Department of Water and Power
City of Los Angeles

DRAFT ENVIRONMENTAL IMPACT REPORT

Yellow-billed Cuckoo Habitat Enhancement Plans at Baker Creek and Hogback Creek in Inyo County

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VOLUME 1

January 2006

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State Clearinghouse No.
2005102126

Prepared by:

Los Angeles Department
of Water and Power

Department of Water and Power the City of Los Angeles

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January 27, 2006

To: Interested Persons, Agencies, and Organizations

Subject: Notice of Availability of a Draft Environmental Impact Report for the Yellow-Billed Cuckoo Habitat Enhancement Projects at Baker Creek and Hogback Creek in Inyo County, SCH No. 2005102126

In accordance with the California Environmental Quality Act (CEQA), California Public Resources Code, Section 21000 et seq., the City of Los Angeles Department of Water and Power (LADWP) has completed a Draft Environmental Impact Report (DEIR) for the proposed Yellow-Billed Cuckoo Habitat Enhancement Projects at Baker Creek and Hogback Creek in Inyo County.

Project Description: The proposed project provides for the planting and establishment of riparian vegetation; grazing practices that are compatible with riparian vegetation; continued recreational use of the sites with safeguards for resource protection; and a suite of monitoring and adaptive management protocols to guide the enhancement plans over the life of the project.

Project Location: The proposed enhancement projects are located at two sites within Inyo County, the Baker Creek site and the Hogback Creek site. The Baker Creek site is located approximately one mile west of the community of Big Pine. The Hogback Creek site is located seven miles north of the community of Lone Pine.

Public Review Period: The public review period for the DEIR extends from January 31, 2006 to March 17, 2006. The DEIR is available for review on line at http://www.ladwp.com/ladwp/cms/ladwp004156.jsp. The document is also available for review at the following location:

Bishop Branch Library
210 Academy Street
Bishop, CA 93514

Comments on the DEIR must be submitted in writing and received no later than 5:00 p.m., March 17, 2006. Please address all comments to Mr. Charles C. Holloway at 111 N. Hope Street, Room 1044, Los Angeles, CA 90012. Comments may also be faxed to the attention of Mr. Holloway at (213) 367-4710.

Table of Contents

VOLUME 1

List of Figures

List of Tables

List of Appendices

VOLUME 2

EXECUTIVE SUMMARY

This Draft Environmental Impact Report (DEIR) has been prepared pursuant to the California Environmental Quality Act (CEQA) (Section 21000 et seq. of the Public Resources Code) and the CEQA Guidelines (Section 15000 et seq. of the California Code of Regulations). This DEIR evaluates the proposed implementation of habitat enhancement plans for the yellow-billed cuckoo at Baker Creek and Hogback Creek in Inyo County as prepared by Ecosystem Sciences.

Yellow-billed cuckoos (*Coccyzus americanus*) are seasonal neotropical migrant songbirds to Inyo County and nest in riparian habitat between late June-early July and August. This species is listed under the State Endangered Species Act as endangered. Historically, the Hogback Creek site is known to have supported one nesting pair of cuckoos. Nesting has not been detected in recent years. One cuckoo was noted at the Hogback Creek site in 2003, during riparian songbird monitoring. Nesting is also known to have occurred historically at the Baker Creek site, although no cuckoos have been seen at the site since 2000.

The enhancement of yellow-billed cuckoo habitat was identified in a Memorandum of Understanding (MOU) between the City of Los Angeles Department of Water and Power, the County of Inyo, the California Department of Fish and Game, the California State Lands Commission, the Sierra Club and the Owens Valley Committee that was signed in 1997. This issue was also discussed in the Stipulation and Order of 2004 (S&O). This MOU provided resolution to the conflict and settled concerns between the above named parties over the Lower Owens River Project and other provisions of Los Angeles Department of Water and Power's 1991 Environmental Impact Report (EIR) concerning groundwater pumping operations and related activities. The MOU became effective upon the discharge of the Court's writ. The commitments contained in the MOU were made solely for the purpose of resolving the conflicts associated with the EIR. The MOU identified the evaluation of the condition of yellow-billed cuckoo habitat in the riparian woodland areas of Hogback and Baker Creeks, and identified Ecosystem Sciences (ESI) as the designated *Consultant* to prepare the plans. Based on the evaluation, yellow-billed cuckoo habitat enhancement plans were developed by the *Consultant* for these areas that identified reasonable and feasible actions or projects to maintain and/or improve the habitat of the yellow-billed cuckoo.

The MOU further provides that the projects presented in the yellow billed cuckoo habitat enhancement plans prepared by the Consultants will be presented to the Board of Water and Power Commissioners ("Board") for approval and implementation as soon as possible after compliance with CEQA. Additionally, The MOU provides if the Board determines not to implement all or part of any such action or project; it shall set forth its reasons in a resolution of disapproval.

Purpose of this Document

This DEIR addresses the potential environmental impacts that may be associated with the implementation of the MOU Consultant Project. The DEIR has been prepared in

accordance with CEQA. LADWP is the lead agency for the CEQA process and has independently evaluated, directed, and supervised the preparation of this document.

Description of the MOU Consultant Project

The MOU Consultant Project includes the implementation of the final yellow-billed cuckoo enhancement plans for Baker and Hogback Creeks developed by the *Consultant* as identified in the MOU, ESI in association with Dr. Steve Laymon and Otis Bay Ecological Consultants (ESI 2005a, b), and the Baker Creek Plan Addendum (ESI 2005c).

Implementation of these plans would provide habitat enhancement for the yellow-billed cuckoo at two locations within Inyo County. Existing habitat conditions would be maintained and/or improved at each site through the implementation of habitat enhancement projects that include the planting of native riparian vegetation, alteration of grazing practices, amended recreation policies, and altered trails. Construction protocols and practices to be used with the implementation of these plans are included within the impact analysis for each pertaining resource and within the plans and addendum.

Project Alternatives

This DEIR addresses two alternatives to the MOU Consultant Project: the No Project Alternative and the Drip Irrigation Alternative.

The No Project Alternative would likely maintain existing yellow-billed cuckoo habitat in the Hogback and Baker Creek sites. Fires and increasing recreational impacts may further reduce the habitat quality or quantity for yellow-billed cuckoos.

The Drip Irrigation Alternative includes general changes to the monitoring plan for both sites as well as management modifications to the water allocations, the installation of a drip irrigation system and a deferment of grazing in the Brown Exclosure (rather than a permanent exclusion of cattle grazing) at the Baker Creek site. In addition, this Alternative notes that LADWP will not be responsible for unforeseen circumstances that could negatively impact the project. Project responsibility endpoints are also added.

Major Findings and Conclusions

Aesthetic Resources

Implementation of the enhancement plans includes the removal of black locust trees; any negative visual impacts that could be created by the removal of these trees will be avoided by removing them over a period of 8 to 10 years, with native vegetation planted in the cleared areas. As a consequence, the visual changes would be short-lived as native riparian cover will be increasing during the black locust removal program. The black locust snags that will be left in place are an important component of wildlife habitat and a natural visual component of wooded areas, and therefore should not cause an unnatural

visual impact to the view from the roads. As a result, no significant impact to aesthetics is anticipated.

Agricultural Resources

Implementation of the MOU Consultant Project would result in significant impacts to agricultural resources due to the reduction of grazing and the conversion of agricultural lands to non-agricultural uses. The loss of grazing land is considered a significant impact. There are no other vacant LADWP lands available for grazing. Because feasible mitigation to reduce the impact of the loss of agricultural lands is not possible, this impact is considered significant and unavoidable.

Air Quality

The contribution of emissions from construction activities at both sites would be temporary and of short duration, and would not significantly degrade the current air quality; implementation of the MOU Consultant Project would not result in significant impacts related to air quality.

Biological Resources

Construction activities during Project implementation, such as vehicle traffic outside of established roads, trail and fuel break construction, fence installation, and non-native tree removal, will cause the temporary disturbance and permanent loss of upland scrub. These impacts are considered less than significant. Riparian cover impacts associated with the project will be less than significant. In addition, the project will include the planting of riparian vegetation resulting in an increase in and enhancement of riparian habitat. Also, placement of wildlife crossing elements in new fences, implementation of best management practices, including avoidance, construction outside of sensitive habitats, and conducting construction activities in the fall and winter outside of wildlife breeding season, will reduce impacts to general wildlife, wildlife movement corridors, special status plant species, and special status wildlife species, to levels that are less than significant. The MOU Consultant Project would not impact wetland habitat.

Potential impacts to aquatic communities include reduced water flow and alterations in water quality. Construction of new diversions and repairs to existing diversions, as well as removal of non-native trees using heavy equipment, may result in temporary increases in sediment discharges or turbidity and the potential for release of hazardous materials such as fuel or hydraulic fluid into adjacent waterways, and could cause potentially significant population losses of aquatic species. Implementation of BMP measures, including conducting construction activities in the dry would reduce these impacts to levels that are less than significant.

Cultural Resources

Implementation of the MOU Consultant Project, including construction activities, relocation of the ORV trail, fuels management activities, vegetation control, and planting activities, has the potential to disturb cultural resources. Implementation of the cultural

resource protection measures such as avoidance of documented resources would reduce these impacts to a level of less than significant.

Geology and Soils

The MOU Consultant Project would have no impacts to geology or cause the risk of loss, injury or death due to seismic activity. Implementation of the MOU Consultant Project would cause disturbances to topsoil during the construction of the ORV trail and water diversions. Best management practices (BMPs) would be implemented at these limited areas of ground disturbance, resulting in no significant impacts from soil erosion.

Hazards

Implementation of the MOU Consultant Project would require the handling and use of hazardous materials such as fuels, lubricants, and herbicides. Quantities of hazardous materials used onsite would be small with no onsite storage. Use will comply with applicable laws, ordinances, and regulations. Implementation of the MOU Consultant Project, with proper onsite herbicide use and BMPs associated with handling of fuels, lubricants, and herbicides, is expected to result in a less than significant impact to sensitive human or environmental receptors. The MOU Consultant Project includes a firebreak at Baker Creek to manage and control wildland fire that may result under conditions of increased fuels. Increased fuel loads are considered less than significant.

Noise

Construction activities at the proposed sites would result in a short-term, temporary increase in the ambient noise level as a result of the operation of construction equipment; this temporary increase in noise level would be primarily experienced close to the noise source. Noise from these activities would be below the Inyo County land use compatibility requirement. Impacts from noise under the MOU Consultant Project would be less than significant.

Recreation

The MOU Consultant Project will maintain existing recreational opportunities during, and subsequent to, implementation of the enhancement projects. There would be minimal alterations to recreational uses, including re-routing of a small segment of ORV track to maintain a loop trail for ORV users and mountain-bikers, as well as limiting hunting activities somewhat at both sites. These impacts are considered less than significant.

Water Resources

Soil disturbance, and hence the potential for water quality degradation, would be very limited with the MOU Consultant Project; any impacts would be less than significant. As described above under Hazards, use of hazardous materials onsite would also be very limited and carefully managed, and would not result in degradation of water quality. If the Project as finally implemented would disturb more than one acre of ground, LADWP

would prepare and implement a Storm Water Pollution Prevention Plan as required under the state's construction stormwater general permit to mitigate impacts from ground disturbance such that they would be less than significant. Modifications to groundwater, surface drainage patterns, and flood impacts or hazards are also minimal, with less than significant impacts. Surface water supply to downstream users would be reduced 8-17 percent in aggregate (and potentially more to selected users) when streamflows in Baker Creek and Big Pine Creek together are less than 90 percent of normal. This impact is considered significant, and unavoidable.

Summary of Project Impacts and Mitigation

Table A summarizes the potential impacts of the project by resource area, identifies the mitigation measures to be implemented to reduce potential impacts below the level of significance, and shows the level of significance after mitigation.

