FINAL
Drainage Feasibility Study
Volume IV (Environmental Component)

Community of Rimforest
County of San Bernardino, CA

Prepared For:

San Bernardino County Department of Public Works
Flood Control District
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November 8, 2010

DRAFT
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January 25, 2010

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SECTION 1: INTRODUCTION

1.1 - Purpose

Currently, there are several residential properties located along eroded slopes within the southern portion of the village of Rimforest that are in danger of sliding down the hillside due to storm runoff. Runoff within the village of Rimforest area is currently conveyed through a series of drainage improvements along the south side of Rimforest and discharged at two locations over an existing cliff.

At this time, the County of San Bernardino is evaluating various options to redirect runoff that would potentially eliminate the cliff-side erosion. Thus, the purpose of this Drainage Feasibility Study is to identify environmental effects related to each option and select the preferred option.

1.2 - Project Location

The site is located in Township 2 North, Range 3 West, Section 30, immediately north of the San Bernardino National Forest, in the community of Rimforest, California. Access to the site is off State Route 18 (SR-18). See Exhibit 1 for the projects location.

1.3 - Project Description

Options

This Drainage Feasibility Study will analyze the potential environmental effects from a number of options analyzed by the San Bernardino County Department of Public Works, Flood Control District, to redirect the majority of the runoff from the southern part of Rimforest, to other discharge locations for the purpose of reducing and mostly eliminating the cliff-side erosion. At this time, two options are proposed by the San Bernardino County Department of Public Works Flood Control District and will only differ in the runoff discharge locations.

Option 1 - This option will divert the runoff northerly into Little Bear Creek, which flows through Blue Jay and into Lake Arrowhead (Mojave Watershed). Development of Option 1 will require construction of a storm drain system on SR-18 and within the community of Rimforest. Option 1 will also require the construction of a retarding basin(s) to avert runoff damage to Blue Jay and structures along Little Bear Creek. With development of the storm drain systems and retarding basin(s), Option 1 will divert a total of approximately 100 Acre-Feet per year from the Santa Ana River watershed to the Mojave basin watershed.

Option 2 – The second option, will divert the runoff into Daley Creek and ultimately southerly into the Santa Ana River Watershed. The existing runoff north of SR-18 will continue to drain into Little Bear Creek and will total 167 cubic feet per second (CFS) from approximately 41 acres. The diverted

flow rate of 303 CFS from the Village of Rimforest, including the 51 acres north of SR-18, (which currently flows into the village), will be conveyed into an existing valley location immediately south of SR-18, which connects to Daley Creek. See Exhibit 2 (Local Vicinity USGS Map) and Exhibit 3 (Local Vicinity Aerial Base Map) for the location of Options 1 and 2.

Construction Phases

Both options would consist of three phases of construction. The following describes each phase, as depicted in the Draft Drainage Feasibility Study conducted by Joseph E. Bonadiman and Associates (2009):

Phase 1 (Reduce Runoff by 64% - 50.35 AC)

Phase 1 will construct an improved channel, approximately 2,700 feet long, along the north side of SR-18 to convey mountainside runoff from an additional 51 acres to Little Bear Creek.

The upper western part of the channel is proposed to intercept the mountainside runoff and at the same time, filter any debris into the street. Then, a five (5) to six (6) foot RCP will carry the runoff to Little Bear Creek. The current runoff into this creek is from a tract north of SR-18 from an area of approximately 41 acres, with a 100-year flow rate of approximately 167 CFS. The added flow rate from 51 acres north of SR- 18 would be 225 CFS for a total flow rate of 393 CFS. The channel size and shape have been completely evaluated by the County' Flood Control District; a four-foot wide, six-foot high rectangular channel is adequate for the upper 1,060 feet of the channel, with numerous grate inlets to filter debris from the channel and onto SR-18. The lower 1,615 feet of the channel would be either five or six-foot diameter concrete pipe, with street inlets.

The construction of the retarding basin (2) is a part of the proposed Church of the Woods development. Preliminary analysis shows a single ten acre-foot basin with two through 24-inch discharge pipes will reduce the peak outflow to 139 CFS, less than the existing 100-year flow rate of 167 CFS. Because of the inadequate drainage structures in Little Bear Creek, it may be desirable to install larger basin(s), to alleviate future flooding problems. The hydrology study map of this report indicated the area covered by three interconnected basins immediately northwest of the Church of the Woods proposed development.

Phase 2 (Reduce Runoff by 30% - 23.79 AC)

Phase 2 includes the installation of a 48-inch RCP storm drain from Pine Avenue under SR-18 to Little Bear Creek. This will require a trench with depths up to 22 feet over a total distance of 1,176 feet. The added flow rate from 24 acres of onsite area would be 106 CFS from the pipe. After a confluence with the Phase 1 flow the peak 100-year flow of 454 CFS, if the Phase 3 option described below is included, then the peak flow rate would be 470 CFS.

This option also requires additional storm drains within Rimforest to intercept the flow along Pine Avenue with street inlets and a smaller drain from the southwest through the Lumber Yard to the Pine Avenue main pipe. Grate inlets would also be installed in the Lumber Yard off Pine Avenue.

Phase 3 (Reduce Runoff by 5% - 3.99 AC)

Phase 3 includes the installation of a lift/pump station at the intersection of Apache Trail and Blackfoot Trail west to divert flow to the Phase 2 proposed 30-inch drainpipe through the Lumber Yard. This will add approximately 16 CFS during a 100-Year storm event to the Phase 2 pipe. Phase 3 may be necessary regardless of other options to divert this flow away from this cliff area of Rimforest where the most severe landslide damage is taking place. The runoff could be pumped to the primary discharge channel south of Pine Street. This will require a combination lift pump for low flow rates, and a 30 horsepower turbine pump when the peak flow rate occurs. A 24-inch PVC pipe approximately 405 feet long is required to transport peak flow rate to the proposed 30-inch storm drain.

1.4 - Intended Uses of this Document

This Drainage Feasibility Study will assist the San Bernardino County Department of Public Works, Flood Control District in evaluating the potential environmental impacts from the selected options to redirect the majority of the runoff from the southern part of the village of Rimforest, to other discharge locations for the purpose of reducing and mostly eliminating the cliff-side erosion. The purpose of this report is to identify environmental constraints related to each option and assist with the selection process. Once the option has been selected, an Initial Study will be prepared to further evaluate potential impacts.

1.5 - Environmental Setting

Currently, runoff from 51 acres of the area north of SR-18 crosses the highway and drains into Rimforest. The runoff flows into a nursery south of SR-18 to Pine Avenue and then easterly to a low point along Pine Avenue. Three additional culverts direct the runoff from north of SR-18 under the road and into Rimforest. Most of the off-site runoff and some of the on-site runoff flows to the easterly portion of Pine Avenue and Blackfoot Trail. At the intersection of Pine Street and Blackfoot Trail, a drainage ditch, street inlet, and parking lot drainpipe have been installed to carry the flow to the main drainage ditch and discharge point into Strawberry Creek. According to the San Bernardino County Flood Control Hydrology Report, the peak flow rate at this intersection for a 100-year storm event is 265 CFS.

1.6 - Surrounding Land Uses

The surrounding area abutting the drainage area consists of SR-18, with industrial/commercial uses south of the SR-18 and residential uses thereafter. Directly south of the residential uses is the San Bernardino National Forest, which is federal land and will remain undeveloped. Additionally, a

majority of the land to the immediate south is eroding cliff-side, which is due to the runoff from SR-18. Areas to the north of SR-18 are hillsides and rural residential uses.

1.7 - Environmental Constraints

Development of Option 1 and 2 will reduce runoff within the Rimforest area; consequently diverting the runoff to another location. The diversion may create new constraints within the new diversion locations, which could be directed to either the Santa Ana watershed by construction of a channel to carry the runoff to the east of Rimforest and then southerly to Daley creek, or, construct drainage channel(s) to divert the runoff into Little Bear Creek. See Exhibit 5 and Exhibit 6 for constraints regarding flood and Special Status Species. An environmental checklist and a detailed analysis for both Options 1 and 2 are outlined in Section 2, *Environmental Checklist*.

Source: Census 2000 Data, The CaSIL, MBA GIS 2009.

Michael Brandman Associates

NORTH

5 2.5 0 5 Miles

Exhibit 1
Regional Location Map

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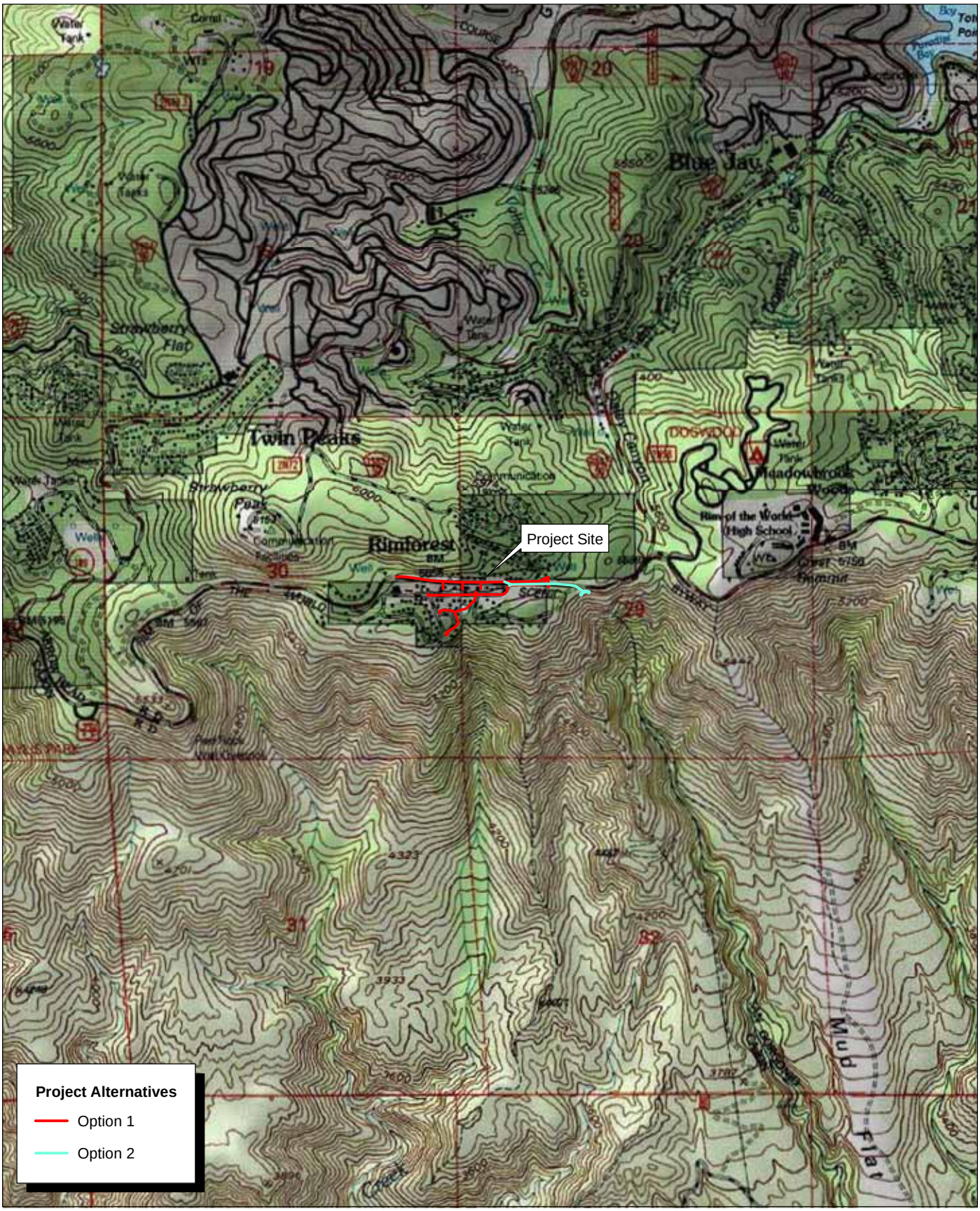
COUNTY OF SAN BERNARDINO • RIMFOREST DRAINAGE STUDY
DUE DILIGENCE



Source: TOPO! USGS Harrison (1996) & Lake Arrowhead (1996) 7.5' DRG's.

