N/A	N/A	N/A	N/A
	Total	**46**	**42**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX H:
ASSEMBLY BILL 52 DOCUMENTATION

Fernandeño Tataviam Band of Mission Indians
Tribal Historic & Cultural Preservation Department

June 10, 2024

Jeff Morrison
Open Space and Trails Administrator
City of Santa Clarita

Sent via email to JMORRISON@santa-clarita.com

Re: City of Santa Clarita Blue Cloud Bike Park Project

Dear Jeff Morrison,

The Cultural Resources Management (CRM) Division of the Fernandeño Tataviam Band of Mission Indians (FTBMI) has requested to engage in consultation pursuant to Assembly Bill 52 for the proposed City of Santa Clarita Blue Cloud Bike Project. The CRM Division of the FTBMI recommends site survey by Tribal Monitors procured by the FTBMI occur prior to holding a consultation meeting and providing Mitigation Measures. The FTBMI has maintained a professional Tribal Monitoring (TM) service for decades by aligning its traditional framework of preserving cultural, spiritual, and emotional ties to the land with effective options for mitigating potential damages to cultural resources.

The Tribal Historic and Cultural Preservation (THCP) Department's field services for the Project, located in the City of Santa Clarita, CA consist of TM pedestrian survey, and documentation of work activity and artifact discoveries through daily monitoring logs and photographs. The CRM Manager shall oversee Tribal coordination, correspondence, and reporting, but is not necessarily a full-time and/or field position.

FTBMI PROJECT ESTIMATE		
Category:	**Estimated Number of Days/Hours**	
Tribal Monitor	2 Monitors/ 16 Hours	
	Total Estimate:	$[redacted]

1019 Second Street, Suite 1 | San Fernando | California, 91340 | (818) 837-0794 | Fax (818) 837-0796 | thcp@tataviam-nsn.us

Contact Information
Sarah Brunzell Manager
Cultural Resources Management Division
1019 Second Street
San Fernando, CA 91340 Office
Contact: 818-837-0794
E-mail: sarah.brunzell@tataviam-nsn.us

Respectfully submitted by

TRIBE:
FERNANDEÑO TATAVIAM BAND OF MISSION INDIANS

By: Sarah Brunzell
Name: Sarah Brunzell
Title: CRM Manager

Accepted by

CLIENT:
City of Santa Clarita

By: ______________________________
Name: ____________________________
Title: ____________________________

HASKELL CANYON BIKE PARK PROJECT: TRIBAL CONSULTATION LOG

Date	Type of Communication	Agency and/or Consultant Representative(s) (name, title, affiliation)	Tribal Representative(s) (name, title, affiliation)	Description/Summary of Communication
02/7/2025	Email	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Sarah Brunzell, CRM Manager, Fernandeno Tatavium Band of Mission Indians	Initial contact with Sarah Brunzell to provide notification about the City's plan to build Haskell Canyon Bike Park and asked to set up a meeting to discuss the project. Email was rejected and said undelivered.
02/7/2025	Email	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Kimia Fatehi, Chief of Staff, Fernandeno Tatavium Band of Mission Indians	Followed-up with the Chief of Staff since the initial email was rejected. This email notified the tribe for a request to set up a meeting about the project.
2/14/2025	Phone Call	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Receptionist	Amber Rodriguez called the main office line to follow-up with Kimia on the email that was sent on February 7, 2025.
2/18/2025	Phone Call	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Receptionist	Amber Rodriguez called the main office line to follow-up on the email that was sent on February 7, 2025 and asked for a call back to setup a meeting.
2/25/2025	Email	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Kimia Fatehi, Chief of Staff, Fernandeno Tatavium Band of Mission Indians	Kimia sent an emailing responding to the City's request regarding the project and connected City staff with Miguel Luna (Chief Administrative Officer)
2/26/2025	Email	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Miguel Luna, Chief Administrative Officer, Fernandeno Tatavium Band of Mission Indians	Miguel Luna responded to the email Amber Rodriguez sent on February 14, 2025 and followed up on their June 2024 discussions with Jeff Morrison regarding a contract for Tribal Monitors to conduct a cultural survey prior to the AB 52 consultation. They attached their formal request and estimate, and confirmed they're available to survey the site alongside the project archaeologists.
3/2/2025	Email	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Miguel Luna, Chief Administrative Officer, Fernandeno Tatavium Band of Mission Indians	The City informed FTBMI that a new project manager has taken over the Haskell Canyon Bike Park Project and that Jeff Morrison is no longer involved. They confirmed that the consultation process has officially begun, welcomed FTBMI to visit the site, and offered the completed Phase I Cultural Assessment for review, with the CEQA document set to be released soon.