Table 1.1-1 Summary of Project Impacts and Mitigation

Potential Impact	Mitigation	**Level of Significance after Mitigation [1]**
Aesthetic Resources		
Baker Creek Viewshed. Removal of black locust populations in concert with replanting and recruitment of native vegetation is expected to alter the local views in close proximity of the project sites. At the Baker Creek site, the removal of black locust would take place over an 8 to 10 year time period, the changes in the views from Sugarloaf and Glacier Lodge roads and the Education Center/High school would be gradual. These impacts are considered less than significant.	No mitigation is required.	LTS
Hogback Creek Viewshed. Removal of black locust populations in concert with replanting and recruitment of native vegetation is expected to alter the local views in close proximity of the Hogback Creek project site. At Hogback Creek, the removal of black locust would be minimal, as the views from Moffat Road would likely include the replacement of upland sagebrush with native riparian vegetation along the drainages on the site. These impacts are considered less than significant.	No mitigation is required.	LTS

Potential Impact	Mitigation	**Level of Significance after Mitigation [1]**
Agriculture		
Compliance with Applicable Plans, Contracts, and Policies. The MOU Consultant Project would alter the existing agricultural operations on the Baker Creek and Hogback Creek leases through a combination of constructing exclusion areas and changing grazing periods. The Inyo County General Plan Policies provide for expansion of economic opportunities of agricultural operations, including general support for agricultural production activities, minimization of encroachment from conflicting land uses, and working with LADWP to identify arable lands for crop production. The Project sites are also zoned as "Open Space." The MOU Consultant Project would not conflict with either existing land use policies protecting agricultural resources and operations, or existing zoning protecting open space. This is considered an area of no effect.	No mitigation is required.	NE
Alteration of Grazing Operations. Implementation of the proposed plans would remove 141 acres from grazing and reduce grazing availability for two local livestock operations. Changes in livestock operations at Baker Creek due to implementation of the MOU Consultant Project would contribute to the loss of economically viable farming operations and the conversion of farmland to non-agricultural use. Therefore, the impacts to local operations at Baker Creek are considered to be significant.	No feasible mitigation.	S
Inyo County Cattle Production. Because of the reductions in cattle production, the proposed Project is likely to result in the loss of economically viable farming operations or conversion of farmland to non-agricultural use. Therefore, potential impacts on Inyo County cattle production are considered significant.	No feasible mitigation.	S

Potential Impact	Mitigation	**Level of Significance after Mitigation [1]**
Air Quality		
Construction Impacts. The MOU Consultant Project would temporarily increase emissions of criteria pollutants in the Project Area, including non-attainment pollutants. The contribution of emissions from this Project's activities at both the Baker Creek site and Hogback Creek site will be of short duration, and will be below the significance thresholds selected for this evaluation without additional mitigation measures. Practicable fugitive dust emissions controls necessary to comply with the visible dust narrative criteria (if any) are required to maintain project emissions below a level of significance at either the Baker Creek or Hogback Creek sites. The implementation of the Project will not significantly degrade the current air quality in the vicinity of either Project Area and will not conflict with or obstruct the implementation of any air quality plans. Construction operations will produce minor odors associated with equipment and materials, including diesel fuel, but these odors are not normally considered offensive and will be significantly diluted before reaching residences or congregation areas. Also, given that the emissions are below a level of significance, it is unlikely that the project will contribute to an existing or projected air violation.	No mitigation is required.	LTS
Operational Impacts of the MOU Consultant Project. Only three phases of the Project would carry past the first year of the Project, including the planting phase, the black locust eradication phase, and the irrigation system phase. These activities would produce much lower emissions than the mix of vehicles and equipment needed for the initial construction the ponds and diversion of the Giroux Ditch. Given that the model emission estimates for the first year are below a level of significance, there will be minimal operational impacts resulting from the Project's subsequent years.	No mitigation is required.	LTS
Biological Resources		
Wildlife Habitat. The proposed habitat enhancements on the Baker and Hogback sites would provide for long-term habitat improvements for local and migratory wildlife populations. Creation of the exclosures is expected to allow for areas of dense riparian vegetation, a benefit for may types of migratory songbirds, including the yellow-billed cuckoo. Riparian plantings are expected to create expansive tree cover, and associated nesting sites, foraging cover, and roost sties. Because of the limited nature of riparian habitat within an arid climate, these habitat improvements on these sites are important. Increased riparian cover and density would provide improved habitat conditions for various populations of wildlife, this is an expected benefit of the proposed plans.	No mitigation is required.	B
Upland Scrub Habitat at Baker Creek and Hogback Creek. The temporary disturbance and permanent loss of upland scrub habitat is a negligible fraction of the available upland habitat at the Project Area and within the region; this impact is not significant.	No mitigation is required.	LTS

Potential Impact	Mitigation	**Level of Significance after Mitigation [1]**
Riparian Habitat at Baker Creek and Hogback Creek sites. Implementation of the MOU Consultant Project would likely require trimming and removal of riparian shrubs and trees during fencing installation for the grazing exclosures at both sites. The overhead tree canopy can be left in place. Riparian tree trimming will be limited to the minimum amount practical. Trees and shrubs along the diversions, trail and fence lines will be allowed to re-sprout, and riparian cover within the Baker Creek exclosure will increase due to reduced ORV use. The net loss of riparian cover is expected to be minimal. Therefore, impacts on riparian cover are considered less than significant.	No mitigation is required.	LTS
Baker Creek Aquatic Community. Potential impacts to the Baker Creek aquatic community include reduced water flow and alterations in water quality due to sediment discharges or turbidity. Operation of heavy equipment for construction of the diversions would include the potential for the release of hazardous materials (i.e., fuel, hydraulic fluid, etc.) into the adjacent waterways. The implementation of BMP measures and the fact that construction on diversions will be done under dry conditions would reduce these impacts to levels that are less than significant.	No mitigation is required.	LTS
Aquatic and Riparian Communities of Baker Creek. The enhancement plan for Baker Creek includes supplemental irrigation of new plantings, and diversion of water into two newly created ponds in the Brown Exclosure. Water use is expected to be 635 acre feet per year for the ponds, with additional project related water uses in the Baker Exclosure. The use of this water at the Brown Exclosure and the Baker Exclosure from the Giroux Ditch would result in reduced supplemental flows downstream in Baker Creek. Baker Creek will continue to receive its natural flows. The reduction in supplemental flows is not expected to result in reductions in habitat or habitat quality for aquatic species or result in changes in the composition and recruitment of associated riparian and wetland species downstream of the diversion. Therefore no significant impacts to the aquatic or riparian communities of Baker Creek are expected.	No mitigation is required.	LTS
Wetlands. The proposed enhancement plan for the Baker Creek site includes the construction of two ponds within the proposed Brown Pasture Exclosure. The final configuration and siting of the ponds has not been determined, but the plan specifies that the ponds would total 0.2 acres in size and would range from 50 to 80 feet long and 20 to 40 feet wide, and 0.5 to 3 feet deep. The excavated soils would be placed on the downslope side of the ponds to create a berm. The general area proposed for these ponds is influenced by historic irrigation practices off of the Giroux Ditch. No evidence of hydric soil or wetland hydrology was found during testing indicating the area does not meet the ACOE definition of wetland. Therefore, there will be no impact to wetlands in the area of pond construction.	No mitigation is required.	LTS

Potential Impact	Mitigation	**Level of Significance after Mitigation [1]**
Disturbance of General Wildlife Populations. Some impacts to common wildlife species may occur from the project. Common wildlife species that inhabit, move through, or forage within the habitats at the Baker Creek and Hogback Creek sites, particularly small mammals, reptiles, amphibians, and other fauna of slow mobility would be subject to mortality or displacement. More mobile wildlife species and noise-sensitive species currently using these habitats would be expected to avoid the construction sites and neighboring areas with the initiation of construction activities. All construction activities will avoid disturbance of woodrat (*Neotoma* sp.) nests. Although some impacts may occur from the Project, the minimal loss of wildlife would not reduce the populations of common wildlife species in the region below self-sustaining numbers; impacts would be less than significant.	No mitigation is required.	LTS
Special-Status Plants. Potential impacts to special-status plant species will be avoided and minimized at the Hogback and Baker Creek sites. Locations of existing rare plant habitat will be avoided to the maximum extent possible and potential impacts will be minimized by conducting Project activities outside of the growing season. Rare plant habitats will not be affected by construction as existing habitats will be avoided. Impacts to special-status plant populations are considered to be less than significant.	No mitigation is required.	LTS
Special-Status Wildlife Species. Potential impacts to special-status wildlife species will be avoided at the Baker Creek and Hogback Creek sites primarily by conducting Project activities in the fall and winter outside of the wildlife reproductive season. Potential impacts to special-status nesting birds will be avoided by working in the fall and winter. Black locust trees containing raptor nests will be left in place. Potential impacts of the Project activities on special-status mammals are limited to a burrowing mammal (Owens Valley vole); two bat species that may roost and forage in the Project Areas, and two bat species that are likely to just forage in or over the Project Areas. The Owens Valley vole may be present in grass-dominated habitats (e.g., Baker Creek Pasture). Project activities that may impact the Owens Valley vole include burrow collapse/destruction due to vehicle traffic outside of established roads, barbed-wire fence installation, and non-native tree stump removal. The potential roosting habitat for the pallid bat and long-eared myotis occurs in the riparian forest habitats which are not expected to be impacted by Project activities except for minor branch and tree trimming during fence installation. The removal of locust trees could potentially impact bats if they contain roost locations. Removal of trees in winter will minimize this impact. Foraging habitat for the Townsend's big-eared and spotted bats is expected to increase due to riparian habitat enhancement. Impacts to special-status wildlife species are considered to be less than significant.	No mitigation is required.	LTS

Potential Impact	Mitigation	**Level of Significance after Mitigation [1]**
Wildlife Movement Corridors. Impacts on wildlife movement corridors as a result of the Project would be temporary and minor. The temporary impacts may consist of avoidance of habitual use areas by wildlife due to active construction. Deer are expected to use alternate trails while migratory birds will use alternate loafing or perching and feeding locations. Wildlife crossing elements have been incorporated into the fence design where deer are able to cross by leaping over the top. These deer crossing elements in the fence have greater width between the upright supports and are several inches lower than the fencing on either side. The temporary effects on wildlife movement associated with construction and the potential for alteration wildlife movement corridors are considered less than significant.	No mitigation is required.	LTS
Cultural Resources		
Historical and Archeological Resources. Construction activities, relocation of the ORV trail, fuels management activities, vegetation control, and planting activities associated with the MOU Consultant Project have the potential to disturb cultural resources. Areas will be flagged and avoided while placing fencelines, constructing the ORV trail, and plantings in such a way to prevent disturbance to recorded cultural resources. If necessary, a qualified archaeologist may flag or stake site boundaries prior to planting or installing fence or trail when the location of such resources are in question. In addition, black locust trees occur within the boundaries of archeological sites that represent a cultural landscape element will be treated with herbicide and left in-situ as standing snags in order to avoid the disturbance of cultural resources. Using these precautionary measures, the MOU Consultant Project will result in less than significant impacts to cultural resources.	No mitigation is required.	LTS
Geology and Soils		
Geologic Conditions. Implementation of the proposed plans is not expected to result in a significant affect from the risk of loss, injury or death due to seismic activity. Ground rupture and seismic shaking is foreseeable at both the Baker Creek and Hogback Creek sites; however, the project does not expose people or structures to potential substantial adverse effects and does not involve construction of above-ground buildings or similar infrastructure. The project does not expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault. The MOU Consultant Project does not expose people or structures to potential substantial adverse effects resulting from seismic-related ground failure because no structures are associated with the Project would involve sustain adverse effects if they were damaged.	No mitigation is required.	LTS

Potential Impact	Mitigation	**Level of Significance after Mitigation [1]**
Soils. At the Baker Creek site, there would be minor disturbances to topsoil during grading of the ORV trail, water diversions, and conveyance or storage features. The footprint of fence construction would be mechanically brushed, but topsoil would not be disturbed. Woody vegetation would be removed by hand from the firebreak and ground cover maintained with the existing herbaceous plant material, so no topsoil disturbance would be expected from this activity. Ground cover in the firebreak should be naturally sufficient to prevent accelerated soil erosion. Negligible ground disturbance would be associated with planting of cottonwood and willow, and removal of black locust from the Project Areas. Soil erosion could occur on a temporary basis at each location of disturbance until the ground surface is stabilized. Disturbance is not expected from the potential installation or movement of portable irrigation. Areas disturbed to install or stabilize diversion structures would be revegetated as necessary. The potential for soil erosion from the site would be reduced by several elements of the proposed plans, including revegetation of the sites following construction. In the event that soil disturbance remains above this one acre threshold as final implementation details are developed, a Storm Water Pollution Prevention Plan (SWPPP) would be prepared for the Project and incorporated into final Project plans and specifications, as required by the Construction Activity General Permit administered by the State Water Resources Control Board. This SWPPP will outline project-specific best management practices (BMPs) to minimize both soil erosion and sediment delivery to surface waters on lands disturbed in the course of project construction. The primary BMP used at the site will be revegetation following disturbance as closely in time as practicable. Additional erosion and sediment control BMPs to be used during the course of the Project would be applied as needed (CSQA 2004). Measures are proposed to reduce these impacts to a level that is less than significant.	No mitigation is required.	LTS
Hazards		
Hazardous Materials Use and Handling. Implementation of the proposed habitat enhancement plans will require the routine transport of limited quantities of fuel and herbicide. Fuel use associated with power equipment and vehicles that use petroleum-based fuels and lubricants will be limited, and will primarily occur only during the construction phase of the project. Limited use of herbicides may be necessary for eradication of black locust, control of rangeland weeds, and, in the future, during adaptive management of the site to control invasive non-native plants. Implementation of the MOU Consultant Project, with proper onsite herbicide use and BMPs associated with handling of fuels, lubricants, and herbicides is expected to result in a less than significant impact to sensitive human or environmental receptors.	No mitigation is required.	LTS