Exhibit 2
Local Vicinity Map
Topographic Base

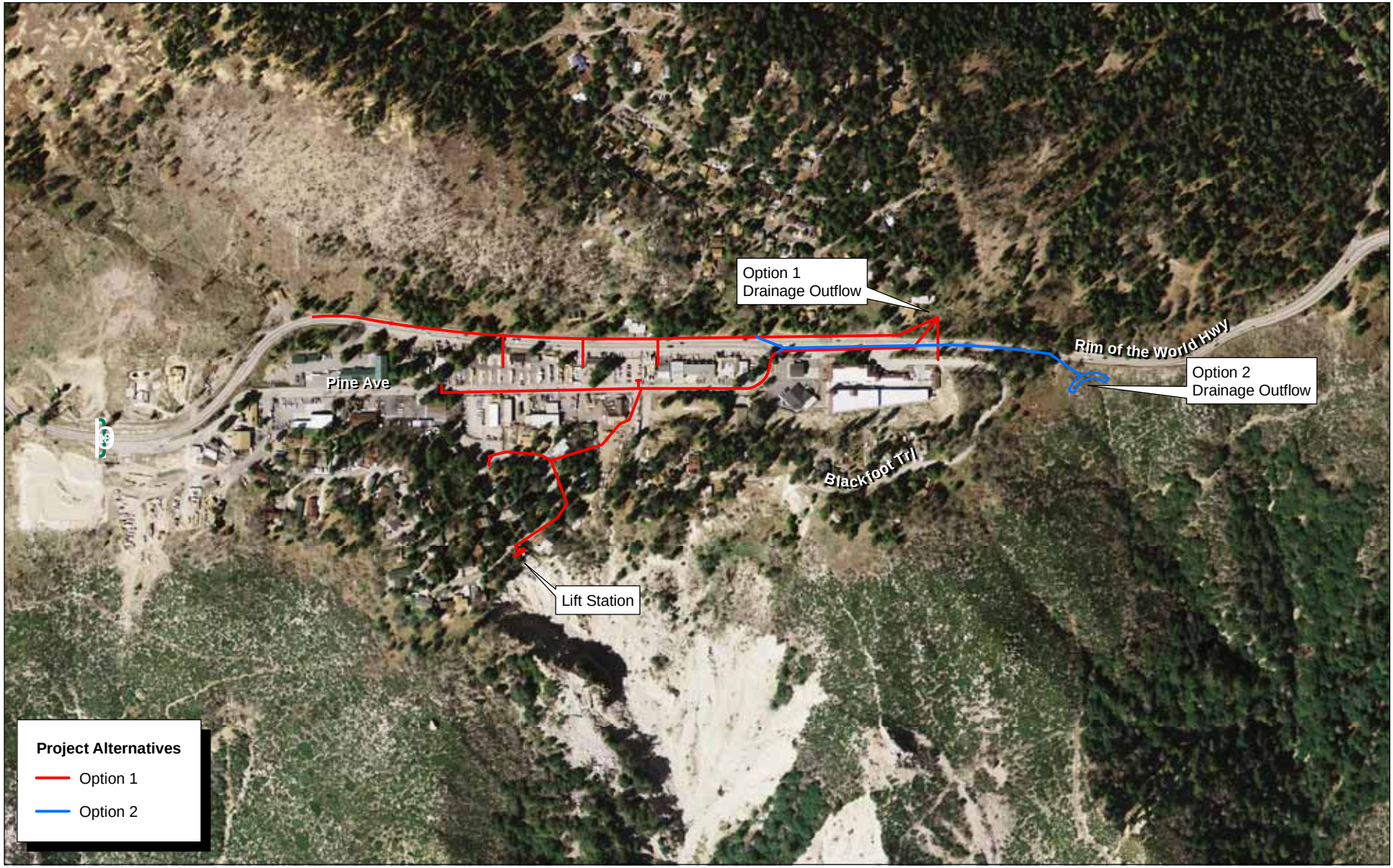
Michael Brandman Associates

NORTH

2,000 1,000 0 2,000 Feet

31380003 • 07/2009 | 2_Local_Topo.mxd

COUNTY OF SAN BERNARDINO • RIMFOREST DRAINAGE STUDY
DUE DILIGENCE



Source: Google Earth Pro aerial (March 31, 2007).

NORTH

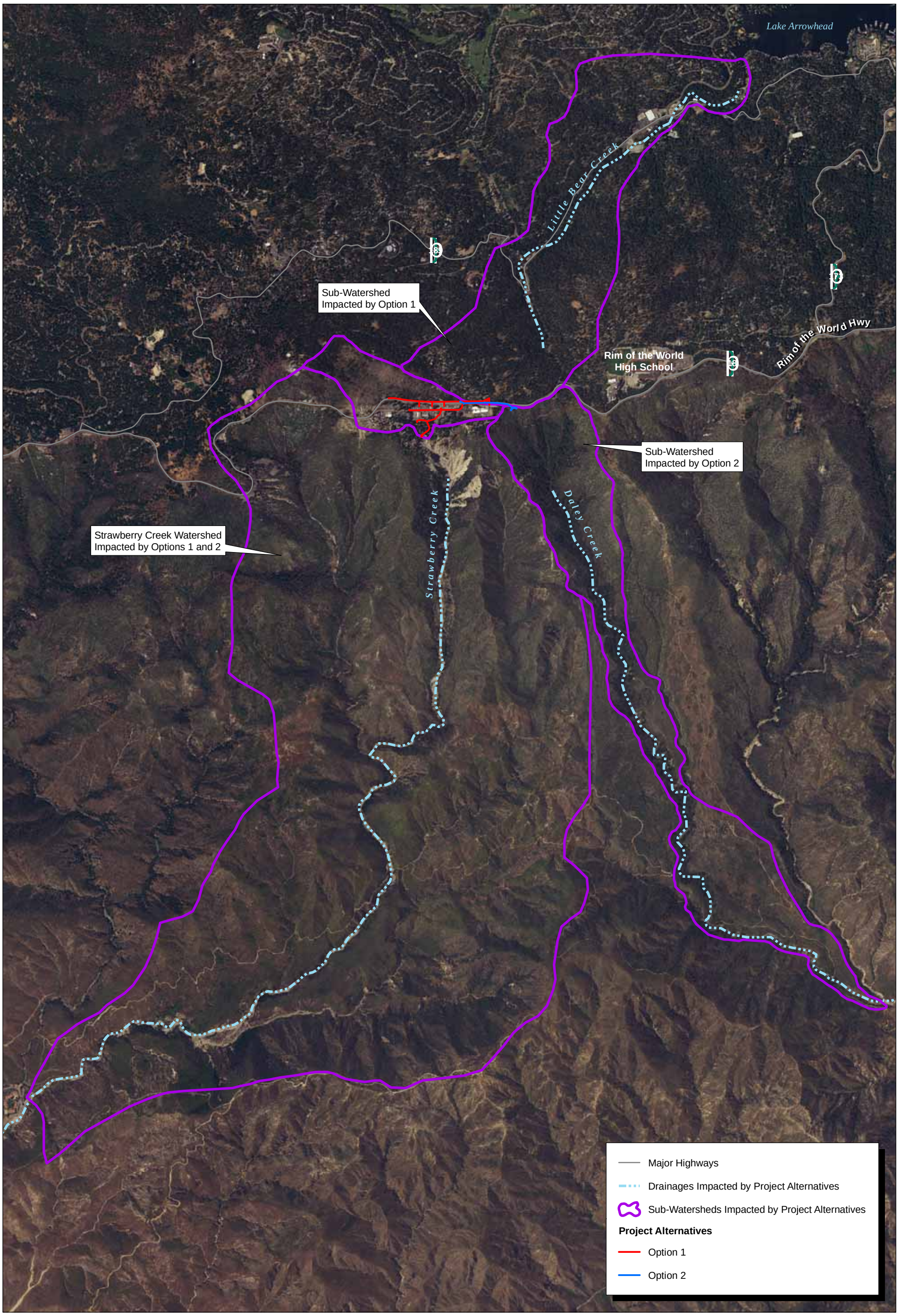
500 250 0 500 Feet

Michael Brandman Associates

Exhibit 3
Local Vicinity Map
Aerial Base

31380003 • 07/2009 | 3_local_aerial.mxd

COUNTY OF SAN BERNARDINO • RIMFOREST DRAINAGE STUDY
DUE DILIGENCE



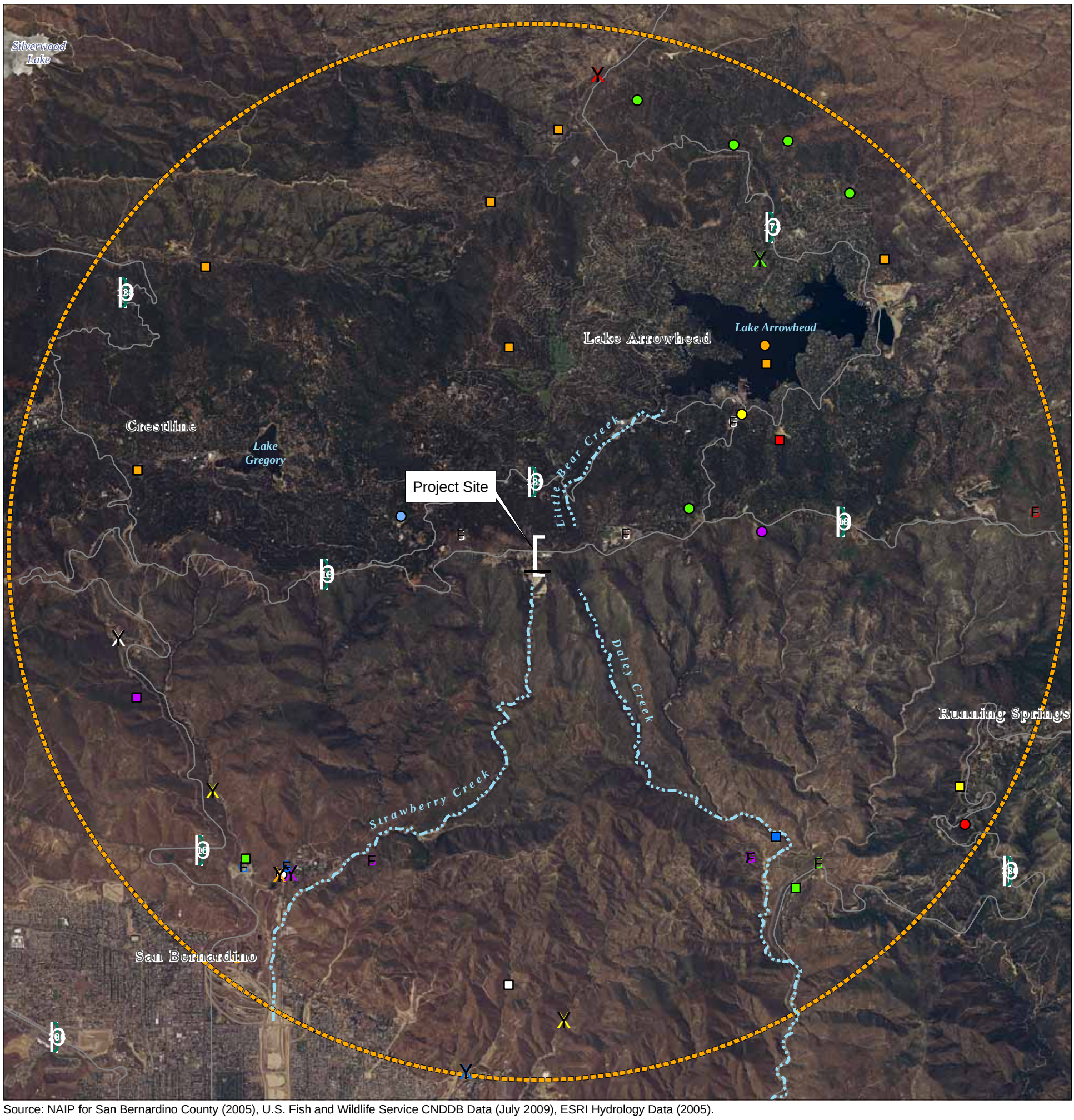
Source: NAIP for San Bernardino County (2005), ESRI Hydrology Data (2005).