3/10/2025	Email	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Miguel Luna, Chief Administrative Officer, Fernandeno Tatavium Band of Mission Indians	The FTBMI clarified that their discussions with Jeff Morrison were about having Tribal Monitors participate in a pedestrian survey before starting consultation, and they were unaware a Phase I report had already been completed. They requested the City complete the Tribe's project intake and consultation forms, and upload all archaeological reports so they can review the site and begin formal consultation.
4/8/2025	Email	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Miguel Luna, Chief Administrative Officer, Fernandeno Tatavium Band of Mission Indians	The City followed up on a project intake form submitted on March 27, noting that the Tribe's response is the final item needed before publishing the CEQA document. They also requested an in-person meeting to discuss the project and offer any needed information.
April 10, 2025	Email	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Miguel Luna, Chief Administrative Officer, Fernandeno Tatavium Band of Mission Indians	The Tribe classified the Haskell Canyon Bike Park Project as Medium Sensitivity and asked the City to complete their consultation form accordingly. They also requested available dates to hold a government-to-government consultation before the MND is published.
April 11, 2025	Email	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Miguel Luna, Chief Administrative Officer, Fernandeno Tatavium Band of Mission Indians	The City informed the Tribe that they've been unable to submit the consultation form due to technical issues and asked for guidance or an alternative method. They provided their availability for consultation, requested to receive the Tribe's recommendations in advance, and emphasized the urgency of publishing the MND within the next week and a half.
April 16, 2025	Email	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Miguel Luna, Chief Administrative Officer, Fernandeno Tatavium Band of Mission Indians	Miguel Luna sent an email to schedule a meeting between the tribe and the City.
April 18. 2025	Zoom	City of Santa Clarita (City) Amber Rodriguez, Management Analyst, City of Santa Clarita	Miguel Luna, Chief Administrative Officer, Fernandeno Tatavium Band of Mission Indians	The City and Tribe met via Zoom to review the Tribe's recommendations and reached an agreement on the revised terms.

Amber T. Rodriguez

From:	Amber T. Rodriguez
Sent:	Wednesday, April 16, 2025 3:02 PM
To:	'Miguel Luna, Chief Administrative Officer'
Cc:	THCP CRMD; Itati Ortega, Administrative Assistant
Subject:	RE: Haskell Canyon Bike Park

Hi Miguel,

Any chance you guys can send over your recommendations prior to the meeting? This would allow us to finalize the consultation by the end of this week.

Thank you so much for all your help!

From: Miguel Luna, Chief Administrative Officer <Miguel.Luna@tataviam-nsn.us>
Sent: Wednesday, April 16, 2025 1:31 PM
To: Amber T. Rodriguez <ATRODRIGUEZ@santa-clarita.com>
Cc: THCP CRMD <crm@tataviam-nsn.us>; Itati Ortega, Administrative Assistant <itati.ortega@tataviam-nsn.us>
Subject: Re: Haskell Canyon Bike Park

Yes, can you please send out a calendar invite for me and Ms. Ortega cc'd here.