Potential Impact	Mitigation	**Level of Significance after Mitigation [1]**
Risk of Fire and Ignition Sources. Implementation of the habitat enhancement plans will require the routine transport of limited quantities of fuel through the Project Area. Fuel use associated with power equipment and vehicles that use petroleum-based fuels and lubricants will be limited and will primarily occur during the construction phase of the project. The project could include the use of motorized equipment for brushing fence lines and firebreaks. Additional ignition sources used during construction could also include heavy equipment and off road vehicle use. To minimize the risk of wildfire due to increased ignition sources in the Project Area, LADWP will implement Best Management Practices for fuel use, transport, disposal, and prevention of accidental releases.	No mitigation is required.	LTS
Risk of Fire and Fuel Loading. Potential project impacts may result from fire fuel loading due to an increase in vegetative growth. Future grazing and wildlife habitat management changes within both the Baker Creek and Hogback Creek sites may increase the volume of fuels, and in turn, increase fire frequency potential. For the Baker Creek site, the following fuels treatment measures have been incorporated to decrease the potential risk of wildland fire to the nearby population. • Firebreak construction along the road adjoining the transmission line that runs between Baker Creek Meadow and Glacier Lodge Road. • Prohibition on burning, firewood cutting or wood gathering without written approval from LADWP, and possibly increased enforcement of the existing prohibition rules on wood gathering/fire-making. • Lessees on both Project sites will not be allowed to burn any part of the Lease without LADWP approval. Any managed burning for the purpose of improving rangeland, wildlife habitat, and/or watershed condition, will be conducted under the direction of LADWP. The implementation of the proposed enhancement plan for yellow-billed cuckoo habitat and the measures to control and manage wildfire are expected to result in a less than significant impact due to the risk of loss, injury or death due to wildfire.	No mitigation is required.	LTS

Potential Impact	Mitigation	**Level of Significance after Mitigation [1]**
Noise		
Noise. Construction activities at the proposed sites would result in a short-term, temporary increase in the ambient noise level which may result in a project-related impact. Based on the acoustical calculations, noise from activities associated with the MOU Consultant Project would be below the Inyo County land use compatibility requirement. Furthermore, because no construction would occur within 500 feet of residences, no mitigation measures would be required. In addition, the types of noise sources associated with the project are relatively common in these rural settings. Therefore, the proposed project would not result in significant impacts due to noise.	No mitigation is required.	LTS
Recreation		
Compliance with Guidance and Regulations Concerning Recreational Use. The Project will be consistent with maintenance of open space designations for recreational areas in Inyo County and it will maintain existing recreational opportunities during, and subsequent to, implementation. The habitat enhancement plans are compatible with Inyo County General Plan goals, policies, and implementation measures for recreation.	No mitigation is required.	LTS
Potential Changes in Recreational Use. Project design includes accommodations to allow current recreation uses, for example fence walk-throughs for foot traffic to enter the exclosure areas, and a new ORV route. Implementation of the proposed plans would not result in significant effects on recreational use or users at either site.	No mitigation is required.	LTS
Potential Increase in Use of Recreational Facilities. Project enhancements may result in increased use of recreational facilities. Such an increase in use would be compatible with the goals of the Inyo County General Plan Open Space Element. Additional visitor capacity in facilities such as the campground at Baker Creek is considered a less than significant impact.	No mitigation is required.	LTS
Re-routing of ORV Tracks. On the Baker Creek site, enhancements will result in re-routing of an ORV trail. ORV access will be maintained through Baker Creek area much as it currently exists and the alteration of existing trails for ORV use is considered to be a less than significant impact.	No mitigation is required.	LTS
Grazing and Hunting Conflicts. Project impacts may result in a conflict between grazing operations and hunting. Hunting will be limited by the presence of grazing livestock but opportunities will not be eliminated. Impacts due to altered hunting opportunities are considered less than significant.	No mitigation is required.	LTS

Potential Impact	Mitigation	**Level of Significance after Mitigation [1]**
Water Resources		
Water Quality Impacts At Baker and Hogback Creeks. The potential for soil erosion includes approximately one acre of ground that would be disturbed at Baker Creek to construct both: 1) the water distribution system consisting of four diversions from Giroux ditch, excavation of two adjacent ponds, and a diversion from Baker Ditch; and 2) the new OHV trail. Ground disturbance would be negligible at Hogback Creek. Because annual rainfall is low, soil infiltration capacity is high, and land surface slopes are relatively flat, only a small amount of soil erosion would be expected from these activities. In addition, the potential to deliver eroded soil to water bodies resulting in water quality impacts is also very low. In the event that land clearing activities for the project still result in more than one acre of land cleared or graded between the Baker Creek and Hogback Creek Project Areas, LADWP would have to obtain coverage from the SWRCB under the Construction General Stormwater Permit. Development of a Storm Water Pollution Prevention Plan (SWPPP) is required by the permit. Suitable adjustments to the specific Erosion and Sediment Control BMPs described in CSQA (2004) would be described in the SWPPP.	No mitigation is required.	LTS
Groundwater Impacts at Baker and Hogback Creeks. The MOU Consultant Project would not require groundwater extraction, and does not alter the soil surface in a way to impede infiltration. Therefore, the Project is not expected to significantly deplete groundwater supplies or interfere with groundwater recharge. Surface water will be locally diverted to provide sufficient irrigation for plant establishment at the Baker Creek site. Diverted water would be directed to the newly planted land areas to provide increased subirrigation, locally raising the elevation of the water table. Where this occurs, groundwater recharge will be locally enhanced. However, the volumes of these diversions are spread over a sufficiently large area such that it is unlikely to result in a detectable alteration of groundwater availability downgradient of the project site.	No mitigation is required.	LTS
Surface Drainage, Floodplain, and Flood Hazard Impacts at Baker and Hogback Creeks. Localized modifications to water distribution over the Baker Creek site would occur, and could continue or be slightly modified as the site is adaptively managed in the future. The new and existing diversions off of two ditches that will be used for the Baker Creek portion of this project will be designed to not impede or redirect flood flows.	No mitigation is required.	LTS

Potential Impact	Mitigation	**Level of Significance after Mitigation [1]**
Portions of the project are at risk of inundation by mudflows. Mudflows are rare events, are natural geomorphic processes on alluvial fans and washes, and native riparian habitats have evolved to recover following such events. Though it is unlikely, the four southern diversions and the ponds at the Baker Creek area, and the fences and plantings at both sites, could be damaged by mudflows. While the financial investment in this project is substantial, it is not so great that LADWP would be unable to repair any damages with minimal effort and expenditure of resources.		
Water Supply Impacts at Baker Creek Project Area. Water for the project would be removed from Giroux ditch. Such a diversion would reduce supplemental water downstream in Baker Creek. The proposed diversion consists of 1.25 cfs during the irrigation season, and 0.5 cfs for the remainder of the year. This volume represents 8 to 11 percent of the water in the Giroux ditch during the height of irrigation season (June – September), and 17 percent of the water diverted in winter. The project will most likely result in a reduction of downstream deliveries of water when runoff is below 90 percent of normal. These downstream water uses that would be affected include riparian and fish flows in Baker Creek, LADWP irrigated pastures, stock water, Inyo County Farm, and the Knight Manor Housing area. Flows in Big Pine Creek would remain unaltered by this component of the project. The plan anticipates that this water would come from the Inyo County Farm's water allocation; however, no agreement has yet been reached. The Big Pine Regreening Project is an Enhancement/Mitigation Project identified in the 1991 EIR for the second Los Angeles Aqueduct as a mitigation measure. The water supply for the proposed action could potentially conflict with the water needs of the Regreening project.	No mitigation for surface water diversions was proposed by the plan.	S
Notes: B Benefit NE No effect LTS Less than significant S Significant		

1.0 INTRODUCTION

This document evaluates the plans prepared by Ecosystem Sciences Incorporated (ESI), Otis Bay Consulting, and Dr. Steven Laymon for the enhancement of yellow-billed cuckoo habitat at two sites in Inyo County. The plans were prepared by the designated *Consultant* (MOU Consultant), as directed by the 1997 Memorandum of Understanding (MOU) between LADWP and various parties. These plans were also discussed in the Stipulation and Order of 2004 (S&O).

In keeping with the 1997 MOU, the implementation of the proposed plans are herein evaluated under CEQA for potential effects on the environment. As the Lead Agency under CEQA, LADWP has determined that implementation of the yellow-billed cuckoo habitat enhancement plans have the potential to significantly effect the environment. This Draft Environmental Impact Report (DEIR) has been prepared to provide objective information to public decision-makers and the general public regarding potential environmental effects of the MOU Consultant Project. Environmental impacts are measured against the baseline physical conditions (Title 14 California Code of Regulations [CCR] 15000 et seq.).

LADWP has proposed an alternative that meets the obligations of the MOU and S&O. Refer to Tables 13.1-1, 13.1-2, and 13.3-1 in Section 13 for a comparison of the MOU Consultant Project and alternatives.

1.1 ENVIRONMENTAL REVIEW PROCESS

LADWP issued a CEQA Notice of Preparation (NOP) (included in Appendix A) to the Governor's Office of Planning and Research (OPR) State Clearinghouse on October 26, 2005. A 30-day comment period was established for the NOP in accordance with CEQA guidelines; this comment period ended on December 1, 2005.

The NOP identified resource areas potentially affected by the proposed plan using the Appendix G of the CEQA Guidelines ("the CEQA Checklist"). This evaluation identified 10 areas for further evaluation in the DEIR, including aesthetic resources, agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards, noise, recreation, and water resources. The NOP determined that no further analysis was required in the evaluation of the following environmental resource areas: land use/planning, mineral resources, population/housing, public services, and transportation/traffic. Issues related to water supply identified under utilities/service systems are addressed in the water resources section of this DEIR.

This DEIR has been released for a 45-day review to the public, including interested individuals, organizations, government representatives, and agencies. LADWP provided notice of the availability of the DEIR with a Notice of Completion sent to the California OPR State Clearinghouse. Following the 45-day public review period, LADWP will prepare a Final EIR that will incorporate and respond to comments received as a result of public review of the DEIR.

1.2 DRAFT EIR CONTENT AND ORGANIZATION

This DEIR consists of 16 chapters, including this introduction (Section 1). Section 2 provides a description of the proposed enhancement project, including the project locations. Sections 3 through 12 describe individual resource areas potentially affected by the MOU Consultant Project, including potential impacts and proposed mitigation measures. Individual resource areas discussed in this DEIR are:

Section	Resource Area
3	Aesthetic Resources
4	Agricultural Resources
5	Air Quality
6	Biological Resources
7	Cultural Resources
8	Geology and Soils
9	Hazards
10	Noise
11	Recreation
12	Water Resources

Project Alternatives are discussed in Section 13, including the No Project Alternative and the Drip Irrigation Alternative. Section 14 contains other topics required by CEQA to be addressed in a DEIR, including an analysis of cumulative impacts that may occur as a result of implementation of the MOU Consultant Project. Section 15 provides a list of persons consulted and document preparers. Section 16 contains acronyms and references used in preparing the DEIR. The NOP and the proposed plans are also included as appendices.

2.0 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

This environmental document addresses implementation of the yellow-billed cuckoo habitat enhancement plans proposed for Baker Creek and Hogback Creek located in Inyo County in the Eastern Sierra of California.

The enhancement of yellow-billed cuckoo habitat was identified in the Memorandum of Understanding (MOU) between the City of Los Angeles Department of Water and Power, the County of Inyo, the California Department of Fish and Game, the California State Lands Commission, the Sierra Club and the Owens Valley Committee that was signed in 1997. The MOU provided resolution to the conflict and settled concerns between the above named parties over the Lower Owens River Project and other provisions of Los Angeles Department of Water and Power's 1991 Environmental Impact Report (EIR) concerning groundwater pumping operations and related activities. The MOU became effective upon the discharge of the Court's writ. The commitments contained in the MOU were made solely for the purpose of resolving the conflicts associated with the EIR.

The MOU identified the evaluation of the condition of yellow-billed cuckoo habitat in the riparian woodland areas of Hogback and Baker Creeks. Based on the evaluation, yellow-billed cuckoo habitat enhancement plans were to be developed for these areas that identified reasonable and feasible actions or projects to maintain and/or improve the habitat of the yellow-billed cuckoo. Enhancement for yellow-billed cuckoo was further discussed in the Stipulation and Order (S&O) dated August 2004.

2.2 PROJECT OBJECTIVES

This DEIR considers the implementation of the habitat enhancement plans developed in keeping with the 1997 MOU and 2004 S&O. The primary objective for this project is LADWP compliance with the1997 MOU and 2004 S&O. These require 1) the evaluation of the plans under CEQA, and 2) consideration by Los Angeles Board of Water and Power Commissioners of the actions and projects recommended by the studies and evaluations [plans] conducted by the MOU consultant.

The underlying purpose of the enhancement plans for the Baker and Hogback Creeks sites is to provide reasonable and feasible actions or projects that would maintain and/or improve habitat conditions for yellow-billed cuckoo. The goal of these plans is to increase the suitability of the areas for yellow-billed cuckoo by creating new riparian habitat and increasing the suitability of existing riparian habitat.

2.3 PROJECT LOCATION

As illustrated on Figure 2.3-1, the project sites are located within Inyo County. The Baker Creek site is located approximately one mile west of the community of Big Pine, and the Hogback site is located seven miles north of the community of Lone Pine.