Michael Brandman Associates

NORTH

2,000 1,000 0 2,000 Feet

Exhibit 4
Sub-Watersheds Affected by Project Alternatives



Source: NAIP for San Bernardino County (2005), U.S. Fish and Wildlife Service CNDDB Data (July 2009), ESRI Hydrology Data (2005).

Project Site

Drainages Impacted by Project Alternatives

Major Highways

5 Mile Radius

CNDDB Occurrances (Common Name, Scientific Name)

- American badger, Taxidea taxus
- Andrew's marble butterfly, Euchloe hyantis andrewsi
- Hall's monardella, Monardella macrantha ssp. hallii
- Laguna Mountains jewel-flower, Streptanthus bernardinus
- Nevin's barberry, Berberis nevinii
- Parish's yampah, Perideridia parishii ssp. parishii
- Parry's spineflower, Chorizanthe parryi var. parryi
- Plummer's mariposa-lily, Calochortus plummerae
- San Bernardino Mountains owl's-clover, Castilleja lasiorhyncha
- San Bernardino flying squirrel, Glaucomys sabrinus californicus
- San Gabriel Mtns slender salamander, Batrachoseps gabrieli
- Santa Ana sucker, Catostomus santaanae
- Sierra Madre yellow-legged frog, Rana muscosa
- Sonoran maiden fern, Thelypteris puberula var. sonorensis
- Southern Sycamore Alder Riparian Woodland, Southern Sycamore Alder Riparian Woodland
- black bog-rush, Schoenus nigricans
- coast (San Diego) horned lizard, Phrynosoma coronatum (blainvillii population)
- hot springs fimbristylis, Fimbristylis thermalis
- least Bell's vireo, Vireo bellii pusillus
- lodgepole chipmunk, Neotamias speciosus speciosus
- many-stemmed dudleya, Dudleya multicaulis
- slender-horned spineflower, Dodecahema leptoceras
- southern jewel-flower, Streptanthus campestris
- southern rubber boa, Charina umbratica
- thread-leaved brodiaea, Brodiaea filifolia
- two-striped garter snake, Thamnophis hammondii
- white-eared pocket mouse, Perognathus alticolus alticolus

NORTH

1 0.5 0 1 Mile

Michael Brandman Associates

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Exhibit 5
CNDDB - Recorded Occurrences of Special-Status Species within Five Miles of the Project Site

Source: NAIP for San Bernardino County, US Census Bureau (2000), FEMA NFHL Data (February 2009).

Michael Brandman Associates

NORTH

2,000 1,000 0 2,000 Feet

31380003 • 07/2009 | 6_constraints.mxd

Exhibit 6
Constraints

COUNTY OF SAN BERNARDINO • RIMFOREST DRAINAGE STUDY
DUE DILIGENCE

SECTION 2: ENVIRONMENTAL CHECKLIST

2.1 - Option 1 Environmental Check List

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
1. Aesthetics *Would the Project:*				
a) Have a substantial adverse effect on a scenic vista?	☒	☐	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	☒	☐	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
2. Agriculture Resources *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.* *Would the Project:*				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒
3. Air Quality *Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.* *Would the Project:*				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b) Violate any air quality standard or contribute substantially to an existing or Projected air quality violation?	☒	☐	☐	☐
c) 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 (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☒	☐	☐	☐
4. Biological Resources *Would the Project:*				
a) Have 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 the California Department of Fish and Game (CDFG) or U.S. Fish and Wildlife Service (USFWS)?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFG or USFWS?	☒	☐	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☒	☐	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☒	☐	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☒	☐	☐	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
5. Cultural Resources *Would the Project:*				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐
6. Geology / Soils *Would the Project:*				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☒	☐	☐	☐
ii) Strong seismic ground shaking?	☒	☐	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☒	☐	☐	☐
iv) Landslides?	☒	☐	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☒	☐	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☒	☐	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☒	☐	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
7. Hazards / Hazardous Materials *Would the Project:*				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☒	☐	☐	☐
e) For a Project located within 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 result in a safety hazard for people residing or working the Project area?	☐	☐	☐	☒
f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
8. Hydrology / Water Quality *Would the Project:*				
a) Violate any water quality standards or waste discharge requirements?	☒	☐	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?	☒	☐	☐	☐
c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	☒	☐	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☒	☐	☐	☐
e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☒	☐	☐	☐
f) Otherwise substantially degrade water quality?	☒	☐	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☒	☐	☐	☐
j) Inundation by seiche, tsunami, or mudflow?	☒	☐	☐	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
9. Land Use / Planning *Would the Project:*				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐
c) Conflict with any applicable HCP or natural communities conservation plan?	☒	☐	☐	☐
10. Mineral Resources *Would the Project:*				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
11. Noise *Would the Project result in:*				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☒	☐	☐	☐
e) For a Project located within 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?	☐	☐	☐	☒
f) For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
12. Population / Housing *Would the Project:*				
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
13. Public Services *Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*				
a) Fire Protection?	☐	☐	☒	☐
b) Police Protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐
14. Recreation				
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒
15. Transportation / Traffic *Would the Project:*				
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	☒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
15. Transportation / Traffic (Cont.) *Would the Project:*				
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Result in inadequate parking capacity?	☐	☐	☒	☐
g) Conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	☐	☐	☐	☒
16. Utilities / Service Systems *Would the Project:*				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB)?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider, which serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
17. Mandatory Findings of Significance				
a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects.)	☒	☐	☐	☐
c) Does the Project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

2.2 - Environmental Factors Potentially Affected

Environmental Factors Potentially Affected					
The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.					
☒	Aesthetics	☐	Agriculture Resources	☒	Air Quality
☒	Biological Resources	☐	Cultural Resources	☒	Geology / Soils
☐	Hazards / Hazardous Materials	☒	Hydrology / Water Quality	☒	Land Use / Planning
☐	Mineral Resources	☒	Noise	☐	Population / Housing
☐	Public Services	☐	Recreation	☐	Transportation / Traffic
☒	Utilities / Services Systems	☒	Mandatory Findings of Significance		

2.3 - Option 1 Impact Analysis

Option 1, will be development in three phases. Phase 1 will intercept approximately 51 Acres of the runoff from north of Highway 18, totaling a 64 percent reduction. The total cost to develop Phase 1 would be $2,836,199. Phase 2 will drain approximately 16 acres of the interior part of Rimforest, reducing an additional 30 percent of runoff. The total cost to develop phase 2 would be $908,822. Phase 3 will install a lift pump station to drain an additional four acres within the southern most discharge point at Apache Trail and Blackfoot Trail West, totaling an addition five percent reduction. The total cost for Phase 3 will be $241,643. The total cost for Option 1 will be $3,986,664. A detailed discussion of the phases is described in Section 1.3, *Project Description*.

Development of Option 1 will divert the runoff into Little Bear Creek, which flows through Blue Jay and into Lake Arrowhead (Mojave Watershed). Development of Option 1 will require construction of a storm drain system along SR-18 and inside the community of Rimforest. Option 1 would also be required to construct a retarding basin(s) to avert runoff damage to Blue Jay and structures along Little Bear Creek. With development of the storm drain systems and retarding basin(s), Option 1 will divert a total of approximately 100 acre-feet per year from the Santa Ana River watershed to the Mojave basin watershed. Potential constraints are discussed below.

2.3.1 - Aesthetics

According to the County of San Bernardino General Plan (2007), SR-18 from the City of San Bernardino northeast to the City of Big Bear Lake is designated as a “State Scenic Highway”. The County desires to retain the scenic character of visually important roadways throughout the County. Consequently, development of Option 1 may substantially degrade the existing visual character or quality of SR-18 and its surroundings.

Additionally, development of Option 1 may substantially damage scenic resources, including, but not limited to, trees and rock outcroppings within the designated State Scenic Highway. Development of Option 1 will construct a concrete outlet structure to the existing Daley Creek and a storm drain system on SR-18 and inside the community of Rimforest. Option 1 would also be required to construct a retarding basin(s) directly north of SR-18 to avert runoff damage to Blue Jay and structures along Little Bear Creek. Portions of the storm drain system and retarding basin(s) may be visible from SR-18 and existing trails within the area, which can have a potentially significant impact to scenic resources. Consequently, development of Option 1 could potentially impact scenic resources. Although impacts at this time could be potentially significant, impacts could be reduced to less than significant with mitigation that includes the planting of landscape buffers.

2.3.2 - Air Quality

The proposed drainage diversion area is located in the South Coast Air Basin (SCAB). The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency that provides direction regarding the management of air quality within the region. Development of Option 1 may conflict with SCAQMD's air quality plan. Additionally, during construction-related activities, diesel exhaust and volatile organic compounds (VOC's) will be emitted into the air, which some consider to be objectionable. Therefore, an air quality study is recommended to be prepared in conjunction with the development of Option 1. The air quality study should analyze and address potential impacts relating to the development of Option 1. Thus, potential significant impacts could be reduced to less than significant with mitigation.

2.3.3 - Biological Resources

The County's General Plan designates the existing drainage area as being within a wildlife corridor (Strawberry Creek and Grass Valley Creek Wildlife Corridor). According to the County of San Bernardino General Plan, Strawberry Creek wildlife corridor follows the alignment of Strawberry Creek from approximately the City of San Bernardino northward to the national forest and ultimately connects across the national forest to Corridor 16.