Miguel Luna
Chief Administrative Officer

Tribal Administration
Fernandeño Tataviam Band of Mission Indians
818-837-0794
1019 2nd Street, San Fernando, CA 91340
Native Sovereign Nation of Northern Los Angeles County

Fernandeño Tataviam
Band of Mission Indians
Proactively establishing entities to overcome systemic barriers:

From: Amber T. Rodriguez <ATRODRIGUEZ@santa-clarita.com>
Date: Wednesday, April 16, 2025 at 1:23 PM
To: Miguel Luna, Chief Administrative Officer <Miguel.Luna@tataviam-nsn.us>
Cc: THCP CRMD <crm@tataviam-nsn.us>, Itati Ortega, Administrative Assistant <itati.ortega@tataviam-nsn.us>
Subject: RE: Haskell Canyon Bike Park

[CAUTION] EXTERNAL Email. Exercise caution.

Hi Miguel,

Sorry for missing your call. I'm available on Friday. Does 3pm work for you?

From: Miguel Luna, Chief Administrative Officer <Miguel.Luna@tataviam-nsn.us>
Sent: Wednesday, April 16, 2025 1:22 PM
To: Amber T. Rodriguez <ATRODRIGUEZ@santa-clarita.com>
Cc: THCP CRMD <crm@tataviam-nsn.us>; Itati Ortega, Administrative Assistant <itati.ortega@tataviam-nsn.us>
Subject: Re: Haskell Canyon Bike Park
Importance: High

CITY WARNING: This email was sent from an external server. Use caution clicking links or opening attachments.

Amber – how's this Friday looking for you between the hours of 2pm-5pm online? If not, perhaps Monday next week 4-5pm?

Let me know.

Miguel Luna
Chief Administrative Officer

Tribal Administration
Fernandeño Tataviam Band of Mission Indians
818-837-0794
1019 2nd Street, San Fernando, CA 91340
Native Sovereign Nation of Northern Los Angeles County

Fernandeño Tataviam Band of Mission Indians
Proactively establishing entities to overcome systemic barriers:

From: Amber T. Rodriguez <ATRODRIGUEZ@santa-clarita.com>
Date: Friday, April 11, 2025 at 2:12 PM
To: Miguel Luna, Chief Administrative Officer <Miguel.Luna@tataviam-nsn.us>
Cc: THCP CRMD <crm@tataviam-nsn.us>, Itati Ortega, Administrative Assistant <itati.ortega@tataviam-nsn.us>
Subject: RE: Haskell Canyon Bike Park

[CAUTION] EXTERNAL Email. Exercise caution.

Hi Miguel,

Thank you for sending over the link to the form. I've attempted to submit it about four times now, but each time it remains stuck in "processing." I'm not sure if that's typical, but I'd appreciate your guidance on how to move forward or if there's an alternate way to submit it.

Regarding scheduling, I'm available Monday through Friday between 8:00 a.m. and 5:00 p.m., and I'm happy to adjust to a time that works best for you to begin the government-to-government consultation. Please let me know your earliest availability.

Additionally, if possible, I'd appreciate receiving the tribe's recommendations in advance so I can review them ahead of our meeting. That way, we can focus our time on any outstanding items and make the most of the discussion.

Lastly, I want to reiterate the City's goal of publishing the MND within the next week and a half in order to meet critical deadlines.

Please let me know the best way to submit the form and how we can continue moving forward.

Thank you,

Amber Rodriguez
Management Analyst
(661) 284-1414

From: Miguel Luna, Chief Administrative Officer <Miguel.Luna@tataviam-nsn.us>
Sent: Thursday, April 10, 2025 1:42 PM
To: Amber T. Rodriguez <ATRODRIGUEZ@santa-clarita.com>
Cc: THCP CRMD <crm@tataviam-nsn.us>; Itati Ortega, Administrative Assistant <itati.ortega@tataviam-nsn.us>
Subject: Haskell Canyon Bike Park

Dear Amber,

The proposed Haskell Canyon Bike Park Project has been categorized as **Medium Sensitivity**. Please submit a consultation form at the link below and select **Medium Sensitivity:**

https://www.tataviam-nsn.us/project-consultation-form/

Please also provide your availability to engage in government-to-government consultation, which should occur prior to the MND being published.