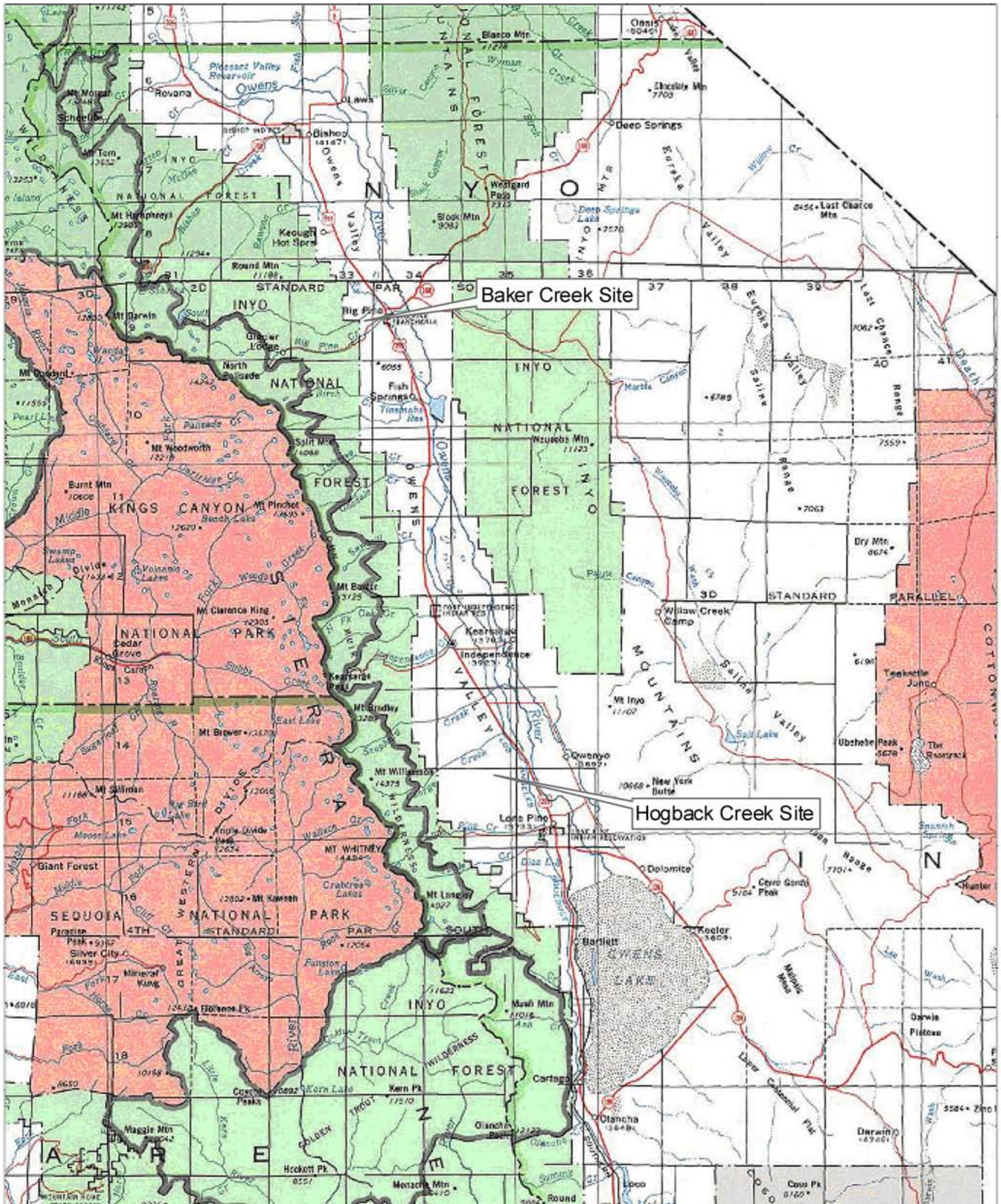

Figure 2.3-1
Vicinity of Baker Creek and Hogback Creek Sites

January 2006

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The Baker Creek site is accessed from Sugarloaf Road and Baker Creek Road and covers 411 acres. Surrounding land uses are open range with seasonal grazing managed by Bureau of Land Management (BLM), United States Forest Service (USFS) and LADWP. Elevation ranges across the site from 1,332 to 1,380 meters (4,370 to 4,525 feet). Bernasconi Education Center and Palisade Glacier High School are located at the western boundary of the project site. The project site is entirely located on the 7.5 minute Big Pine U. S. Geological Survey (USGS) quadrangle.

The Hogback Creek site is accessed from Highway 395 via Moffat Ranch Road which joins Hogback Road at the Hogback Creek crossing (at the southern boundary of the site). This site covers 330 acres, with topography ranging from 1,280 to 1,400 meters (4,200 feet to 4,600 feet). Surrounding land uses are open range with seasonal grazing. The project site is entirely located on the 7.5-minute Manzanar USGS quadrangle.

2.4 MOU CONSULTANT PROJECT

The MOU Consultant Project evaluated in this DEIR includes the implementation of the final yellow-billed cuckoo enhancement plans for Baker Creek and Hogback Creeks (ESI 2005a, b) developed by the *Consultant* as identified in the MOU; ESI in association with Dr. Steve Laymon and Otis Bay Ecological Consultants, and the Baker Creek plan addendum (ESI 2005c). These plans are included in Appendices B, C and D. Figures illustrating the plans are included in Figure 2.4-1 and 2.4-2.

Implementation of these plans would provide habitat enhancement for the yellow-billed cuckoo at two locations within Inyo County. Existing habitat conditions would be maintained and/or improved at each site through the implementation of habitat enhancement actions or projects that include the planting on native riparian vegetation, alteration of grazing practices, amended recreation policies, and altered trails. Construction protocols and practices to be used with the implementation of these plans are included within the impact analysis for each pertaining resource and within the plans and addendum (Appendices B, C and D).

2.4.1 Environmental Protection Measures

The plans and addendum proposed several resource protection measures that would be implemented with both enhancement plans. These include: 1) avoidance of cultural resources, sensitive plants, and other sensitive resources during trail construction, pond construction (at the Baker Creek site), fence construction, and while planting trees; and 2) signage and enforcement measures for inappropriate recreational activities.

During the construction elements of this project, BMPs will be used to control erosion if necessary to ensure the safe handling of hazardous materials.

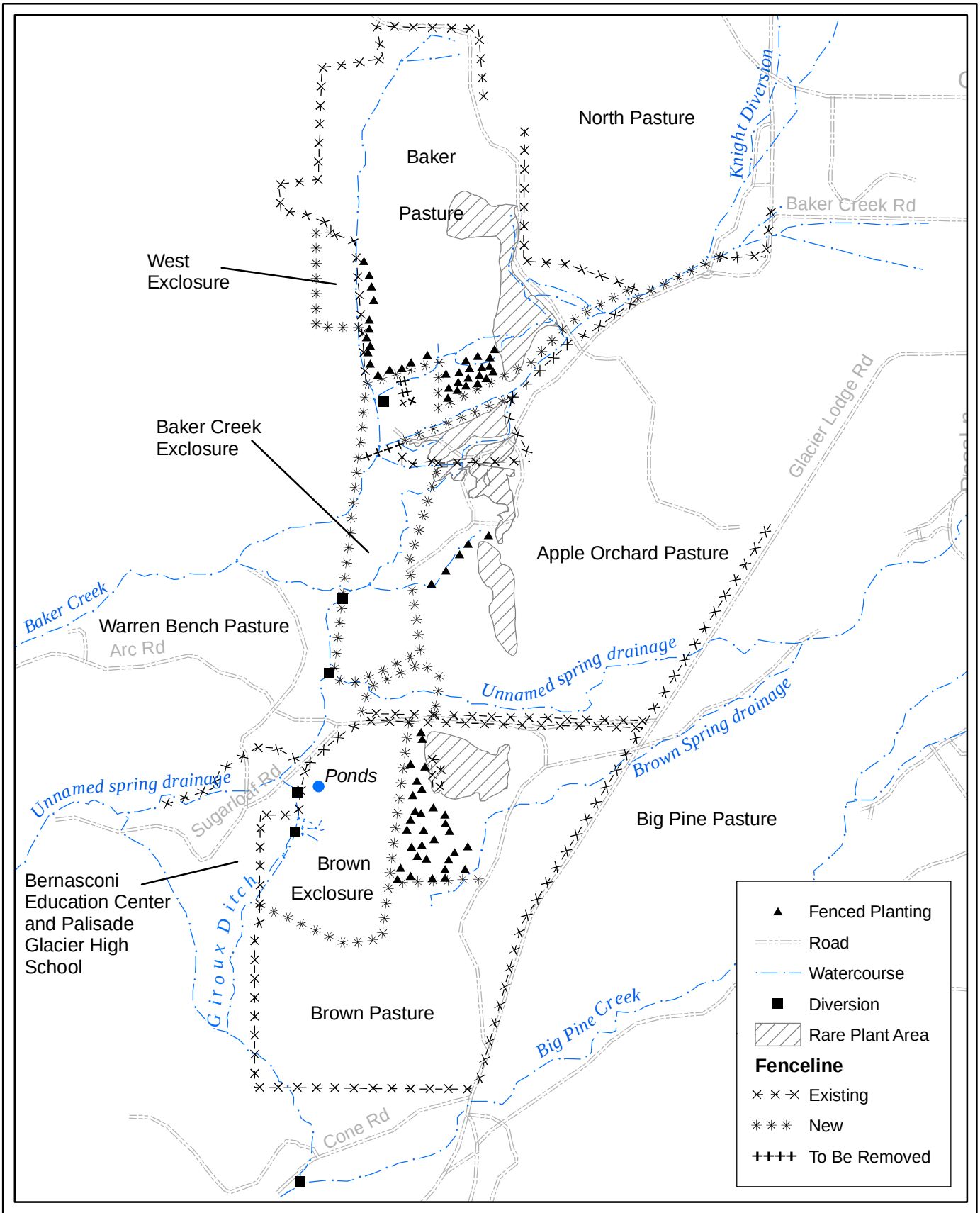

Figure 2.4-1
Proposed Enhancement Elements of Baker Creek Site

Data Source: ESI 2005a

January 2006

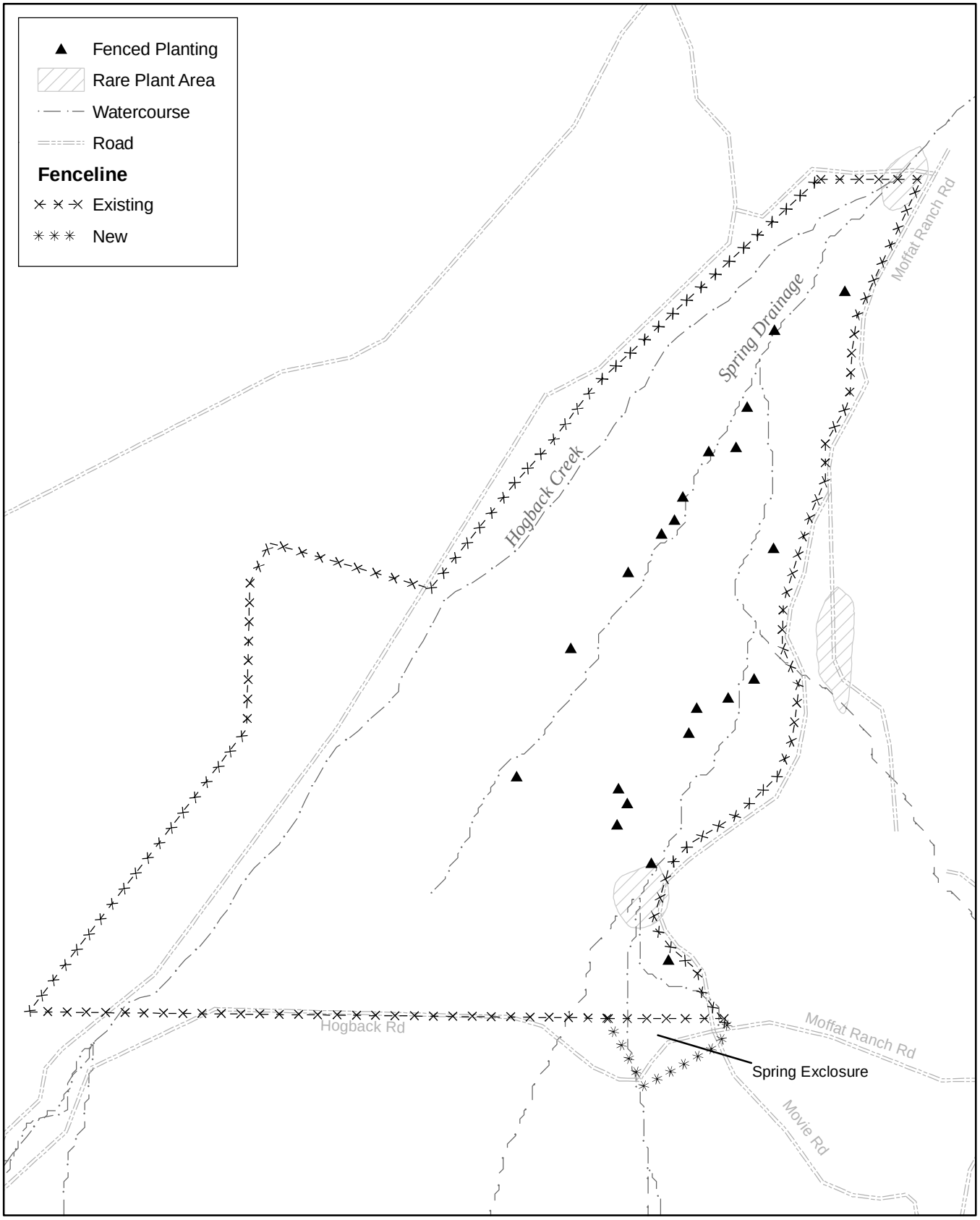

Figure 2.4-2
Proposed Enhancement Elements of Hogback Creek Site

Data Source: ESI 2005b

January 2006

2.4.2 Reviewing Public Agencies and Project Approval

The MOU Consultant Project would require approval for funding and implementation from the City of Los Angeles Board of Water and Power Commission. If the combined disturbed acreage for the Baker Creek and Hogback Creek sites exceeds one acre, a Stormwater Pollution Prevention Plan (SWPPP) may be required from the State Water Resources Control Board. Other agencies that may review this document include: Lahontan Regional Water Quality Control Board, California Department of Fish and Game, California Department of Transportation, U.S. Department of Interior Bureau of Land Management, U.S. Department of Agriculture Forest Service, California State Lands Commission, Inyo County Water Department, and Great Basin Air Pollution Control District. Prior to beginning applicable activities, all appropriate permits will be obtained.