Approximately 77 acres will be diverted from Strawberry Creek's existing drainage. That is approximately 3 percent of the total 2,817 acres watershed area of Strawberry Creek. Due to the low percentage of diversion from Strawberry Creek, it is unlikely that a significant impact on riparian areas downstream will occur. In addition, the areas directly downstream from the project area are very steep and do not contain riparian vegetation. The riparian areas further downstream would likely receive the normal amount of water due to no changes being made in approximately 97 percent of the drainage area and would not have a significant adverse affect on sensitive species downstream within Strawberry Creek (see Exhibit 4 for Strawberry Creek watershed).

Implementation of Option 1 will divert the current runoff from Strawberry Creek wildlife corridor northerly into Little Bear Creek, which flows through Blue Jay and into Lake Arrowhead (Mojave Watershed). Development of Option 1 will require construction of a storm drain system on SR-18 and within the community of Rimforest. Option 1 will also require the construction of a retarding basin(s) to avert runoff damage to Blue Jay and structures along Little Bear Creek. With development of the storm drain systems and retarding basin(s), Option 1 will divert a total of approximately 100 Acre-Feet per year from the Santa Ana River watershed to the Mojave basin watershed. This area contains important riparian habitat and open space should be maintained in this area to preserve habitat values.

Option 1 has the potential to impact several sensitive species within the project site. Species described below include species most likely to be impacted that have been found in similar habitats and elevation as the project site. Since the majority of the area to be impacted includes roadside

drainage improvements, the potential to impact sensitive species is most likely to be low to moderate. A spring survey of the project site and habitat assessment is required to be conducted to determine the potential impacts to rare species, the number and types of trees to be removed, and to quantify the potential impacts per habitat type.

Grass Valley Creek wildlife corridor follows the alignment of Grass Valley Creek from the national forest to its junction with the Mojave River. This area contains riparian habitat and potential habitat for the least Bell's vireo, as well as the Arroyo chub, listed as a "Sensitive Species" by the U.S. Forest Service. The creek serves as dispersion corridor to and from the national forest. This area should be maintained as open space to preserve habitat values and wildlife dispersion.

The Migratory Bird Treaty Act (MBTA) makes it unlawful to pursue, capture, kill, or possess or attempt to do the same to any migratory bird or part, nest, or egg of any such bird listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and the countries of the former Soviet Union. The California Department of Fish and Game (CDFG) administers the California Fish and Game Code 3503 makes it illegal to destroy any birds' nest or any birds' eggs that are protected under the MBTA. Code 3503.5 further protects all birds in the orders Falconiformes and Strigiformes (birds of prey, such as hawks and owls) and their eggs and nests from any form of take. Section 3511 of the Code lists fully protected bird species, where the CDFG is unable to authorize the issuance of permits or licenses to take these species.

There is a potential for nesting birds to utilize the trees within the project area. This is particularly important in mountainous areas due to the amount of trees, cavity-nesting birds and the potential for nesting California State endangered Bald Eagles. Removal of vegetation outside the breeding season (February 15-August 31) will eliminate any impacts to nesting birds. If nesting birds are present within the project footprint or within 250 feet of the project site, they must be avoided until nesting activity is complete (generally February-August), as determined by a qualified biologist. A preconstruction nesting bird survey is recommended seven days prior to any ground or vegetation disturbance between February and August. Any active nests identified shall have a buffer area established within a 100-foot radius (200-feet for birds of prey) of the active nest. Disturbance shall not occur within the buffer area until the biologist determines that the young have fledged. Construction activity may occur within the buffer area at the discretion of the biological monitor.

In addition, development of Option 1 may potentially affect prime habitat for multiple sensitive, threatened, and endangered species, resulting in a potentially significant impact. Thus, surveys are recommended to determine if the potentially significant impacts can be reduced to less than significant with mitigation. Recommended surveys are as follows:

Southern Rubber Boa (*Charina bottae umbratica*) – State Threatened

Southern rubber boa occurs only in the San Bernardino and San Jacinto mountains between 5,000 and 8,000 feet. It is fossorial (burrowing) and is generally associated with moist forests and drainages.

Southern rubber boas are most commonly found in rocky outcrops, rotting logs, and piles of leaves and branches. The project site is within southern rubber boa habitat as mapped in the San Bernardino General Plan (2007).

The California Department of Fish and Game has published draft survey guidelines for southern rubber boa (CDFG 2004). The guidelines include details for site analysis, habitat assessment, permits and notifications, criteria for negative findings, and survey methods. The guidelines detail the requirements for an entire season of surveys including spring surveys and summer evening road surveys. A habitat assessment should be conducted to determine if detail surveys are required within the project site. All habitat assessments and surveys should be conducted by a qualified biologist.

White-eared pocket mouse (Perognathus alticolus alticolus) – DFG Species of Concern

White-eared pocket mouse occurs in ponderosa and Jeffrey pine habitats, and also in mixed chaparral and sagebrush habitats in the San Bernardino mountains. Burrows are constructed in loose soil. It has been observed within the vicinity of the project (CNDDB 2009).

A habitat assessment should be conducted by a qualified biologist within the areas to be disturbed by the project. If the habitat assessment determines that there is potential for impact to white-eared pocket mouse, trapping surveys should be conducted to access if the species will be impacted by construction and improvement of the drainage facilities.

Nevin's barberry (Berberis nevinii) – State Endangered, Federally Endangered

Nevin’s barberry is a shrub found in chaparral and foothill woodland in the San Bernardino Mountains. It is been observed in the vicinity of the project site (CNDDB (2009) 1.3 miles to the northwest from the project site. Surveys for Nevin’s barberry should be conducted during habitat assessment to determine if it is present and has the potential to be impacted within the project site.

San Bernardino Mountains owl's-clover (Castilleja lasiorhyncha) – CNPS 2.2

San Bernardino Mountains owl’s-clover is listed by the CNPS as 2.2. It occurs in meadows and pebble plain within yellow pine forest if the San Bernardino Mountains. Surveys for San Bernardino Mountains owl’s-clover should be conducted during habitat assessment in the spring to determine if it is present and has the potential to be impacted within the project site. This species is not protected under the California Endangered Species Act (CESA) or the federal Endangered Species Act (FESA). However, impacts shall be evaluated per California Environmental Quality Act (CEQA) requirements.

Parish's yampah (Perideridia parishii ssp. parishii) – CNPS 2.2

Parish’s yampah is found in meadows, wetlands, and riparian areas in yellow pine forest. Surveys for Parish’s yampah should be conducted during habitat assessment to determine if it is present and has the potential to be impacted within the project site. This species is not protected under CESA or the FESA. However, impacts shall be evaluated per CEQA requirements.

Laguna Mountains jewel-flower (Streptanthus bernardinus) (CNPS 4.3)

Laguna Mountains jewel-flower is an annual flower that is found in chaparral and yellow pine forest in the San Bernardino Mountains. Surveys for Laguna Mountains jewel-flower should be conducted during habitat assessment in the spring to determine if it is present and has the potential to be impacted within the project site. This species is not protected under the CESA or FESA. However, impacts shall be evaluated per CEQA requirements.

Southern Jewel-flower (Streptanthus campestris) – CNPS 1B.3

Southern jewel-flower is an annual flower that is found in chaparral and yellow pine forest in the San Bernardino Mountains. Surveys for southern jewel-flower should be conducted during habitat assessment in the spring to determine if it is present and has the potential to be impacted within the project site. This species is not protected under the CESA or FESA. However, impacts shall be evaluated per CEQA requirements.

Lodgepole chipmunk (Neotamias speciosus speciosus)

Lodgepole chipmunk occurs on summits of isolated Piute, San Bernardino, and San Jacinto mountains. Usually found in open-canopy forests. Habitat is usually lodgepole pine forests in the San Bernardino Mountains and Chinquapin slopes in the San Jacinto Mountains. The lodgepole chipmunk is not listed by CDFG and is not protected under the CESA or FESA.

Regulatory Requirements

Because the proposed project will impact existing drainages, the project will potentially be under the jurisdiction of the U.S. Army Cops of Engineers (USACE), CDFG, and the Regional Water Quality Control Board (RWQCB). A Jurisdictional Delineation (JD) should be conducted to determine impacts to waters of the U.S. and waters of California. Option 1 will be under the jurisdiction of the Lahontan RWQCB because the storm water will be discharged into Little Bear Creek, which is part of the Mojave River Watershed. The project will potentially be under USACE jurisdiction because Little Bear Creek drains into Arrowhead Lake, which is a traditional navigable waterway with a commerce nexus. On site surveys will be required to determine if the areas to be impacted are considered streambed with bed and bank under the CDFG requirements under section 1600. The project could qualify for USACE Nationwide Permit 41, Reshaping Existing Drainage Ditches, or Nationwide Permit 43, Stormwater Management Facilities. A complete JD will determine if the project is covered under these Nationwide Permits. Thus, potential significant impacts could be reduced to less than significant with mitigation.

2.3.4 - Geology and Soils

The proposed drainage diversion area is within the community of Rimforest, a seismically active region that has experienced large earthquakes in the past. The Waterman Canyon Fault is located approximately 0.66 mile south of Option 1 (Exhibit 6). Consequently, due to the distance, a rupture of a known earthquake fault within the proposed drainage diversion area would be considered

unlikely. However, there is the potential to experience strong seismic ground shaking from an earthquake on one of the region's major faults. According to the Geotechnical Report, groundshaking as a result of a substantial earthquake could severely impact the community of Rimforest, especially the dwellings near the southern edge of town. The slope stability evaluations from both a soil and rock perspective indicated significant failure areas behind the current top of slope. Although quite variable, nearly all of the analyses show current conditions below today's standards (>1.1 F.S.). The addition of a groundwater component during a significant seismic event significantly lowers the values even more.

Although the County of San Bernardino General Plan (2007) shows that the storm drain systems and retarding basin(s) for Option 1 would be located in an area having low to moderate landslide susceptibility, development of the storm drain systems on SR-18 and retarding basin(s) would be located on soil that may potentially become unstable, resulting in on- or off-site landslide, lateral spreading, subsidence or collapse. In addition, a residential unit is located approximately 80 feet west of the proposed outlet to Little Bear Creek. Consequently, increased runoff to Little Bear Creek will increase sedimentation and may potentially cause a landslide to occur at the residence.

According to the Geotechnical Report conducted for the Project, Option 1 will divert runoff to Little Bear Creek, potentially incurring an obligation on part of the County to replace an equal amount of water to the Santa Ana watershed. The runoff would be directed through the Church of the Woods property, which is located on the north side of State Highway 18. The hydrology study map for the project indicated that to alleviate future flooding and the impact on Little Bear Creek; three (3) interconnected basins would be constructed on the Church of the Woods property. Consequently, two borings (B-1 and B-1A) were performed on the Church of the Woods property as part of the Geotechnical Report to analyze soil conditions. The borings encountered alluvium overlying granitic basement rock. The thickness of the alluvium at the boring locations was approximately 13 feet. Groundwater was encountered in boring B-1A at a depth of 28.5 feet below the existing ground surface at the boring location and at a depth of 15.5 feet below the bedrock surface in the boring.

Additionally, there is approximately 2.0 to 15 feet of highly organic topsoil, alluvium, and colluvium overlying the granitic basement rock on the property. The topsoil generally consisted of silty sands with varying amounts of organic materials, fine, medium and, coarse sands; however, the construction of the proposed three (3) basins should not present any adverse condition on the Church of the Woods and/or the adjoining properties. The Geotechnical Report recommended that additional geotechnical / geologic studies should be performed on the Church of the Woods property to properly design the retention basin facilities. Depending on the depth of the proposed basins, groundwater may also be a consideration in the design of the facility.