Miguel Luna
Chief Administrative Officer

Tribal Administration
Fernandeño Tataviam Band of Mission Indians
818-837-0794
1019 2nd Street, San Fernando, CA 91340
Native Sovereign Nation of Northern Los Angeles County

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Miguel Luna
Chief Administrative Officer

Tribal Administration
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Fernandeño Tataviam Band of Mission Indians
Proactively establishing entities to overcome systemic barriers:

Miguel Luna
Chief Administrative Officer

Tribal Administration
Fernandeño Tataviam Band of Mission Indians
818-837-0794
1019 2nd Street, San Fernando, CA 91340
Native Sovereign Nation of Northern Los Angeles County

Fernandeño Tataviam Band of Mission Indians
Proactively establishing entities to overcome systemic barriers:

Amber T. Rodriguez

From:	Miguel Luna <Miguel.Luna@tataviam-nsn.us>
Sent:	Monday, March 10, 2025 12:21 PM
To:	Amber T. Rodriguez
Cc:	THCP CRMD
Subject:	Re: City of Santa Clarita-Haskell Canyon Bike Park Project
Attachments:	FTBMI CONSULTATION SERVICES FEE SCHEDULE-V3.2024.pdf

Hi Amber,

There seems to be a bit of a disconnect. Our conversations with Jeff Morrison were regarding the fact that the CRM Division of the FTBMI requested Tribal Monitors perform a pedestrian survey prior to engaging in consultation and providing Mitigation Measures. We were not aware that a Phase I survey and report had already been completed.

The intention was for Tribal monitors to participate in the pedestrian survey per the proposal provided, not for the Tribe to visit the site.

Also, the CRM Division of the FTBMI requires a project intake form and consultation form prior to engaging in consultation. Please see the FTBMI's attached fee schedule for more information.

If the pedestrian survey was already performed, please complete the mandatory project intake form at the link below:

https://www.tataviam-nsn.us/project-intake/

One reason the CRM Division of the FTBMI requested to participate in the pedestrian survey, is due to some unknowns about the location. Please ensure the Phase I Pedestrian Survey and any additional archaeological reports are uploaded with the project intake form. If the City of Santa Clarita is not the project applicant, please ensure the project applicant provides the requested information.

Once the project intake form is received, we can review the project and confirm the level of sensitivity. Once the consultation form is received, we can engage in government-to-government consultation.

Miguel Luna
Chief Administrative Officer

Tribal Administration
Fernandeño Tataviam Band of Mission Indians
818-837-0794
1019 2nd Street, San Fernando, CA 91340
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Fernandeño Tataviam Band of Mission Indians
Proactively establishing entities to overcome systemic barriers:

From: Amber T. Rodriguez <ATRODRIGUEZ@santa-clarita.com>
Date: Sunday, March 2, 2025 at 1:13 PM
To: Miguel Luna <Miguel.Luna@tataviam-nsn.us>
Cc: THCP CRMD <crm@tataviam-nsn.us>
Subject: RE: City of Santa Clarita-Haskell Canyon Bike Park Project

[CAUTION] EXTERNAL Email. Exercise caution.

Mr. Luna,

Thank you for your email regarding the City's Haskell Canyon Bike Park Project (formerly Blue Cloud Bike Park).

I have taken over as project manager, and Jeff Morrison is no longer associated with it. However, he provided a history of his interaction with the *Fernandeño Tataviam Band of Mission Indians (FTBMI).*

We are happy to provide FTMBI with the completed Phase I Cultural Resources Assessment for the Blue Cloud Bike Park Project (April 2024) if you would like to review it.

FTBMI members are welcome to visit the site and evaluate it. If FTBMI members intend to visit the site, please notify me in advance of their visit.

The City understands that the *FTBMI* would like to engage in a government-to-government consultation and provide recommended mitigation measures; please consider this a notification that the consultation has begun, and we look forward to receiving FTBMI's recommendations. The project location and description are attached, and please find attached an exhibit showing the project layout.

The draft CEQA document will be released for its 30-day public comment period in the next two weeks.