3.0 AESTHETIC RESOURCES

This section characterizes the baseline aesthetic conditions for both the Baker Creek and Hogback Creek sites and assesses project-related alterations of these landscapes that would arise with the implementation of the proposed enhancement plans. This analysis considered Project-related effects using CEQA significance criteria, and concluded that the proposed plans are not likely to cause a significant impact on the environment.

3.1 EXISTING CONDITIONS

Evaluation of visual resources is generally subjective, as sensitivity to change in the visual environment varies and individuals respond differently. The MOU Consultant Project is likely to alter the composition and distribution of riparian and non-native vegetation on the Project sites. The specific timing of these vegetation alterations has not been identified. Visual impacts related to structures, light, or glare are not anticipated with the proposed plans. For these reasons, this EIR addresses visual impacts using a qualitative approach, based on identification of applicable plans and policy followed by narrative and graphic descriptions of each site.

3.1.1 Applicable Plans and Policies

The MOU Consultant Project sites are located on lands owned by LADWP, within Inyo County. The zoning overlay for both sites is Open Space; 40-acre minimum. The Inyo County General Plan designates the area as a Natural Resources planning area.

Inyo County General Plan

The county is undergoing a process to update the General Plan, with completion likely in 2006. The current Inyo County General Plan was adopted on December 11, 2001, and provides goals and policies for aesthetic resources within the county (Inyo County 2001). The applicable goal and supporting policies include the following:

GOAL

VIS-1 Provide and protect resources throughout the county that contribute to the unique visual experience for visitors and quality of life for county residents.

Policy VIS-1.3 Man-made slopes should be treated to reflect natural hillside conditions in the surrounding area.

In addition, the Inyo County General Plan includes several supporting policies for visual resources that direct preservation of the historic character of each community within the county, encourage community design themes, provide for screening of equipment, control direct outdoor advertising, light and glare, and regulate street lighting.

3.1.2 Visual Conditions

Baker Creek

From the site, the eastern slopes of the Sierra Nevada mountain range can be viewed to the west, and the Inyo Mountains across the Owens Valley can be seen to the east. To the south, the views capture the transition from the slopes of the Sierra Nevada Mountains to the Owens Valley floor. To the north, low rounded foothills arise behind the riparian canopy of Baker Creek.

The Baker Creek site is composed of natural vegetation elements including upland Great Basin scrub, groves of black locust (*Robina pseudoacacia*), and riparian cover associated with water features or a high water table. These elements are positioned on a variety of topographic contours over an undulating landscape that ranges from 1,200 to 1,400 meters above mean sea level (USGS 1994). The combination of tree cover and topography conceals most of the site from outside view. The site can be viewed from Glacier Lodge Road, and from Sugarloaf Road and the Bernasconi Educational Center. The following is a characterization of these views.

Glacier Lodge Road Viewshed. The Baker Creek Site is accessed by Glacier Lodge Road, which is located south and east of the site. High bluffs and road cuts obscure Baker Creek from the roadway until the junction of the Brown Spring Drainage and Big Pine Creek (at Cone Road). At these features, obstructions give way allowing travelers a view of the riparian vegetation. The key observation points were established at both of these sites (Figure 3.1-1).

At Brown Spring Drainage, the foreground is composed of Great Basin scrub vegetation with scattered boulders on the bluffs overlooking the drainage. Black locust is visible at the roadside. Riparian vegetation fills the canyon. Rugged mountains frame the view (Figure 3.1-2).

From Cone Road at the Big Pine Creek Bridge, Great Basin sagebrush and boulders cover slopes leading downward towards riparian cover which proceeds northward into the center of the site. This view is more apparent for north-bound traffic on Glacier Lodge Road (Figure 3.1-2).

Sugarloaf Road and Bernasconi Educational Center Viewshed. Sugarloaf Road runs east-west. The road is used for access by the Bernasconi Educational Center and Palisade Glacier High School. The scenery along Sugarloaf Road includes natural vegetation over rolling topography with Great Basin sagebrush and boulder features, stands of black locust, and riparian cover. The key observation points were established to include black locust groves along Giroux Ditch and views of the site from the public access to the education center and high school (Figure 3-1.1).

At the Giroux Ditch, traffic on Sugarloaf passes through a densely wooded stand of black locust mixed with scattered native trees. Native shrubs dominate the roadside along the fence lines. Viewing east from the Bernasconi Center, distant stands of black locust

along the Giroux Ditch can be seen in front of Great Basin sagebrush. The Inyo Mountains can be seen in the background. These views are illustrated in Figure 3.1-3.

Hogback Creek

Hogback Creek is located approximately two miles from Highway 395 and accessed via Moffat Ranch Road. The site is partially obscured from Highway 395 by the Alabama Hills. The site is located on the sloping floor of the Owens Valley with views of the eastern slopes of the Sierra Nevada mountain range arising to the west. This background provides vertical contrast behind the horizontal landscape of the Project site. The Alabama Hills are located to the east and south of the site. Expansive views of Great Basin sagebrush extend to the north and northeast.

Distant views of the site can be seen from Highway 395 for south-bound traffic. The elevations on the site range from 1,280 to 1,400 meters above mean sea level (USGS 1993). Highway 395 is located two miles to the east of the site, at an elevation of 1,150 meters above mean sea level (USGS 1993). The well-removed location from Highway 395, and lack of nearby structures or activity centers within the vicinity of this site, contribute to the site's isolated remote character. Moffat Ranch Road is a dirt road providing access to the Alabama Hills and Hogback Road. Expected road use is low. From Moffat Ranch Road, the site includes views of riparian and wetland vegetation with Great Basin sagebrush in the foreground and the Sierra Nevada Mountains in the background. Typical views of the site are illustrated in Figure 3.1-4.

Scenic Roadways

Scenic roadways are designated by BLM, Inyo National Forest, Caltrans, and the Federal Highway Administration (Inyo 2001). There are no designated scenic roadways within the immediate vicinity of the Project sites. The nearest designated roadway is State Highway 395, located approximately two miles from each site.

State Highway 395 from Fort Independence to Fish Springs Road (mile posts 76.5 to 96.6) has been designated as a State Scenic Highway (Caltrans 2005). Additional portions of State Highway 395 extending south from Fort Independence to State Route 14 near Little Lake and north from Fish Springs Road to State Route 89 near Coleville have been identified as eligible for designation as a State Scenic Highway, but have not been designated (Caltrans 2005). There are no other known scenic roadways within the Project Area.

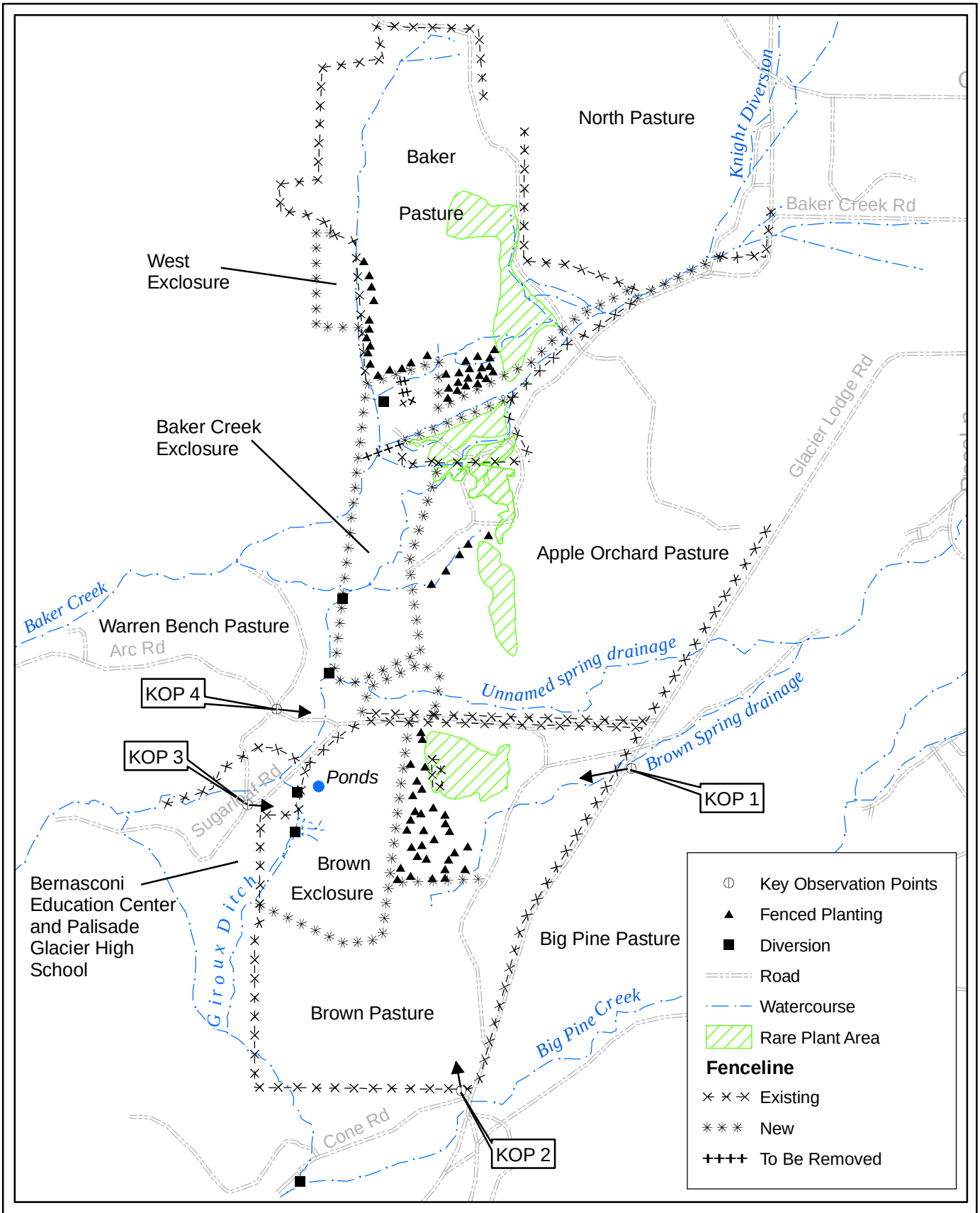

Figure 3.1-1
Baker Creek Key Observation Points

January 2006

Data Source: ESI 2005a

Photo 1: Upland and riparian vegetation from Glacier Lodge Road at Brown Spring Drainage

Photo 2: Riparian vegetation at Baker Creek from Glacier Lodge Road and Cone Road

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Figure 3.1-2
Baker Creek Viewshed
from Glacier Lodge Road

January 2006

Photo 3: View of Baker Creek site from the Bernasconi Education Center

Photo 4: View of black locust groves from Sugarloaf Road at Arc Road

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Figure 3.1-3
Baker Creek Viewshed
from Sugarloaf Road

January 2006

Photo 1: Hogback overview

Photo 2: Hogback vegetation conditions

Figure 3.1-4
Hogback Creek Viewshed

January 2006

3.2 IMPACTS AND MITIGATION

3.2.1 Thresholds of Significance

Significance criteria for impacts to aesthetic resources were developed for this Project based on Appendix G of the CEQA Guidelines. The following criteria were applied:

- Will this Project have a substantial adverse effect on a scenic vista?
- Will this Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- Will this Project substantially degrade the existing visual character or quality of the site and its surroundings?
- Will this Project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

3.2.2 Impact Assessment

Baker Creek Viewshed

The Baker Creek site is well removed from the community of Big Pine and Highway 395. Because of the changes in topography, there is no line of sight between the community of Big Pine and the areas where planting and black locust treatment would occur. These areas are also not visible from the Baker Creek Campground. The planting areas in the Baker Pasture and Apple Orchard Pasture and black locust treatment sites at Baker Creek Pasture cannot be viewed from the public vantage points at the Bernasconi Center and Project roadways. The proposed diversion sites and the wetland ponds cannot be viewed from Project Area roads or the Bernasconi Center. The planting proposed for Brown Pasture and the treatment sites for black locust can be viewed from Sugarloaf Road and the Bernasconi Education Center and/or Glacier Lodge Road.