Additionally, the Geotechnical Report recommended that Option 1-conduct additional groundwater investigations. Monitoring wells should be installed to obtain a better understanding of the hydrology of the Rimforest area. Furthermore, if a significant amount of groundwater is encountered,

de-watering alternatives should be considered in conjunction with the surface water mitigation as proposed.

A significant amount of groundwater might also warrant commercial development of such wells, thereby creating a win-win scenario. Once the hydrology of the Rimforest area is better understood, more detailed slope stability evaluations should be performed. Due to the wide variation of rock quality and the large amount of highly decomposed rock, the analyses should be performed to include both rock stability and soil stability evaluations. The Geotechnical Report also recommend that additional field exploration and sampling be conducted for these analyses, so more specific evaluations can be performed. Building setback lines, if desired, can also be established.

Moreover, the Geotechnical Report suggests that that controlling the surface runoff by re-routing it away for the existing slopes will significantly help the town of Rimforest by reducing the impact of further slope erosion and instability. The storm drain that currently free falls 200+ feet can quickly further scour an already over-steepened area and should be re-routed. Thus, potential significant impacts could be reduced to less than significant with the aforementioned recommendations.

2.3.5 - Hydrology and Water Quality

Development and operation of the proposed drainage diversion area will result in potential short-term and long-term impacts to effluent stormwater. Short-term impacts will occur from construction and grading activities on Highway 18 and Little Bear Creek, which will disturb surface soils as well as remove vegetative cover. This will expose the soil to possible erosion and sedimentation to the local waterways.

Long-term, operational impacts from Option 1 include increased stormwater flow to the Sub-Watershed located directly north of the proposed diversion drainage. Development of Option 1 will redirect the flow of storm runoff to Little Bear Creek, which flows through Blue Jay and into Lake Arrowhead (Mojave Watershed). Consequently, the redirection of stormwater flow may potentially impact existing applicable water quality standards, substantially increase the rate or amount of surface runoff, resulting in flooding on- or off-site, or may exceed the capacity of the existing stormwater drainage systems. Therefore, a preliminary drainage study is recommended to analyze potential stormwater flow impacts at the proposed drainage diversion area.

Additionally, it is recommended that the County of San Bernardino prepare a preliminary water quality management plan (WQMP). The WQMP should identify site design, source control, and best management practices in order to prevent or minimize water pollution from the proposed drainage diversion areas caused by stormwater or urban runoff. It is also recommended that the County complete and file a Notice of Intent (NOI) under the National Pollution Discharge Elimination System (NPDES) permit and submit a Stormwater Pollution Prevention Program (SWPPP) that identifies Best Management Practices (BMPs) with the State Water Resources Control Board.

Diversion of the current runoff within the Rimforest village area will also change Water Rights to the existing runoff pattern. Water Rights are currently claimed by the San Bernardino Valley Municipal Water District. The Water Rights Agreement for Strawberry Creek (south of the proposed diversion location) encompasses the entire south slope of the mountains (approximately 2,817 acres). The runoff from the Rimforest area is approximately 77 acres, which is a small portion of the total 2,817 acres Strawberry Creek watershed that drains into the Santa Ana River. With development of the storm drain systems and retarding basin(s), Option 1 would divert approximately 100 Acre-Feet per year from the Santa Ana River watershed to the Mojave basin watershed, requiring some negotiation on water rights issues with the San Bernardino Valley Municipal Water District.

Moreover, as shown in Exhibit 6, three distinct flood areas are located approximately 0.55 to 2.3-miles northeast and northwest of the proposed diversion drainage area. Development of Option 1 will ultimately increase the 100-Year storm event peak flow rate from the existing 167 CFS to 470 CFS to Little Bear Creek, which will ultimately lead to Lake Arrowhead. The existing downstream channel system is inadequate for the increase in peak flow rate and as a result, will increase impacts to areas located within the Lake Arrowhead 100-year flood zone. Therefore, a preliminary drainage study is recommended to analyze the addition of runoff to potential 100-year flood impacts at Lake Arrowhead, upon development of Option 1. Potentially significant impacts could be reduced to less than significant with the preparation of a hydrology study and WQMP.

2.3.6 - Noise

Construction noise represents a short-term increase in ambient noise levels. Noise impacts from construction activities associated with development of Option 1 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.

Short-term noise impacts could occur during construction activities either from the noise impacts created from the transport of workers and movement of construction materials to and from the drainage site, or from the noise generated onsite during demolition, ground clearing, excavation, grading and construction activities. The residential land uses to the north and south of the drainage area are the sensitive receptors of most concern as they relate to project construction noise. Due to the distance to residential use, development of Option 1 may exceed noise levels outlined in the County of San Bernardino General Plan. Therefore, impacts from construction noise is considered potentially significant. Thus, a noise study is recommended to be prepared and addressed in respect to development of Option 1. Therefore, with the preparation of a noise study, potentially significant impacts could be reduced to less than significant with mitigation.

2.3.7 - Utilities/Service Systems

As discussed previously, long-term operational impacts from development of Option 1 include the diversion of stormwater flow to Little Bear Creek and ultimately to Lake Arrowhead. Consequently,

the redirection of stormwater flow may potentially impact existing applicable water quality standards, substantially increase the rate or amount of surface runoff, resulting in flooding on- or off-site, or may exceed the capacity of the existing stormwater drainage systems. Therefore, a preliminary drainage study is recommended to analyze potential stormwater flow impacts at the proposed drainage diversion areas.

Additionally, it is recommended that the County of San Bernardino prepare a WQMP. The WQMP should identify site design, source control, and best management practices in order to prevent or minimize water pollution from the proposed drainage diversion areas caused by stormwater or urban runoff. It is also recommended that the County complete and file a NOI under the NPDES permit and submit a SWPPP that identifies BMPs with the State Water Resources Control Board. Therefore, potentially significant impacts could be reduced to less than significant with mitigation with the preparation of a WQMP and a SWPPP.

2.3.8 - Recommended Studies for Option 1

- An air quality study is recommended to analyze and address potential air quality impacts relating to the development of Option 1.
- A spring survey of the project site and habitat assessment is required to be conducted to determine the potential impacts to rare species, the number and types of trees to be removed, and to quantify the potential impacts per habitat type.
- Development of Option 1 may potentially affect prime habitat for multiple sensitive, threatened, and endangered species, resulting in a potentially significant impact. Thus, surveys are recommended to determine if the potentially significant impacts can be reduced to less than significant with mitigation. Recommended surveys are as follows:

    - **Southern Rubber Boa (*Charina bottae umbratica*) – State Threatened**
      The CDFG guidelines detail the requirements for an entire season of surveys including spring surveys and summer evening road surveys. A habitat assessment should be conducted to determine if detail surveys are required within the project site. All habitat assessments and surveys should be conducted by a qualified biologist.

    - **White-eared pocket mouse (*Perognathus alticolus alticolus*) – DFG Species of Concern**
      A habitat assessment should be conducted by a qualified biologist within the areas to be disturbed by the project. If the habitat assessment determines that there is potential for impact to white-eared pocket mouse, trapping surveys should be conducted to access if the species will be impacted by construction and improvement of the drainage facilities.

- **Nevin's barberry (*Berberis nevinii*) – State Endangered, Federally Endangered**
  Surveys for Nevin's barberry should be conducted during habitat assessment to determine if it is present and has the potential to be impacted within the project site.

- **San Bernardino Mountains owl's-clover (*Castilleja lasiorhyncha*) – CNPS 2.2**
  Surveys for San Bernardino Mountains owl's-clover should be conducted during habitat assessment in the spring to determine if it is present and has the potential to be impacted within the project site.

- **Parish's yampah (*Perideridia parishii* ssp. *parishii*) – CNPS 2.2**
  Surveys for Parish's yampah should be conducted during habitat assessment to determine if it is present and has the potential to be impacted within the project site.

- **Laguna Mountains jewel-flower (*Streptanthus bernardinus*) (CNPS 4.3)**
  Surveys for Laguna Mountains jewel-flower should be conducted during habitat assessment in the spring to determine if it is present and has the potential to be impacted within the project site.

- **Southern Jewel-flower (*Streptanthus campestris*) – CNPS 1B.3**
  Surveys for southern jewel-flower should be conducted during habitat assessment in the spring to determine if it is present and has the potential to be impacted within the project site.

- Because the proposed project will impact existing drainages, the project will potentially be under the jurisdiction of the USACE, CDFG, and the RWQCB. A JD should be conducted to determine impacts to waters of the U.S. and waters of California. Option 1 will be under the jurisdiction of the Lahontan RWQCB because the storm water will be discharged into Little Bear Creek, which is part of the Mojave River Watershed. The project will potentially be under USACE jurisdiction because Little Bear Creek drains into Arrowhead Lake, which is a traditional navigable waterway with a commerce nexus. On site surveys will be required to determine if the areas to be impacted are considered streambed with bed and bank under the CDFG requirements under section 1600. The project could qualify for USACE Nationwide Permit 41, Reshaping Existing Drainage Ditches, or Nationwide Permit 43, Stormwater Management Facilities. A complete JD will determine if the project is covered under these Nationwide Permits.

- The Geotechnical Report recommended that Option 1 conduct additional geotechnical / geologic studies on the Church of the Woods property to properly design the retention basin facilities. Depending on the depth of the proposed basins, groundwater may also be a consideration in the design of the facility.

- The Geotechnical Report recommended that Option 1-conduct additional groundwater investigations. Monitoring wells should be installed to obtain a better understanding of the hydrology of the Rimforest area. Furthermore, if a significant amount of groundwater is encountered, de-watering alternatives should be considered in conjunction with the surface water mitigation as proposed.

- If a significant amount of groundwater is encountered then it might also warrant commercial development of such wells, thereby creating a win-win scenario. Once the hydrology of the Rimforest area is better understood, more detailed slope stability evaluations should be performed. Due to the wide variation of rock quality and the large amount of highly decomposed rock, the analyses should be performed to include both rock stability and soil stability evaluations.

- The Geotechnical Report also recommend that additional field exploration and sampling be conducted, so more specific evaluations can be performed. Building setback lines, if desired, can also be established.

- A preliminary drainage study is recommended to analyze potential stormwater flow impacts at the proposed Option 1 drainage diversion area and the addition of runoff to potential 100-year flood impacts at Lake Arrowhead.

- It is recommended that the County of San Bernardino prepare a preliminary WQMP. The WQMP should identify site design, source control, and best management practices in order to prevent or minimize water pollution from the proposed drainage diversion areas caused by stormwater or urban runoff. It is also recommended that the County complete and file a NOI under the NPDES permit and submit a SWPPP that identifies BMPs with the State Water Resources Control Board.

- A noise study is recommended to be prepared and addressed in respect to development of Option 1.