I look forward to working with you.

Amber Rodriguez
Management Analyst
(661) 284-1414

From: Miguel Luna <Miguel.Luna@tataviam-nsn.us>
Sent: Wednesday, February 26, 2025 3:20 PM
To: Amber T. Rodriguez <ATRODRIGUEZ@santa-clarita.com>
Cc: THCP CRMD <crm@tataviam-nsn.us>
Subject: Re: City of Santa Clarita-Haskell Canyon Bike Park Project

CITY WARNING: This email was sent from an external server. Use caution clicking links or opening attachments.

Moving Ms. Fatehi to Bcc.

Ms. Rodriguez:

Thank you for reaching out regarding the Blue Could Bike Park Project (Haskell Canyon Bike Park Project). The conversation left off in June 2024 with Jeff Morrison working on a contract/what a contract should look like for us to provide Tribal Monitors to survey the site prior to holding a AB 52 consultation meeting and providing Mitigation Measures. Attached is the Cultural Resources Management (CRM) Division of the Fernandeño Tataviam Band of Mission Indians' (FTBMI) formal request and survey estimate that was submitted to Jeff per his request June 10, 2024. We had been in communication with Jeff since April of 2024.

Also, the CRM Division informed Jeff we're happy to perform this pedestrian survey at the same time as the project archaeologist(s).

Please copy CRM@tataviam-nsn.us on all future emails as this will ensure a prompt response. Let me know if you have any additional questions.

Thanks,

Miguel Luna
Chief Administrative Officer

Tribal Administration
Fernandeño Tataviam Band of Mission Indians
818-837-0794
1019 2nd Street, San Fernando, CA 91340
Native Sovereign Nation of Northern Los Angeles County

Fernandeño Tataviam
Band of Mission Indians
Proactively establishing entities to overcome systemic barriers:

•

From: Kimia Fatehi <kfatehi@tataviam-nsn.us>
Sent: Tuesday, February 25, 2025 10:19 PM
To: Amber T. Rodriguez <ATRODRIGUEZ@santa-clarita.com>; THCP CRMD <crm@tataviam-nsn.us>
Subject: Re: City of Santa Clarita-Haskell Canyon Bike Park Project

Dear Amber,

Please excuse this late reply. I am SO sorry that I missed your original email. Thank you for checking in with me and bumping this up my inbox. I've copied the email address that reaches our CRM team. They will review and get back to you shortly. Please don't hesitate to email me for anything else.

Thank you,
Kimia

Kimia Fatehi
Chief of Staff

Office of the Tribal President
Fernandeño Tataviam Band of Mission Indians
818-837-0794
1019 2nd Street, San Fernando, CA 91340
Native Sovereign Nation of Northern Los Angeles County

•

From: Amber T. Rodriguez <ATRODRIGUEZ@santa-clarita.com>
Sent: Tuesday, February 25, 2025 6:20:47 PM
To: Kimia Fatehi <kfatehi@tataviam-nsn.us>
Subject: RE: City of Santa Clarita-Haskell Canyon Bike Park Project

You don't often get email from atrodriguez@santa-clarita.com. Learn why this is important

[CAUTION] **EXTERNAL Email. Exercise caution.**

Hi Kimia,

I hope all is well. Following up on my last email regarding the City's Haskell Canyon Bike Park project. I am trying to finalize the CEQA survey and want to ensure that we finalize any necessary conversations with the tribe before finalizing.

Thank you,

Amber Rodriguez
Management Analyst
(661)284-1414

From: Amber T. Rodriguez
Sent: Friday, February 7, 2025 2:09 PM
To: 'kfatehi@tataviam-nsn.us' <kfatehi@tataviam-nsn.us>
Subject: City of Santa Clarita-Haskell Canyon Bike Park Project

Hi Kimia,

I hope you're doing well.

My name is Amber Rodriguez, and I work for the City of Santa Clarita. I recently took over as the project manager for the Haskell Canyon Bike Park Project, previously known as Blue Cloud Bike Park. I'd like to follow up on where the previous project manager left off with your team.