Planting areas proposed for Brown Pasture would reestablish native vegetation in keeping with historical vegetation composition for the site and current subsurface hydrology. These changes would incorporate additional trees into pastoral views from Sugarloaf Road. Similar changes would be viewed by recreational users on the Apple Orchard Pasture and Baker Creek Pasture. These changes are likely beneficial, and considered less than significant.

The replacement of black locust forest, a non-native species, with native cottonwood-willow forest is a goal of the restoration plan. This will be visible from the Glacier Lodge Road and the Sugarloaf Road. The black locust trees will only be removed from areas where native riparian species will grow. Any negative visual impacts that could be created by removing all the black locust trees at one time will be avoided by removal over a period of 8 to 10 years. Only 10 to 12 percent of the Project Area will be treated each year and only a fraction of the treated area would be visible from Glacier Lodge or Sugarloaf roads. Cottonwood, willow poles and container or root stock plant materials

will be planted within each area cleared of black locust. In some areas, trees and shrubs could be planted before black locust removal occurs if it is determined that they will not be damaged by the removal process (ESI 2005a). As a consequence, the visual changes in the vicinity would be short-lived as native riparian cover will be increasing during the 8-to-10 year black locust removal program. The black locust snags that will be left in place are an important component of wildlife habitat and a natural visual component of wooded areas and therefore should not cause an unnatural visual impact to the view from the roads noted above. As a result, no significant impact to aesthetics is anticipated.

Hogback Creek Viewshed

Implementation of the proposed plan at Hogback Creek would remove a few black locust trees (0.2 acre) from scattered locations throughout the site (ESI 2005b). The plan provides for removal of these trees from the site and follow-up measures to treat potential stump sprouts. The planting elements of the plan are expected to establish native riparian vegetation along two of the waterways within the site boundary. These plantings would supplement the existing riparian cover, creating a contiguous corridor. These changes would take place over several years as the trees become established, and would be partially viewed from Moffat Ranch Road. The resulting effect of these changes could be considered beneficial for travelers on Moffat Ranch Road. While the Project site is remotely visible from Highway 395, a section of highway that is eligible for Scenic Highway status, the changes in vegetation cover would not be discernable. The visual character of the site would continue to be composed of natural vegetation with backgrounds of the Alabama Hills, Sierra Nevada Mountains and sweeping views of Great Basin sagebrush. For these reasons, implementation of the MOU Consultant Project would not result in significant impacts on aesthetic resources.

3.2.3 Significance After Mitigation

Impacts from the implementation of the enhancement plans at Baker Creek and Hogback Creek on aesthetic resources are anticipated to be less than significant.

4.0 AGRICULTURAL RESOURCES

The following discussion presents the existing conditions relative to agricultural resources within the Project Area and an evaluation of potential impacts on these resources that may arise from implementation of the MOU Consultant Project. The description of the existing conditions includes a review of applicable policies and regulations affecting agricultural resources, a description of the regional agricultural economy, and onsite agricultural operations. The analysis of Project-related effects includes potential impacts due to conflicts with policies, regulations, and contracts, as well as potential impacts affecting the viability of onsite agricultural operations.

4.1 EXISTING CONDITIONS

Agricultural production in Inyo County is influenced by local land use plans and policies, the size and structure of the local agricultural economy, and onsite resources. Applicable plans and policies, the regional agricultural economy, and onsite resources supporting current agricultural operations are discussed in the following section.

4.1.1 Applicable Plans and Policies

Inyo County General Plan

The County is undergoing a process to update the General Plan, with completion likely in 2006. The current Inyo County General Plan was adopted on December 11, 2001, and provides goals and policies for agricultural resources within the County. The applicable goal and supporting policies include the following:

GOAL

AG-1 Provide and maintain a viable and diverse agricultural industry in Inyo County.

Policy AG-1.2 Continue Agricultural Production: Support and encourage continued agricultural production activities in the county.

Policy AG-1.3 Conversion of Agricultural Land: Discourage conversions of productive agricultural lands for urban development.

Policy AG-1.4 Minimize Land Conflicts: Preserve and protect agricultural lands from encroachment by incompatible uses.

Policy AG-1.7 LADWP Lands for Agriculture: Work with LADWP to expand the county's agricultural base of cropland on identified arable lands to benefit the agricultural economy.

California Land Conservation Act

Under the provisions of the Williamson Act (California Land Conservation Act of 1965, Section 51200), lands within a designated agricultural preserve can be contracted with a city or county to receive a reduced property tax rate, in exchange for maintaining agricultural or open space land uses on contracted lands. These contracts are self-renewing, and the landowner may notify the county at any time of the intent to withdraw the land from its preserve status. Lands withdrawn from the program maintain a non-renewable status for a ten-year period of tax adjustment to full market value before protected open spaces can be converted to urban uses. Inyo County does not offer a Williamson Act program, and the subject properties are not entered into Williamson Act contracts (DORP 2005).

California Farmland Mapping and Monitoring Program

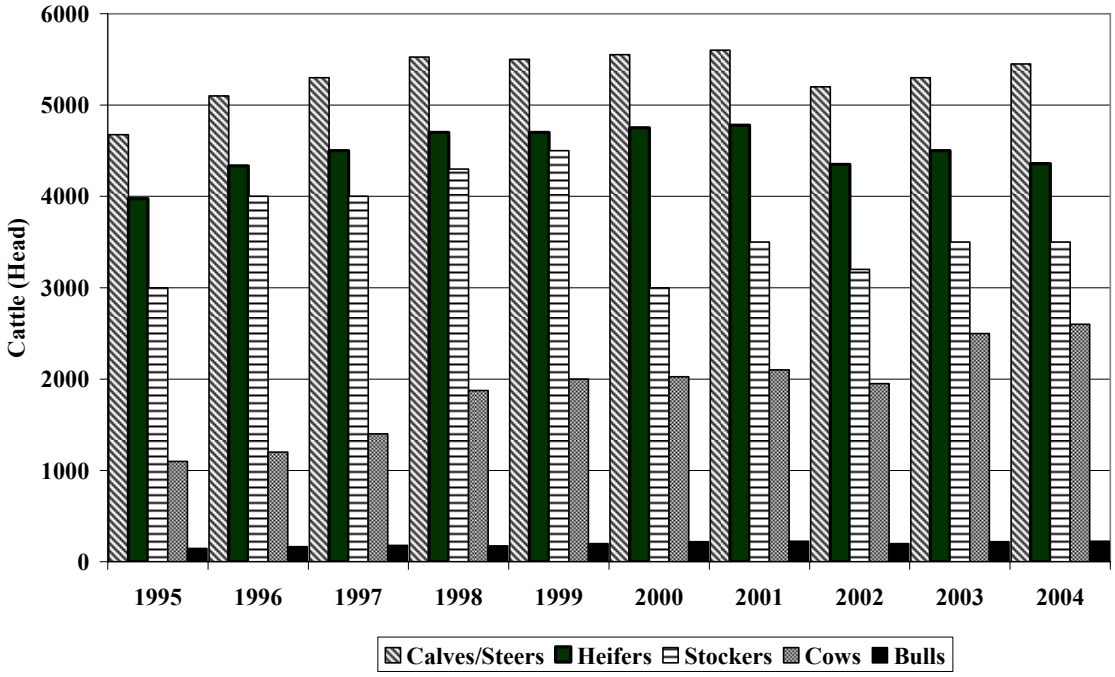
The California Department of Conservation, under the Division of Land Resource Protection, operates the Farmland Mapping and Monitoring Program (FMMP) which monitors the conversion of the state's farmland to and from agricultural use. The mapping program identifies eight classifications and uses a minimum mapping unit size of ten acres. The program also produces biannual reports on the amount of land converted from agricultural to non-agricultural use. The FMMP does not cover Inyo County; therefore, farmland designations and statistics on agricultural land uses are not available for the Project Area.

4.1.2 Regional Agricultural Economy

Inyo County reports agricultural revenues of $14,341,188 for 2004 from livestock, field crops, apiary, and miscellaneous crop production. Livestock account for 55 percent of all agricultural revenues in Inyo County. Livestock revenues are generally from cattle ($7,763,538), but also include some revenue from sheep and lambs ($224,100) (Inyo and Mono Counties Agricultural Commissioner 2005).

The countywide cattle production has averaged 15,336 head over the last ten years. During this time period, average Inyo County cattle production has been approximately 34 percent calves and steers, 29 percent heifers, 22 percent stockers, and 13 percent bulls and cows (Inyo and Mono Counties Agricultural Commissioner 2005). Cattle production over this time period is illustrated in Figure 4.1-1. The USDA reports 45 cattle producers in 2002, and 56 producers in 1997, and 17,897 head of cattle and calves in 2002 and 18,930 cattle and calves in 1997 (USDA 2004). This decline in producers can be attributed to a consolidation of operations with less than 200 head (USDA 2004).

Cattle production in the county is highly dependent on available rangeland. The trend for available rangeland is illustrated in Figure 4.1-2, and has remained constant over recent years at 210,000 acres (Inyo and Mono Counties Agricultural Commissioner 2005) after 20,000 acres were removed from production in 2001. There are no estimates of animal unit months (AUMs) available for Inyo County. An AUM is the amount of forage required to support one cow (with a calf) for the period of one month.

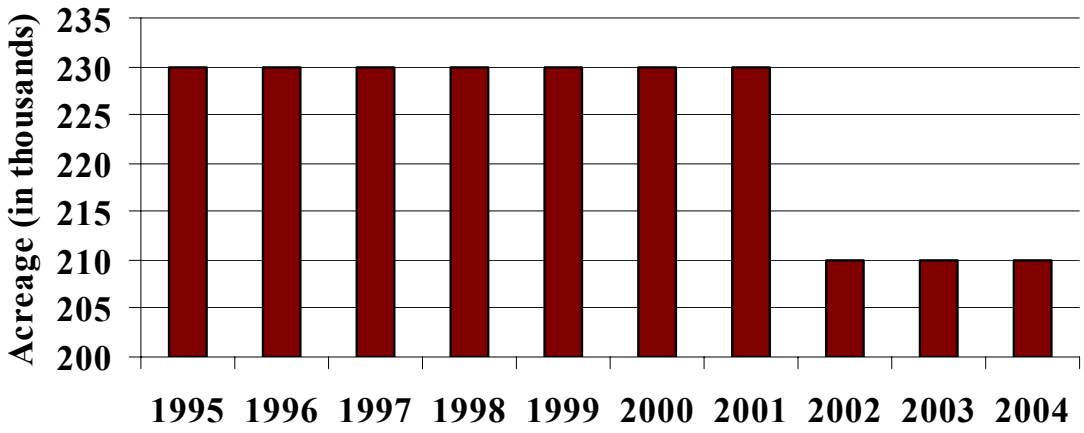


Inyo and Mono Counties Agricultural Commissioner 2005

Figure 4.1-1 Inyo County Cattle Production 1995 to 2004

USDA (2001, 2005) and UCD 2004 provide an economic review of cow-calf operations. These studies are based on surveys of cow-calf operations within selected regions; this evaluation considered data from California and the basin and range region. Cattle prices are assumed to be uniform; however, these studies demonstrate a range of costs for cattle production based on geographic regions. The actual cost of production for local operations at the Project sites is proprietary and may be different from these studies.

Economic viability for cow-calf operations was determined where the minimum reported herd size supported a farming operation as the primary source of income in these studies. Estimates of herd size supporting an economically viable cow-calf operation are reported in each of these studies. USDA 2001 reports a minimum economic unit of 63 cows for farms with sales between $20,000 and $100,000 and 122 cows for farms with sales between $100,000 and $249,999. USDA 2005 reported an average herd size of 170 cows within the basin and range region. UCD reports operations over 200 cows where cattle production is the primary enterprise and source of income. The USDA reports (2001 and 2005) are based on 1996 survey data, and current minimum herd sizes are expected to be larger. These studies indicate a minimum economical operation may include 64 to 200 cows.



Inyo and Mono Counties Agricultural Commissioner 2005

Figure 4.1-2 Inyo County Available Rangeland for Grazing 1995 to 2004

4.1.3 Agricultural Resources within the Project Area

The following describes the agricultural operations associated with each of the proposed Project sites. Additional information on the range conditions for these sites is included in Appendices B and C.

Baker Creek Lease

The Baker Creek lease, which has a 30-day revocable clause (subject to the discretion of the Board of Water and Power Commissioners), covers approximately 750 acres and is used for commercial cattle grazing on a year-round basis. These lands have been grazed under seasonal prescriptions for the past 150 years. Under the current prescriptions, commercial cattle are moved between two pastures, and utilize off-site rangeland areas as well. These pastures are the Baker Creek Pasture and Apple Orchard Pasture. The Brown Pasture is used exclusively by the lessee for purebred registered Beefmaster cattle. The current operator on the site also uses two adjacent federal lands managed by the Bureau of Land Management (BLM): the Warren Bench, Big Pine and North allotments (Figure 4.1-3). When these lands are not available, cattle are moved off site. The current stocking on the allotment is provided in Table 4.1-1; additional information about the current grazing practices is included in Appendix B.