2.4 - Option 2 Environmental Check List

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
1. Aesthetics *Would the Project:*				
a) Have a substantial adverse effect on a scenic vista?	☒	☐	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	☒	☐	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
2. Agriculture Resources *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.* *Would the Project:*				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒
3. Air Quality *Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.* *Would the Project:*				
a) Conflict with or obstruct implementation of the applicable air quality plan?`	☒	☐	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or Projected air quality violation?	☒	☐	☐	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) 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 (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☒	☐	☐	☐
4. Biological Resources *Would the Project:*				
a) Have 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 the California Department of Fish and Game (CDFG) or U.S. Fish and Wildlife Service (USFWS)?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFG or USFWS?	☒	☐	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☒	☐	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☒	☐	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☒	☐	☐	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
5. Cultural Resources *Would the Project:*				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐
6. Geology / Soils *Would the Project:*				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☒	☐	☐	☐
ii) Strong seismic ground shaking?	☒	☐	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☒	☐	☐	☐
iv) Landslides?	☒	☐	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☒	☐	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☒	☐	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☒	☐	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
7. Hazards / Hazardous Materials *Would the Project:*				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☒	☐	☐	☐
e) For a Project located within 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 result in a safety hazard for people residing or working the Project area?	☐	☐	☐	☒
f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐
8. Hydrology / Water Quality *Would the Project:*				
a) Violate any water quality standards or waste discharge requirements?	☒	☐	☐	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
8. Hydrology / Water Quality (Cont.) *Would the Project:*				
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?	☒	☐	☐	☐
c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	☒	☐	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☒	☐	☐	☐
e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☒	☐	☐	☐
f) Otherwise substantially degrade water quality?	☒	☐	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☒	☐	☐	☐
j) Inundation by seiche, tsunami, or mudflow?	☒	☐	☐	☐
9. Land Use / Planning *Would the Project:*				
a) Physically divide an established community?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
9. Land Use / Planning (Cont.) *Would the Project:*				
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐
c) Conflict with any applicable HCP or natural communities conservation plan?	☒	☐	☐	☐
10. Mineral Resources *Would the Project:*				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
11. Noise *Would the Project result in:*				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☒	☐	☐	☐
e) For a Project located within 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?	☐	☐	☐	☒
f) For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
12. Population / Housing *Would the Project:*				
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
13. Public Services *Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*				
a) Fire Protection?	☐	☐	☒	☐
b) Police Protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐
14. Recreation				
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒
15. Transportation / Traffic *Would the Project:*				
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	☒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
15. Transportation / Traffic (Cont.) *Would the Project:*				
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Result in inadequate parking capacity?	☐	☐	☒	☐
g) Conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	☐	☐	☐	☒
16. Utilities / Service Systems *Would the Project:*				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB)?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider, which serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
17. Mandatory Findings of Significance				
a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects.)	☒	☐	☐	☐
c) Does the Project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

2.5 - Environmental Factors Potentially Affected

Environmental Factors Potentially Affected					
The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.					
☒	Aesthetics	☐	Agriculture Resources	☒	Air Quality
☒	Biological Resources	☐	Cultural Resources	☒	Geology / Soils
☐	Hazards / Hazardous Materials	☒	Hydrology / Water Quality	☒	Land Use / Planning
☐	Mineral Resources	☒	Noise	☐	Population / Housing
☐	Public Services	☐	Recreation	☐	Transportation / Traffic
☒	Utilities / Services Systems	☒	Mandatory Findings of Significance		

2.6 - Option 2 Impact Analysis

Option 2 would divert runoff from the Strawberry Creek watershed into the Daley Creek watershed, which is apart of the Santa Ana River Watershed. The flow would cross and existing Black Foot Trail, located approximately 1,000 feet below the discharge point. Option 2 will be development in three phases. Phase 1 will intercept approximately 51 Acres of the runoff from north of SR-18, totaling a 64 percent reduction. The total cost to develop phase 1 would be $2,242,566. Phase 2 will drain approximately 16 acres of the interior part of Rimforest, reducing an additional 30 percent of runoff. The total cost to develop phase 2 would be $908,822. Phase 3 will install a lift pump station to drain an additional four acres nearby the southern most discharge point at Apache Trail and Blackfoot Trail West, totaling an addition five percent reduction. The total cost for Phase 3 will be $241,643. The total cost for Option 2 will be $3,393,031. A detailed discussion of the phases is described in Section 1.3, *Project Description*. Potential impacts from development of Option 2 are discussed below.

2.6.1 - Aesthetics

According to the County of San Bernardino General Plan (2007), SR-18 from San Bernardino northeast to the City of Big Bear Lake is designated as a “State Scenic Highway”. The County desires to retain the scenic character of visually important roadways throughout the County. Consequently, development of Option 2 may substantially degrade the existing visual character or quality of SR-18 and its surroundings. Therefore, development of Option 2 will result in a potentially significant impact to the State Scenic Highway.

Additionally, development of Option 2 may substantially damage scenic resources, including, but not limited to, trees and rock outcroppings within the designated State Scenic Highway. Development of Option 2 will construct a concrete outlet structure to Daley Creek. The structure would be anchored to the hillside with either deep cutoff walls or pilings if necessary. The concrete outlet structure may be visible from SR-18 and existing trails within the area, which can have a potentially significant impact to scenic resources. However, potentially significant impacts could be reduced to less than significant with mitigation with a landscape buffer to screen improvements.

2.6.2 - Air Quality

The proposed drainage diversion area is located in the SCAB. The SCAQMD is the air pollution control agency that provides direction regarding the management of air quality within the region. Development of Option 2 may conflict with SCAQMD’s air quality plan. Additionally, during construction-related activities, diesel exhaust and VOC’s will be emitted into the air, which some consider to be objectionable. Therefore, an air quality study is recommended to be prepared in conjunction with the development of Option 2. The air quality study should analyze and address potential impacts as a result of the development of Option 2. Thus, potentially significant impacts could be reduced to less than significant with mitigation with the preparation of an air quality study.

2.6.3 - Biological Resources

The County's General Plan designates the existing drainage area as being within a wildlife corridor (Strawberry Creek and Grass Valley Creek Wildlife Corridor). According to the County of San Bernardino General Plan, Strawberry Creek wildlife corridor follows the alignment of Strawberry Creek from approximately the City of San Bernardino northward to the national forest and ultimately connects across the national forest to Corridor 16.

Approximately 77 acres will be diverted from Strawberry Creek's existing drainage. That is approximately 3 percent of the total 2,817 acres watershed area of Strawberry Creek. Due to the low percentage of diversion from Strawberry Creek, it is unlikely that a significant impact on riparian areas downstream will occur. In addition, the areas directly downstream from the project area are very steep and do not contain riparian vegetation. The riparian areas further downstream would likely receive the normal amount of water due to no changes being made in approximately 97 percent of the drainage area and would not have a significant adverse affect on sensitive species downstream within Strawberry Creek (see Exhibit 4 for Strawberry Creek watershed).

Implementation of Option 2 will divert the current runoff from the Strawberry Creek wildlife corridor into Daley Creek and ultimately southerly into the Santa Ana River Watershed. The existing runoff north of SR-18 will continue to drain into Little Bear Creek and will total 167 CFS from approximately 41 acres. The diverted flow rate of 303 CFS from the Village of Rimforest, including the 51 acres north of SR-18, (which currently flows into the village), will be conveyed into an existing valley location immediately south of SR-18, which connects to Daley Creek. This area contains important riparian habitat and open space should be maintained in this area to preserve habitat values.

According to the County of San Bernardino General Plan (2007), the proposed drainage diversion area will be located in prime Rubber Boa Habitat. The CDFG considers the Rubber Boa as a "threatened species". Additionally, the County of San Bernardino General Plan (2007) designates the proposed drainage area as being within a wildlife corridor (Strawberry Creek Wildlife Corridor). According to the County of San Bernardino General Plan, Strawberry Creek wildlife corridor follows the alignment of Strawberry Creek from approximately the City of San Bernardino northward to the national forest and ultimately connects across the national forest to Corridor 16. This area contains important riparian habitat and open space should be maintained in this area to preserve habitat values. Consequently, development of Option 2 may potentially affect prime habitat for multiple sensitive and threatened species, resulting in a potentially significant impact.

Option 2 has the potential to impact several sensitive species within the project site. Species described below include species most likely to be impacted that have been found in similar habitats and elevation as the project site. Since the majority of the area to be impacted includes roadside drainage improvements, the potential to impact sensitive species is most likely to be low to moderate. A spring survey of the project site and habitat assessment will need to be conducted to determine the

potential impacts to rare species, the number and types of trees to be removed, and to quantify the potential impacts per habitat type. From preliminary assessment, Option 2 would have a reduced impact to native species, as there is not the requirement to install a retaining basin thus having a smaller overall project footprint.

Additionally, the County's General Plan designates the proposed drainage area as being within a wildlife corridor (Strawberry Creek and Grass Valley Creek Wildlife Corridor). According to the County of San Bernardino General Plan, Strawberry Creek wildlife corridor follows the alignment of Strawberry Creek from approximately the City of San Bernardino northward to the national forest and ultimately connects across the national forest to Corridor 16. This area contains important riparian habitat and open space should be maintained in this area to preserve habitat values.

The MBTA makes it unlawful to pursue, capture, kill, or possess or attempt to do the same to any migratory bird or part, nest, or egg of any such bird listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and the countries of the former Soviet Union. The CDFG administers the California Fish and Game Code 3503 makes it illegal to destroy any birds' nest or any birds' eggs that are protected under the MBTA. Code 3503.5 further protects all birds in the orders Falconiformes and Strigiformes (birds of prey, such as hawks and owls) and their eggs and nests from any form of take. Section 3511 of the Code lists fully protected bird species, where the CDFG is unable to authorize the issuance of permits or licenses to take these species.

There is a potential for nesting birds to utilize the trees within the project area. This is particularly important in mountainous areas due to the amount of trees, cavity-nesting birds and the potential for nesting California State endangered Bald Eagles. Removal of vegetation outside the breeding season (February 15-August 31) will eliminate any impacts to nesting birds. If nesting birds are present within the project footprint or within 250 feet of the project site, they must be avoided until nesting activity is complete (generally February-August), as determined by a qualified biologist. A preconstruction nesting bird survey is recommended seven days prior to any ground or vegetation disturbance between February and August. Any active nests identified shall have a buffer area established within a 100-foot radius (200-feet for birds of prey) of the active nest. Disturbance shall not occur within the buffer area until the biologist determines that the young have fledged. Construction activity may occur within the buffer area at the discretion of the biological monitor.

Grass Valley Creek wildlife corridor follows the alignment of Grass Valley Creek from the national forest to its junction with the Mojave River. This area contains riparian habitat and potential habitat for the least Bell's vireo, as well as the Arroyo chub, listed as a "Sensitive Species" by the U.S. Forest Service. The creek serves as dispersion corridor to and from the national forest. This area should be maintained as open space to preserve habitat values and wildlife dispersion.

Development of Option 2 may potentially affect prime habitat for multiple sensitive, threatened, and endangered species, resulting in a potentially significant impact. Recommended surveys are as follows:

Santa Ana Sucker (*Catostomus santaanae*) – Federally Threatened, DFG Species of Concern

Santa Ana sucker is a federally threatened fish that lives in Los Angeles basin south coastal streams including the Santa Ana River and some tributaries. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae. Santa Ana sucker has been observed in Daley Creek approximately 4 miles southeast of the project site (CNDDB 2009). Increased water into the drainage could be beneficial the Santa Ana sucker, however, potential impacts from urban runoff should be analyzed in the WQMP.

Santa Ana speckled dace (Rhinichthys osculus ssp. 3) DFG-SSC

The Santa Ana speckled dace inhabits headwaters of the Santa Ana and San Gabriel Rivers, may be extirpated from the Los Angeles River system. Requires permanent flowing streams with summer water temperatures of 17-20 °C. Usually inhabits shallow cobble and gravel riffle.