I initially reached out to Sarah Brunzell, but my emails were returned as undeliverable. Is there someone new in her role that I can connect with?

Thank you,

Amber Rodriguez
Management Analyst
(661)284-1414

Haskell Canyon/Blue-Cloud Bike Park
XVIII., Tribal Culture Resources/Tribal Consultation - Mitigation Measures

Tribal Consultation concluded on 04/18/2025 with the City and the Fernandeño Tataviam Band of Mission Indians agreeing to the following mitigation measures.

TCR-1 Document Release
Any and all archaeological documents created as a part of the project (isolate records, site records, survey reports, testing reports, and monitoring reports) shall be provided to the Fernandeño Tataviam Band of Mission Indians.

TCR-2 Cultural Resources Monitoring and Mitigation Plan
In the event of an inadvertent discovery of Tribal Cultural Resources, its importance will be determined by the Tribal Monitor, the project archaeologist, and the City. If determined to be important, a Cultural Resources Monitoring and Mitigation Plan (CRMMP) shall be prepared, in consultation with the Fernandeño Tataviam Band of Mission Indians. The CRMMP will provide details regarding the process for in-field treatment of inadvertent discoveries and the disposition of inadvertently discovered non-funerary resources.

TCR-3 Full Time Monitoring, Initial Pass, (1) Monitor
The project applicant shall retain a professional Tribal Monitor procured by the Fernandeño Tataviam Band of Mission Indians to observe all ground-disturbing activities including, but not limited to, clearing, grubbing, grading, excavating, digging, trenching, plowing, drilling, tunneling, quarrying, leveling, driving posts, auguring, blasting, stripping topsoil or similar activity during the initial pass (the first disturbance of all soil to the total depth of which it will be disturbed). If Cultural Resources are not encountered after observing the initial pass of all ground-disturbance, additional Tribal Monitoring is not required. If Cultural Resources are encountered during the initial pass, they shall be assessed by the Tribal Monitor, the project archaeologist, and the City. If determined to be important, the Tribal Monitor(s) shall continue observing ground disturbing activities to the satisfaction of the Tribal Monitor, project archaeologist, and the City to insure important Tribal Cultural Resources are identified. Tribal Monitoring Services will continue until confirmation is received from the project applicant, in writing, that all scheduled activities pertaining to Tribal Monitoring are complete, be it initial pass or all disturbance, dependent upon inadvertent discovery. If the Project's scheduled activities require the Tribal Monitor(s) to leave the Project for a period of time and return, confirmation shall be submitted to the Tribe by Client, in writing, upon completion of each set of scheduled activities and 5 days' notice (if possible) shall be submitted to the Tribe by project applicant, in writing, prior to the start of each set of scheduled activities. If cultural resources are encountered, the Tribal Monitor will have the authority to request that ground-disturbing activities cease within 60 feet of discovery and a qualified archaeologist meeting Secretary of Interior standards retained by the project applicant as well as the Tribal Monitor shall assess the find.

TCR-4 In the Event of an Inadvertent Discovery
If cultural resources are discovered during project activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease and a qualified archaeologist meeting Secretary of Interior standards retained by the project applicant shall assess the find. Work on the portions of the Projects outside of the buffered area may continue during this assessment period. The Fernandeño Tataviam Band of Mission Indians (FTBMI) shall be contacted about any pre-contact and/or post-contact finds and be provided information after the archaeologist makes their initial assessment of the nature of the find, to provide Tribal input with regards to significance and treatment.

TCR-5 Human Remains
In the inadvertent discovery of human remains or funerary objects during any activities associated with the Project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5 and that code shall be enforced for the duration of the Project.

Inadvertent discoveries of human remains and/or funerary object(s) are subject to California State Health and Safety Code Section 7050.5, and the subsequent disposition of those discoveries shall be decided by the Most Likely Descendant (MLD), as determined by the Native American Heritage Commission (NAHC), should those findings be determined as Native American in origin.