Irrigation water for these pastures is supplied from a diversion on Big Pine Creek into the Giroux Ditch and from a diversion on Baker Creek into the Baker Ditch along the western boundary of each pasture. While the Brown Pasture is not regularly irrigated, leakage and seepage from the ditch contributes to riparian and wetland communities down slope from the ditch. The Baker Creek Pasture includes about 91 acres of irrigated pasture (ESI 2005a).

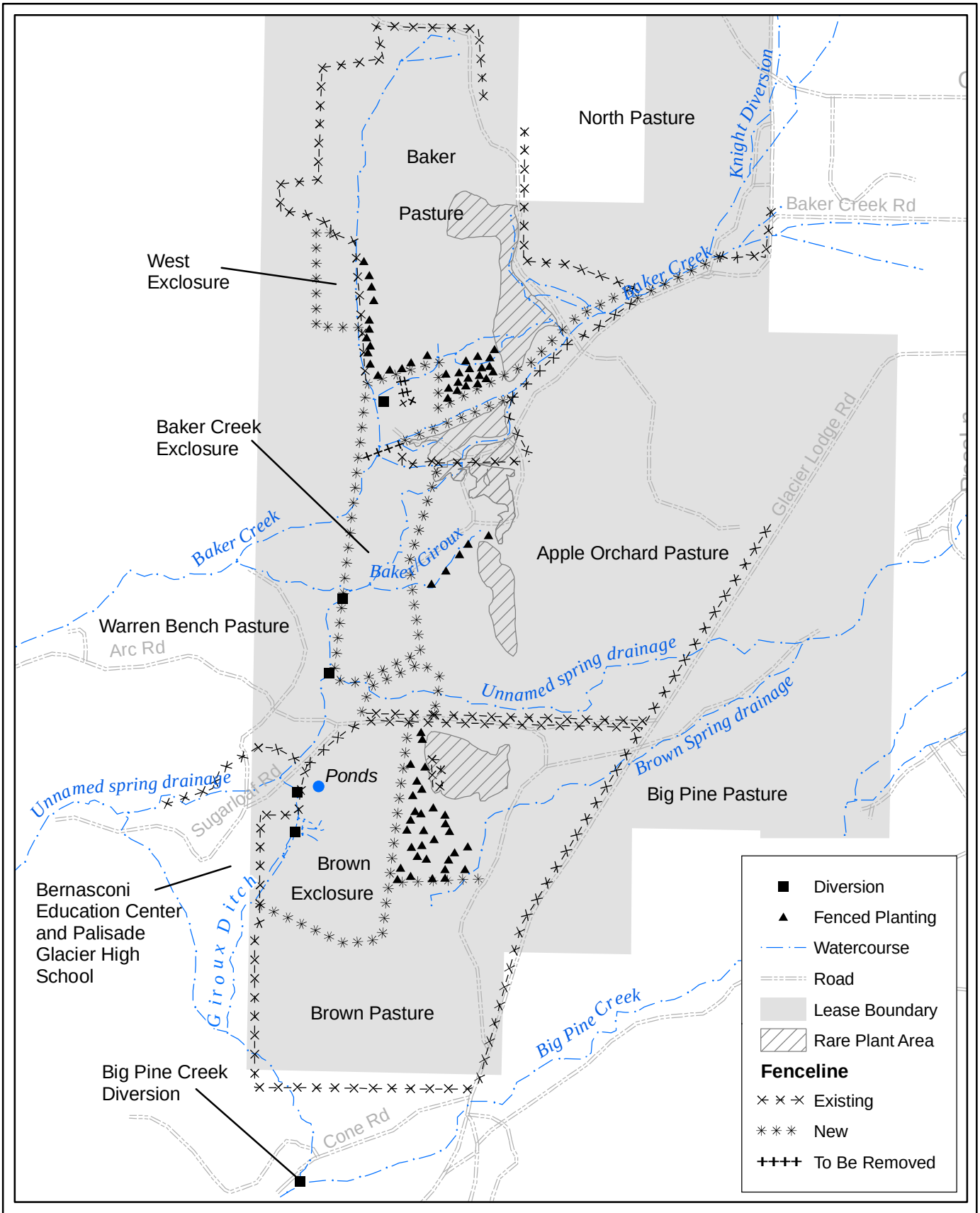


Figure 4.1-3
Baker Creek Lease

January 2006

Data Source: ESI 2005a

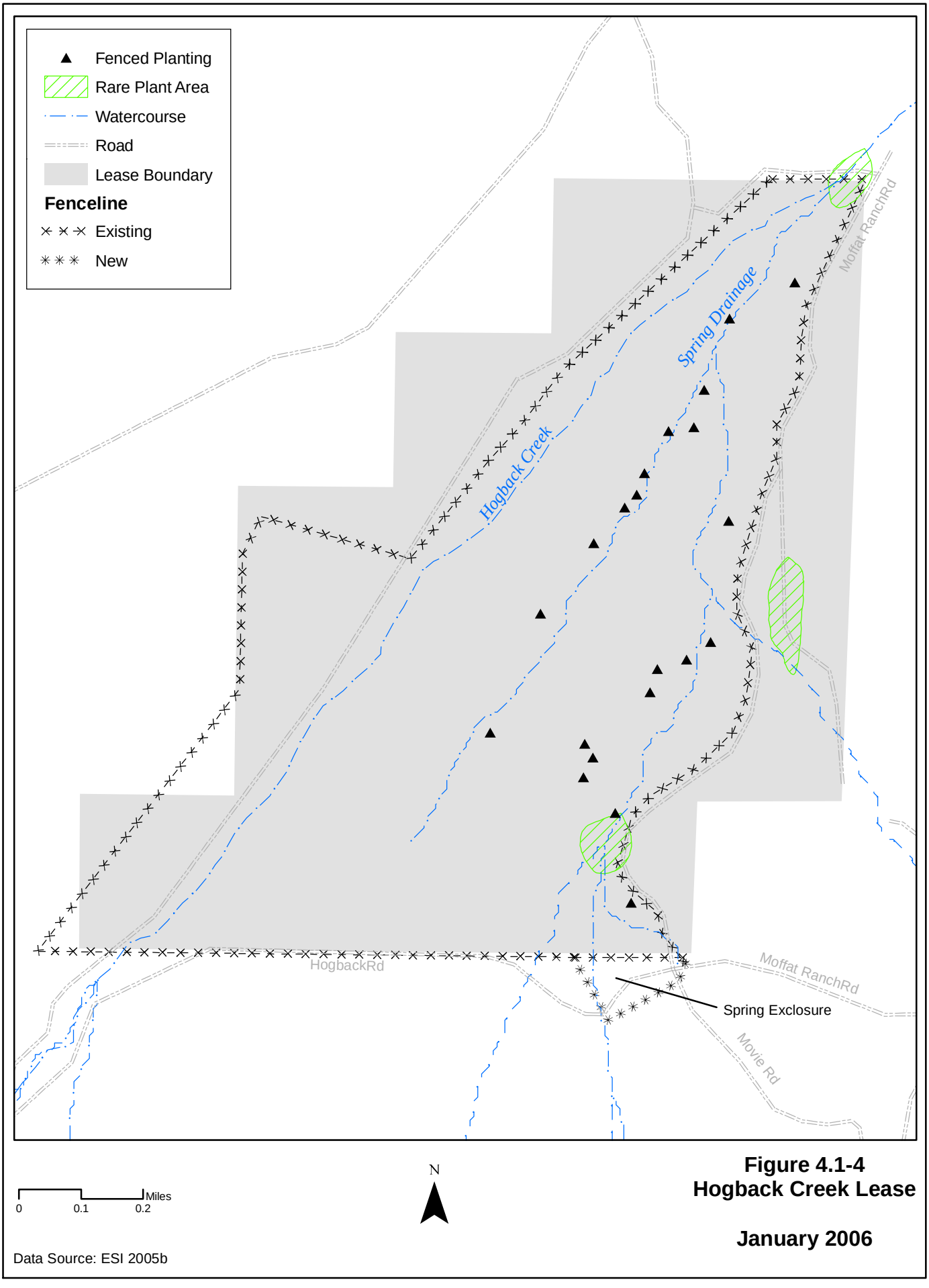


Figure 4.1-4
Hogback Creek Lease

January 2006

Data Source: ESI 2005b

Table 4.1-1 Present Grazing Management by Duration and Numbers

Pasture	Period	Numbers
Baker Creek	May 1 - Nov 1	150 - 175
Apple Orchard	March 1 - Jun 1	75 - 100
Brown	Jun 1 - Sept 15*	30 - 40
Baker Creek	Sept 15 – Dec 31	30 - 40
Big Pine	Green up	-
North	Green up	-

* numbers cows with calves

Source: ESI 2005a

Hogback Creek Lease

The Hogback Creek Lease, which has a 30-day revocable clause (subject to the discretion of the Board of Water and Power Commissioners), covers approximately 675 acres, and is used to support horse and mule packer operations in the Sierras. The lease is a mosaic of upland areas with riparian and wetland meadow communities occurring along streams and at springs (Figure 4.1-4). Pack stock is grazed on the lease from the beginning of January to the end of April depending on forage conditions. Stocking generally ranges from 40 to 55 horses and mules, and is altered to reflect the demand for pack animals and range conditions. In times of drought, grazing is reduced. Additional details on this lease are included in Appendix C.

4.2 IMPACTS AND MITIGATION

4.2.1 Thresholds of Significance

The following thresholds of significance were used to evaluate the MOU Consultant Project. These thresholds are based on Appendix G of the CEQA Guidelines. The MOU Consultant Project would result in a significant impact on the environment if the project would:

- Convert economically viable 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;

- Conflict with existing zoning for agricultural use, or a Williamson Act contract in an area in which continued agriculture is economically viable; or

- Involve other changes in the existing environment that, due to the location or nature, could individually or cumulatively result in loss of economically viable Farmland to non-agricultural use.

4.2.2 Impact Assessment

Compliance with Applicable Plans, Contracts and Policies. The MOU Consultant Project would alter the existing agricultural operations on the Baker Creek and Hogback Creek leases through a combination of constructing exclusion areas and changing grazing periods. Inyo County General Plan Policies provide for expansion of economic opportunities of agricultural operations, including general support for agricultural production activities, minimization of encroachment from conflicting land uses, and working with LADWP to identify arable lands for crop production. General plan policies also include provisions for discouraging the conversion of agricultural lands to urban uses. The MOU Consultant Project does not conflict with these policies. The Project sites are also zoned as "Open Space," which encourages the protection of mountainous, hilly upland, valley, agricultural, potential agricultural, fragile desert areas, and other mandated lands from fire, erosion, soil destruction, pollution, and other detrimental effects of intensive land use activities. The MOU Consultant Project is compatible with the current zoning and is compatible with continued grazing operations on both leases. The provisions of the California Land Conservation Act of 1965 (Williamson Act) and the FMMP do not apply to lands in Inyo County. Therefore, the MOU Consultant Project would not conflict with existing zoning and land use policies protecting agricultural resources and operations. This is considered an area of no effect.

Alteration of Grazing Operations. Implementation of the proposed plans would reduce grazing availability for two local livestock operations. The following is a review of the implications of project implementation on these operations.

The Baker Creek project area for the enhancement plan is approximately 411 acres. The Project would create several exclosures using 3.4 miles of fencing, and would remove 141 acres from grazing. The MOU Consultant Project will result in large changes in the lessee's ability to manage livestock grazing. As written, the MOU Consultant Project would convert some lands currently in operation for grazing to non-agricultural use. As a consequence to changes called for in the MOU Consultant Project, this lessee will sustain an economic impact.

The Baker Creek lessee presently grazes 30 to 40 registered Beefmaster cow/calf pairs from June 1 through September 15 in the Brown Pasture. The pasture is exterior-fenced and not grazed in conjunction with any other pasture. Registered Beefmaster cattle are a unique part of the lessee's operation since all other grazing consists of a commercial cattle herd. Beefmaster cattle demand a premium price in the cattle market, allowing the producer to earn more from each individual animal. The lessee maintains a registered status by not allowing any breeding with the commercial cattle herd. If the registered herd of cattle was to breed with the commercial cattle herd, it would remove the premium that the lessee can charge for pure genetics and eliminate his registered herd status. The lessee's management practices have allowed for this registered herd to function as a viable part of the ranch operations. By changing grazing management, the lessee will no longer have a location to graze the registered herd due to the fact that all other pastures

on the lease are used for commercial operations. This would result in the permanent removal of the herd from the lessee's operations and result in a reduction in revenue.

The Apple Orchard Pasture is usually grazed during the spring green-up as a compliment to other LADWP uplands and adjacent grazing permits on lands administered by the Bureau of Land Management. Building of the exclosure fences and changes in grazing dates eliminate the ability of the area to be grazed during the green-up. Consequently, all grazing is being eliminated from the Apple Orchard Pasture, resulting in the loss of spring grazing for 50 to 75 head. Late fall grazing of the pasture is not practical because forage in the pasture is predominantly spring annuals that are either not palatable or have lost nutritional quality. This elimination from grazing in the Apple Orchard is estimated to result in a reduction in annual revenue.

Baker Creek Pasture currently holds about 150 cow-calf pairs from June to September 20, and 170 dry cows from October 15 to November 1. Exclosure fencing and tree plantings outside the exclosure have the potential to eliminate 30 to 40 cows from the herds grazing this pasture.