Mountain yellow-legged frog (Rana muscosa) Federally Endangered

The federal listing refers to populations in the San Gabriel, San Jacinto and San Bernardino Mountains only. They are always encountered within a few feet of water. Tadpoles may require 2-4 years to complete their aquatic development. In the mountains of southern California, inhabits rocky streams in narrow canyons and in the chaparral belt. From 984 ft. - over 12,000 ft. elevation (370 - 3,660 m.)

Southern Rubber Boa (Charina bottae umbratica) – State Threatened

Southern rubber boa occurs only in the San Bernardino and San Jacinto mountains between 5,000 and 8,000 feet. It is fossorial (burrowing) and is generally associated with moist forests and drainages. Southern rubber boas are most commonly found in rocky outcrops, rotting logs, and piles of leaves and branches. The project site is within southern rubber boa habitat as mapped in the San Bernardino General Plan (2007).

The California Department of Fish and Game has published draft survey guidelines for southern rubber boa (CDFG 2004). The guidelines include details for site analysis, habitat assessment, permits and notifications, criteria for negative findings, and survey methods. The guidelines detail the requirements for an entire season of surveys including spring surveys and summer evening road surveys. A habitat assessment should be conducted to determine if detail surveys are required within the project site. All habitat assessments and surveys should be conducted by a qualified biologist.

White-eared pocket mouse (Perognathus alticolus alticolus) – DFG Species of Concern

White-eared pocket mouse occurs in ponderosa and Jeffrey pine habitats, and also in mixed chaparral and sagebrush habitats in the San Bernardino mountains. Burrows are constructed in loose soil. It has been observed within the vicinity of the project (CNDDB 2009).

A habitat assessment should be conducted by a qualified biologist within the areas to be disturbed by the project. If the habitat assessment determines that there is potential for impact to white-eared pocket mouse, trapping surveys should be conducted to access if the species will be impacted by construction and improvement of the drainage facilities.

Nevin's barberry (Berberis nevinii) – State Endangered, Federally Endangered

Nevin's barberry is a shrub found in chaparral and foothill woodland in the San Bernardino Mountains. It is been observed in the vicinity of the project site (CNDDB (2009) 1.3 miles to the northwest from the project site. Surveys for Nevin's barberry should be conducted during habitat assessment to determine if it is present and has the potential to be impacted within the project site.

San Bernardino Mountains owl's-clover (Castilleja lasiorhyncha) – CNPS 2.2

San Bernardino Mountains owl's-clover is listed by the CNPS as 2.2. It occurs in meadows and pebble plain within yellow pine forest if the San Bernardino Mountains. Surveys for San Bernardino Mountains owl's-clover should be conducted during habitat assessment in the spring to determine if it is present and has the potential to be impacted within the project site. This species is not protected under the California Endangered Species Act or the federal Endangered Species Act. However, impacts must be evaluated per CEQA requirements.

Parish's yampah (Perideridia parishii ssp. parishii) – CNPS 2.2

Parish's yampah is found in meadows, wetlands, and riparian areas in yellow pine forest. Surveys for Parish's yampah should be conducted during habitat assessment to determine if it is present and has the potential to be impacted within the project site. This species is not protected under the California Endangered Species Act or the federal Endangered Species Act. However, impacts must be evaluated per CEQA requirements.

Laguna Mountains jewel-flower (Streptanthus bernardinus) (CNPS 4.3)

Laguna Mountains jewel-flower is an annual flower that is found in chaparral and yellow pine forest in the San Bernardino Mountains. Surveys for Laguna Mountains jewel-flower should be conducted during habitat assessment in the spring to determine if it is present and has the potential to be impacted within the project site. This species is not protected under the CESA or the FESA. However, impacts must be evaluated per CEQA requirements.

Southern Jewel-flower (Streptanthus campestris) – CNPS 1B.3

Southern jewel-flower is an annual flower that is found in chaparral and yellow pine forest in the San Bernardino Mountains. Surveys for southern jewel-flower should be conducted during habitat

assessment in the spring to determine if it is present and has the potential to be impacted within the project site. This species is not protected under the CESA or FESA. However, impacts must be evaluated per CEQA requirements.

Lodgepole chipmunk (Neotamias speciosus speciosus)

Lodgepole chipmunk occurs on summits of isolated Piute, San Bernardino, and San Jacinto mountains. Usually found in open-canopy forests. Habitat is usually lodgepole pine forests in the San Bernardino mountains and Chinquapin slopes in the San Jacinto mountains. The lodgepole chipmunk is not listed by CDFG and is not protected under the CESA or FESA.

Regulatory Requirements

Because the proposed project will impact existing drainages, the project will potentially be under the jurisdiction of the USACE, CDFG, and the RWQCB. A JD should be conducted to determine impacts to waters of the U.S. and waters of California. Option 2 will be under the jurisdiction of the Santa Ana RWQCB because the storm water will be discharged into Daley Creek, which is part of the Santa Ana River Watershed. The project will potentially be under USACE jurisdiction because Little Bear Creek drains into Arrowhead Lake, which is a traditional navigable waterway with a commerce nexus. On site surveys will be required to determine if the areas to be impacted are considered streambed with bed and bank under the CDFG requirements under section 1600. The project could qualify for USACE Nationwide Permit 41, Reshaping Existing Drainage Ditches, or Nationwide Permit 43, Stormwater Management Facilities. A complete JD will determine if the project is covered under these Nationwide Permits. Thus, with preparation of the above surveys and reports, potentially significant impacts could be reduced to less than significant with mitigation.

2.6.4 - Geology and Soils

The proposed drainage diversion area is within the community of Rimforest, a seismically active region that has experienced large earthquakes in the past. The Waterman Canyon Fault is located approximately 0.66 mile south of Option 2 (Exhibit 6). Consequently, due to the distance, a rupture of a known earthquake fault within the proposed drainage diversion area would be considered unlikely. However, there is the potential to experience strong seismic ground shaking from an earthquake on one of the region's major faults.

Additionally, according to the County of San Bernardino General Plan (2007), Option 2 is located within a "mapped existing landslide" area. Development of the concrete outlet structure would be located on soil that is unstable and may potentially become unstable, resulting in on- or off-site landslide, lateral spreading, subsidence or collapse. Consequently, a Geotechnical Report was conducted for the Option 2 and concluded that development of Option 2 would divert runoff away from the Strawberry Creek drainage, down the slope on the south side of Highway 18 just east of Rimforest, and ultimately into the Daley Canyon drainage. This is the least expensive option, and it would result in surface runoff waters remaining within the Santa Ana Watershed.

However, an exploratory boring (B-2) was drilled south of Highway 18 near the proposed runoff diversion. The drill rig, which used an 8-inch diameter, hollow-stem auger, reached refusal at 11 feet below ground surface in dense basement rock. Option 2 was also located near several shear zones and at least one small fault. These features have resulted in areas of crushed and deeply weathered rock on this slope.

The precise path proposed as the runoff diversion location for Option 2 is located near a deeply incised erosion area that has severely damaged the old Daley Canyon Toll Road. A steel gas main, which runs concurrent with the old Daley Canyon Toll Road within this location, is exposed and left poorly supported by erosion that has occurred since the pipeline was installed.

Additionally, a slope stability analysis for Option 2 concluded that the adjacent slope will have adequate static and pseudo-static stability characteristics. However, the addition of groundwater increases the probability of slope failure. The probability for slope failure increased rapidly when groundwater saturations were greater than 38 percent for the entire, 680-foot high slope. Additionally, a second analysis was conducted for Option 2 and assumed a 100-foot high; 60-degree notch would be cut into the toe of the subject slope. The stability analysis indicated that the projected erosion cut at the toe of the larger slope would be very sensitive to groundwater pressure. A 45 percent groundwater saturation within this 100-foot high slope would be expected to result in failure, which would contribute to destabilizing the above slope and potentially setting up conditions for slope failures and landslides that currently exist within the Strawberry Creek drainage.

Therefore, Option 2 will significantly increase erosion at the toe of slope immediately east of Rimforest. Removing support from the toe of the slope will reduce slope stability and could result in creating retrogressing landslide conditions similar to existing conditions in the Strawberry Creek drainage south of Rimforest. Consequently, because of the high probability that runoff redirected to flow along the base of the subject slope would destabilize the slope, and because of the potentially serious consequences of triggering a new retrogressing landslide area, Option 2 is not considered to be feasible from a geotechnical standpoint. Thus, geology is considered to be a potentially significant impact.

2.6.5 - Hydrology and Water Quality

Development and operation of Option 2 will result in potential short-term and long-term impacts to effluent stormwater. Short-term impacts will occur from construction and grading activities on SR-18 and Daley Creek, which will disturb surface soils as well as remove vegetative cover. This will expose the soil to possible erosion and sedimentation to the local waterways.

Long-term, operational impacts from Option 2 include increased stormwater flow to the Sub-Watershed located directly south of the proposed diversion drainage. Development of Option 2 will divert the same area flows in three phases as Option 1. The existing Tract runoff from North of SR-18 would remain draining into Little Bear Creek (167 CFS from 41 Acres). The diverted flow rate of

303 CFS from the Village of Rim Forest, including the 51 Acres north of SR-18, (which currently flows into the village), would be routed to an existing valley located immediately south of Highway 18, which connects to Daley Creek. Consequently, the increased flow rate impact to Daley Creek cannot be handled by the existing Daley Creek drainage system.

Development of Option 2 will also increase erosion at and below the discharge point; however, no structures would be affected. Development of Option 2 can also affect existing applicable water quality standards, and substantially increase the rate or amount of surface runoff, resulting in flooding on- or off-site, or exceed the capacity of the existing stormwater drainage systems. Therefore, due to potential impacts to the Daley Creek drainage system a preliminary drainage study is recommended to analyze potential stormwater flow impacts at the proposed drainage diversion area.

The discharge runoff from Option 2 would also require permission from the U.S. Forest Service. Additionally, it is recommended that the County of San Bernardino prepare a WQMP. The WQMP should identify site design, source control, and best management practices in order to prevent or minimize water pollution from the proposed drainage diversion areas caused by stormwater or urban runoff. It is also recommended that the County complete and file a NOI under the NPDES permit and submit a SWPPP that identifies BMPs with the State Water Resources Control Board. Thus, potentially significant impacts could be reduced to less than significant with mitigation with the preparation of a WQMP and SWPPP.

2.6.6 - Noise

Construction noise represents a short-term increase in ambient noise levels. Noise impacts from construction activities associated with development of Option 2 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.

Short-term noise impacts could occur during construction activities either from the noise impacts created from the transport of workers and movement of construction materials to and from the drainage site, or from the noise generated onsite during demolition, ground clearing, excavation, grading and construction activities. The residential land uses to the north and south of the drainage area are the sensitive receptors of most concern as they relate to project construction noise. Consequently, due to the distance to residential use, development of Option 2 may exceed noise levels outlined in the County of San Bernardino General Plan. Therefore, impacts from construction noise is considered potentially significant. Thus, a noise study will be prepared and addressed in respect to development of Option 2. Therefore, potentially significant impacts could be reduced to less than significant with mitigation.

2.6.7 - Utilities/Service Systems

As discussed previously, long-term operational impacts from development of Option 2 include the diversion of stormwater flow to Daley and ultimately into the Santa Ana River Watershed.

Consequently, the redirection of stormwater flow may potentially impact existing applicable water quality standards, substantially increase the rate or amount of surface runoff, resulting in flooding on- or off-site, or may exceed the capacity of the existing stormwater drainage systems. Therefore, a preliminary drainage study is recommended to analyze potential stormwater flow impacts at the proposed drainage diversion areas.

Additionally, it is recommended that the County of San Bernardino prepare a WQMP. The WQMP should identify site design, source control and best management practices in order to prevent or minimize water pollution from the proposed drainage diversion areas caused by stormwater or urban runoff. It is also recommended that the County complete and file a NOI under the NPDES permit and submit a SWPPP that identifies BMPs with the State Water Resources Control Board. Thus, potentially significant impacts could be reduced to less than significant impact with mitigation.

2.6.8 - Recommended Studies for Option 2

- An air quality study is recommended to be prepared in conjunction with the development of Option 2. The air quality study should analyze and address potential impacts as a result of the development of Option 2.
- A spring survey of the project site and habitat assessment will need to be conducted to determine the potential impacts to rare species, the number and types of trees to be removed, and to quantify the potential impacts per habitat type.
- Development of Option 2 may potentially affect prime habitat for multiple sensitive, threatened, and endangered species, resulting in a potentially significant impact. Recommended surveys are as follows:
    - **Santa Ana Sucker (*Catostomus santaanae*) – Federally Threatened, DFG Species of Concern**
      Increased water into the drainage could be beneficial the Santa Ana sucker, however, potential impacts from urban runoff should be analyzed in the WQMP.
    - **Santa Ana speckled dace (*Rhinichthys osculus ssp. 3*) DFG-SSC**
      The Santa Ana speckled dace inhabits headwaters of the Santa Ana and San Gabriel Rivers, may be extirpated from the Los Angeles River system. Requires permanent flowing streams with summer water temperatures of 17-20 °C. Usually inhabits shallow cobble and gravel riffle.
    - **Mountain yellow-legged frog (*Rana muscosa*) Federally Endangered**
      The federal listing refers to populations in the San Gabriel, San Jacinto and San Bernardino Mountains only. They are always encountered within a few feet of water. Tadpoles may require 2-4 years to complete their aquatic development. In the

mountains of southern California, inhabits rocky streams in narrow canyons and in the chaparral belt. From 984 ft. - over 12,000 ft. elevation (370 - 3,660 m.).

- **Southern Rubber Boa (*Charina bottae umbratica*) – State Threatened**
  The CDFG guidelines detail the requirements for an entire season of surveys including spring surveys and summer evening road surveys. A habitat assessment should be conducted to determine if detail surveys are required within the project site. All habitat assessments and surveys should be conducted by a qualified biologist.

- **White-eared pocket mouse (*Perognathus alticolus alticolus*) – DFG Species of Concern**
  A habitat assessment should be conducted by a qualified biologist within the areas to be disturbed by the project. If the habitat assessment determines that there is potential for impact to white-eared pocket mouse, trapping surveys should be conducted to access if the species will be impacted by construction and improvement of the drainage facilities.

- **Nevin's barberry (*Berberis nevinii*) – State Endangered, Federally Endangered**
  Surveys for Nevin's barberry should be conducted during habitat assessment to determine if it is present and has the potential to be impacted within the project site.

- **San Bernardino Mountains owl's-clover (*Castilleja lasiorhyncha*) – CNPS 2.2**
  Surveys for San Bernardino Mountains owl's-clover should be conducted during habitat assessment in the spring to determine if it is present and has the potential to be impacted within the project site.

- **Parish's yampah (*Perideridia parishii* ssp. *parishii*) – CNPS 2.2**
  Surveys for Parish's yampah should be conducted during habitat assessment to determine if it is present and has the potential to be impacted within the project site.

- **Laguna Mountains jewel-flower (*Streptanthus bernardinus*) (CNPS 4.3)**
  Surveys for Laguna Mountains jewel-flower should be conducted during habitat assessment in the spring to determine if it is present and has the potential to be impacted within the project site.

- **Southern Jewel-flower (*Streptanthus campestris*) – CNPS 1B.3**
  Surveys for southern jewel-flower should be conducted during habitat assessment in the spring to determine if it is present and has the potential to be impacted within the project site.

- Because the proposed project will impact existing drainages, the project will potentially be under the jurisdiction of the USACE, CDFG, and the RWQCB. A JD should be conducted to determine impacts to waters of the U.S. and waters of California. Option 2 will be under the jurisdiction of the Santa Ana RWQCB because the storm water will be discharged into Daley Creek, which is part of the Santa Ana River Watershed. The project will potentially be under USACE jurisdiction because Little Bear Creek drains into Arrowhead Lake, which is a traditional navigable waterway with a commerce nexus. On site surveys will be required to determine if the areas to be impacted are considered streambed with bed and bank under the CDFG requirements under section 1600. The project could qualify for USACE Nationwide Permit 41, Reshaping Existing Drainage Ditches, or Nationwide Permit 43, Stormwater Management Facilities. A complete JD will determine if the project is covered under these Nationwide Permits.
- A preliminary drainage study is recommended to analyze potential stormwater flow impacts at the proposed drainage diversion area.
- Discharge runoff from Option 2 would require permission from the U.S. Forest Service.
- It is recommended that the County of San Bernardino prepare a WQMP. The WQMP should identify site design, source control, and best management practices in order to prevent or minimize water pollution from the proposed drainage diversion areas caused by stormwater or urban runoff. It is also recommended that the County complete and file a NOI under the NPDES permit and submit a SWPPP that identifies BMPs with the State Water Resources Control Board.
- A noise study is recommended to address noise impacts in respect to development of Option 2.

SECTION 3: ENVIRONMENTAL DETERMINATION

Both options would not have potential impacts to agricultural resources, hazards/hazardous materials, mineral resources, population and housing, public services, recreation, and transportation. However, both options potentially have impacts to aesthetic resources, air quality, biology, geology, hydrology, noise, land use and planning, and utilities. Potential impacts from both projects are similar with air quality, noise, land use and planning, and utilities. Potential impacts related to aesthetics, biology, geology and hydrology are slightly different.

Option 1 was chosen as the primary development due its contribution to the least amount of impacts, specifically impacts related to geology. The following supports the aforementioned conclusion.

Aesthetics

Development of Option 2 could potentially have a greater impact to aesthetic resources since this option includes construction of a concrete outlet structure to Daley Creek. The structure would be anchored to the hillside with either deep cutoff walls or pilings if necessary. The concrete outlet structure may be visible from SR-18 and existing trails within the area, which can have a potentially significant impact to scenic resources. Additionally, according to the Geotechnical Report, a 100-foot high, 60-degree notch would be cut into the toe of the adjacent slope for slop stability. Consequently, portions of the storm drain system and the cut hillside may be visible from SR-18 and existing trails within the area, which can have a potentially significant impact to scenic resources. Consequently, development of Option 2 could potentially have greater impacts to scenic resources since improvements are more visible.

Biology

From preliminary assessment, Option 2 would have a smaller impact to native species, as there is not the requirement to install a retaining basin thus having a smaller overall project footprint. However, the County's General Plan designates the proposed drainage area as being within a wildlife corridor (Strawberry Creek and Grass Valley Creek Wildlife Corridor). This area contains important riparian habitat and open space that should be maintained in this area to preserve habitat values.

Grass Valley Creek wildlife corridor follows the alignment of Grass Valley Creek from the national forest to its junction with the Mojave River. This area contains riparian habitat and potential habitat for the least Bell's vireo, as well as the Arroyo chub, listed as a "Sensitive Species" by the U.S. Forest Service. The creek serves as dispersion corridor to and from the national forest. This area should be maintained as open space to preserve habitat values and wildlife dispersion.

Development of Option 1 may potentially affect prime habitat for multiple sensitive, threatened, and endangered species, resulting in a potentially significant impact. Species that may potentially be affected include the Santa Ana Sucker, Santa Ana speckled dace, Mountain yellow-legged frog, Southern Rubber Boa, White-eared pocket mouse, Nevin's barberry, San Bernardino Mountains

owl's-clover, Parish's yampah, Laguna Mountains jewel-flower, Southern Jewel-flower and the Lodgepole chipmunk.

Geology

Development and operation of Option 2 will significantly increase erosion at the toe of slope immediately east of Rimforest, requiring the removal of the toe and consequently reducing support from the toe of the slope and ultimately reducing slope stability. Removal of the toe could result in creating retrogressing landslide conditions similar to existing conditions in the Strawberry Creek drainage south of Rimforest. Therefore, because of the high probability that runoff redirected to flow along the base of the subject slope could destabilize the slope, and because of the potentially serious consequences of triggering a new retrogressing landslide area, Option 2 is not considered to be feasible from a geotechnical standpoint.

Hydrology

Long-term, operational impacts from Option 2 include increased stormwater flow to the Sub-Watershed located directly south of the proposed diversion drainage. Development of Option 2 will divert the same area flows in three phases as Option 1. The existing Tract runoff from North of SR-18 would remain draining into Little Bear Creek (167 CFS from 41 Acres). The diverted flow rate of 303 CFS from the Village of Rim Forest, including the 51 acres north of SR-18, (which currently flows into the village), would be routed to an existing valley located immediately south of Highway 18, which connects to Daley Creek. Consequently, the increased flow rate impact to Daley Creek cannot be handled by the existing Daley Creek drainage system. Therefore, due to potential impacts to the Daley Creek drainage system a preliminary drainage study is recommended to analyze potential stormwater flow impacts at the proposed drainage diversion area.

Additionally, because Option 2 will impact existing drainages, the project will potentially be under the jurisdiction of the USACE, CDFG, and the RWQCB. A JD should be conducted to determine impacts to waters of the U.S. and waters of California. Option 2 will be under the jurisdiction of the Santa Ana RWQCB because the storm water will be discharged into Daley Creek, which is part of the Santa Ana River Watershed. The project will potentially be under USACE jurisdiction because Little Bear Creek drains into Arrowhead Lake, which is a traditional navigable waterway with a commerce nexus. On site surveys will be required to determine if the areas to be impacted are considered streambed with bed and bank under the CDFG requirements under section 1600. The project could qualify for USACE Nationwide Permit 41, Reshaping Existing Drainage Ditches, or Nationwide Permit 43, Stormwater Management Facilities. A complete JD will determine if the project is covered under these Nationwide Permits.

Cost Analysis

Although the costs to develop and implement Option 2 ($3,575,021) is slightly less than the costs proposed for Option 1 ($3,986,664), the increased impacts associated with development and operation of Option 1 outweigh the reduced cost.

Conclusion

Development of Option 2 will create significant impacts associated with erosion at the toe of slope immediately east of Rimforest. Because of the high probability that runoff redirected to flow along the base of the subject slope would destabilize the slope, and because of the potentially serious consequences of triggering a new retrogressing landslide area, Option 2 is not considered to be feasible from a geotechnical standpoint. Thus, pursuance of Option 2 may potentially elicit analysis of the potentially significant impacts within an Environmental Impact Analysis (EIR).

However, the slope stability evaluations for Option 1, from both a soil and rock perspective, indicated that nearly all of the analyses show current conditions below today's standards (>1.1 F.S.) and with implementation of the Geotechnical Report's recommendations, impacts are reduced to less than significant levels. Thus, pursuance of Option 1 may potentially elicit analysis of the potentially significant impacts within an Initial Study Mitigated Negative Declaration (IS/MND). Consequently, based on this feasibility study prepared for the proposed project, Option 1 is the preferred alternative.