The proposed enhancement plan for Hogback Creek covers 330 acres. The proposed plan includes the development of one exclosure that would prevent grazing on 7.5 acres. However, although the area is leased for livestock grazing, approximately 5.5 acres of this area is dense riparian vegetation and there would be minimal losses in forage for livestock operations. With the implementation of the proposed plan on the Hogback Creek lease, stocking would be changed from 40-to-55 head to 35 head to accommodate the grazing season change from January 1 - April 30 to December 1 - March 31. These changes would result in a loss of five to 20 AUMs, depending on the available forage and stocking needs of the lessee. This lessee would also have to consider reductions in stock to accommodate the new grazing prescription for Hogback Creek or seek other feed sources to replace the five to 20 AUMs. The loss in value to the lessee would be based on replacement of the five to 20 AUMs.

The proposed plans for Baker Creek and Hogback Creek are likely to result in the loss of grazing capacity leading to the use of alternative forages or herd reductions. Due to the seasonal nature of both the current and proposed grazing, both Baker Creek and Hogback Creek sites do not support minimum economically viable operations. However, these leases do contribute to the economic viability of packing and cattle production operations. With the implementation of the MOU Consultant Project, the grazing leases for these sites would be revised in consideration of the changes in terms arising from implementation of the enhancement plans.

Changes in livestock operations at Baker Creek due to implementation of the MOU Consultant Project would contribute to the loss of economically viable farming operations and the conversion of farmland to non-agricultural use. Therefore, the impacts to local operations at Baker Creek are considered to be significant.

Mitigation. The loss of grazing land is considered a significant impact. There are no other vacant LADWP lands available for grazing. Because feasible mitigation to reduce

the impact of the loss of agricultural lands is not possible, this impact is considered significant and unavoidable.

Inyo County Cattle Production. Cattle production contributes nearly half of the value of agricultural production in Inyo County (Inyo-Mono Counties Agricultural Commission 2005). Cow-calf operations provide the majority of this value. This production is based on 45 cattle producers producing an average of 5,500 calves and steers. Grazing at Baker Creek provides part of the forage base for one cow-calf operation; other sources of forage are utilized from January through March. The proposed enhancement plan at Baker Creek would reduce grazing on the site by 120 AUMs. The estimated loss of cattle production could be 30-40 registered Beefmaster cattle per year from Brown Pasture, 50-75 head from the Apple Orchard Pasture, and 30-40 head from the Baker Creek Pasture. These reductions would be less if forage could be replaced at a cost that is comparable to the existing lease. However, there are no alternative grazing sites on LADWP land in Inyo County. Because of the reductions in cattle production, the MOU Consultant Project is likely to result in the loss of economically viable farming operations or conversion of farmland to non-agricultural use. Therefore, potential impacts on Inyo County cattle production are considered significant.

Mitigation. No feasible mitigation is available for this effect.

4.2.3 Significance After Mitigation

The MOU Consultant Project would result in significant impacts on agricultural resources due to the reduction of grazing and conversion of agricultural lands to non-agricultural uses. The loss of grazing land is considered a significant impact. There are no other vacant LADWP lands available for grazing. Because feasible mitigation to reduce the impact of the loss of agricultural lands is not possible, this impact is considered significant and unavoidable.

5.0 AIR QUALITY

5.1 EXISTING CONDITIONS

5.1.1 Applicable Standards, Rules, and Regulations

National Ambient Air Quality Standards (NAAQS), which are applicable to the MOU Consultant Project, were established by the federal Clean Air Act (CAA) of 1970, which was amended in 1977 and 1990. The NAAQS represent the maximum levels of pollution considered safe to protect the public health and welfare. The six primary air pollutants of concern for which the NAAQS were established included ozone (O_3), sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen dioxide (NO_2), lead (Pb), and particulate matter equal to or smaller than 10 microns in diameter (PM_{10}) (CARB 2005).

On July 18, 1997, the U.S. Environmental Protection Agency (EPA) issued NAAQS for O_3 and $PM_{2.5}$. The NAAQS for O_3 is 0.08 parts per million (ppm) averaged over 8 hours. The EPA established new $PM_{2.5}$ (particulate matter with a diameter smaller than 2.5 micrometers) standards: annual average of 15 micrograms per cubic meter ($\mu g/m^3$) and 24-hour average of 65 $\mu g/m^3$ and essentially retained the PM_{10} standards. Also, in 2005 the state of California established and approved a new standard for 8-hour O_3 (0.07 ppm). This standard is expected to go into effect in early 2006 (CARB 2005).

Table 5.1-1 presents the NAAQS for each of the six pollutants at different averaging periods. The NAAQS, other than the O_3 standard and those based on annual averages or annual arithmetic means, are not to be exceeded more than once per year. The current 1-hour O_3 standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than 1 averaged over 3 years. The annual standards should never be exceeded. When an area violates a health-based standard, the CAA requires that the area be designated as non-attainment for that pollutant. In addition, the California Air Resources Board (CARB) has developed the California Ambient Air Quality Standards (CAAQS; Table 5.1-1) whose standards are often more stringent than NAAQS and sometimes address different averaging times.

The MOU Consultant Project s would occur in Inyo County, part of the Great Basin Valleys Air Basin. The Basin is comprised of a single air district, the Great Basin Unified Air Pollution Control District (GBUAPCD), that consists of Alpine, Mono, and Inyo Counties. Among other tasks, the GBUAPCD develops and enforces air quality regulations for stationary sources and participates in regional air quality planning. The Great Basin Valleys Air Basin is currently designated as non-attainment for both the State 24-hour and annual average PM_{10} standards, and is unclassified for both the State annual $PM_{2.5}$ standard and for ozone. The 1990 Clean Air Act Amendments set planning requirements to ensure the attainment of the O_3 standard by specific deadlines. Foremost among these requirements is adoption of a State Implementation Plan (SIP). The SIP consists of many elements, including regional air pollutant emission inventories, rules and regulations, and control measures for stationary and mobile sources.

The California Clean Air Act (CCAA) requires areas that are not in attainment of State ambient air quality standards for ozone, CO, SO_2, NO_2, or particulates to outline plans to attain standards by the earliest practicable date, in this case for particulate matter. The majority of the local particulate pollution is a result of dust from high wind events, with much originating in the Owens Valley. In response to the requirements of the CCAA, the Great Basin Unified Air Pollution Control District (GBUAPCD) has adopted: three State Implementation Plans (SIPs) for Coso, Owens Lake, and Mono Basin (GBUAPCD 2004, 2003, and 1995, respectively); the Air Quality Management Plan (AQMP) for the town of Mammoth Lakes (GBUAPCD 1990); and the Owens Valley Land Management Plan. Jointly, these documents provide the framework and strategy for reducing emissions of non-attainment pollutants.

5.1.2 Existing Air Quality of Project Areas

Baker Creek

The best available data on local ambient air quality in the Project area over the past three years were obtained from tabulations on the California Air Resources Board (CARB) website (CARB 2006). Due to the limited number of monitoring stations nearby, ambient data were collected from monitoring stations located throughout two air basins; the Great Valleys Basin (Mammoth Lakes-Gateway HC for PM data and Death Valley for ozone data), and the San Joaquin Valley Air Basin (Visalia-N Church Street for the remaining pollutants). The closest monitoring station is located over 40 miles north of the Project site in Mammoth Lakes. Given the distance and the fact that the Project sites are in a more rural area than the Mammoth Lakes and Visalia stations, actual air pollutant levels in the Project area are expected to be lower than those indicated by the available monitoring data for the specified constituents. Table 5.1-2 summarizes the most recent air quality monitoring records at these monitoring sites.

Hogback Creek

The best available information on local air quality for the Hogback Creek site was also obtained from the CARB website (CARB 2006). Ambient data were collected at monitoring stations located throughout the Great Basin Valleys Air Basin, including Lone Pine (7 miles south of the Project site), Keeler – Cerro Gordo Rd (8.5 miles south), Mammoth Lakes (85 miles to the north), and Death Valley (62 miles southeast). Table 5.1-3 summarizes the air quality levels recorded at these monitoring sites

Again, given the location of some monitoring sites with respect to the Project, actual pollutant levels near Hogback Creek may be lower than the data presented here (particularly with respect to PM data from Death Valley). The only regional exceedances of the ambient air quality standards indicated in Table 5.1-3 are those for California 24-hour PM_{10} and 8-hour ozone standards.

Table 5.1-1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS	NAAQS	
			Primary	Secondary
Ozone (O_3)	1-hour	0.09 ppm		Same as primary
		(180 µg/m^3)		
	8-hour	0.07 ppm	0.08 ppm	Same as primary
		(137 µg/m^3)	(157 µg/m^3)	
Carbon monoxide (CO)	8-hour	9.0 ppm	9 ppm	---
		(10 mg/m^3)	(10 mg/m^3)	
	1-hour	20 ppm	35 ppm	---
		(23 mg/m^3)	(40 mg/m^3)	
Nitrogen dioxide (NO_2)	Annual	---	0.053 ppm	Same as primary
			(100 µg/m^3)	
	1-hour	0.25 ppm	---	---
		(470 µg/m^3)		
Sulfur dioxide (SO_2)	Annual	---	0.03 ppm	---
			(80 µg/m^3)	
	24-hour	0.04 ppm	0.14 ppm	---
		(105 µg/m^3)	(365 µg/m^3)	
	3-hour	---	---	0.5 ppm
				(1,300 µg/m^3)
	1-hour	0.25 ppm	---	---
		(655 µg/m^3)		
Suspended particulate matter (PM_{10})	Annual	20 µg/m^3	50 µg/m^3	Same as primary
	24-hour	50 µg/m^3	150 µg/m^3	Same as primary
Suspended particulate matter ($PM_{2.5}$)	Annual	12 µg/m^3	15 µg/m^3	Same as primary
	24-hour	---	65 µg/m^3	Same as primary
Sulfates	24-hour	25 µg/m^3	---	---
Lead	30-day	1.5 µg/m^3	---	---
	Quarterly	---	1.5 µg/m^3	Same as primary
Hydrogen sulfide	1-hour	0.03 ppm	---	---
		(42 µg/m^3)		
Vinyl chloride	24-hour	0.010 ppm	---	---
		(26 µg/m^3)		

Source: CARB (2005).

Table 5.1-2 Ambient Air Quality Summary Baker Creek Most Representative Monitoring Stations

Pollutant (Units)	Averaging Time	CA AQS[1]	NA AQS[1]	Maximum Concentrations[1]			Number of Days Exceeding CAAQS			Number of Days Exceeding NAAQS		
				2005	2004	2003					2005	2004
O_3 (ppm)	1 hour	0.09	0.12	0.105	0.086	0.089	O_3 (ppm)	1 hour	0.09	0.12	0.105	0.086
	8 hour	0.07	0.08	0.101	0.081	0.084		8 hour	0.07	0.08	0.101	0.081
CO (ppm)	8- hour	9	9	1.45	2.24	3.03	CO (ppm)	8- hour	9	9	1.45	2.24
NO_2 (ppm)	1 hour	0.25	-	0.068	0.078	0.087	NO_2 (ppm)	1 hour	0.25	-	0.068	0.078
	Annual	-	0.053	NA	0.016	0.018		Annual	-	0.053	NA	0.016
PM_{10} ($\mu g/m^3$)	24 hours	50	150	85	86	74	PM_{10} ($\mu g/m^3$)	24 hours	50	150	85	86
	Annual	20	50	NA	19.6	NA		Annual	20	50	NA	19.6
$PM_{2.5}$ ($\mu g/m^3$)	**24 hours**	**-**	**65**	**27**	**27**	**34**	**$PM_{2.5}$ ($\mu g/m^3$)**	**24 hours**	**-**	**65**	**27**	**27**
	Annual	12	15	NA	NA	NA		**Annual**	**12**	**15**	**NA**	**NA**

Source: CARB (2006)

Table 5.1-3 Ambient Air Quality Summary Hogback Creek Most Representative Monitoring Stations

Pollutant	Averaging Time	CAAQS[1]	NAAQS[1]	Maximum Concentrations[1]			Number of Days Exceeding CAAQS			Number of Days Exceeding NAAQS		
				2005	2004	2003	2005	2004	2003	2005	2004	2003
O_3 (ppm)	1 hour	0.09	0.12	0.105	0.086	0.089	1	0	0	0	0	0
	8 hour	0.07	0.08	0.101	0.081	0.084	NA	NA	NA	4	0	0
CO (ppm)	8 hour	9	9	1.45	2.24	3.03	0	0	0	0	0	0
NO_2 (ppm)	1 hour	0.25	-	0.068	0.078	0.087	0	0	0	-	-	-
	Annual	-	0.053	NA	0.016	0.018	-	-	-	0	0	0
PM_{10} ($\mu g/m^3$)	24 hours	50	150	36.0	76.0	87.0	0	1	2	0	0	0
	Annual	20	50	NA	NA	17.0	NA	NA	NA	NA	NA	0
$PM_{2.5}$ ($\mu g/m^3$)	24 hours	-	65	22	81	44	-	-	-	0	1	0
	Annual	12	15	NA	NA	NA	NA	NA	NA	NA	NA	NA

Source: CARB (2006).

5.1.3 Meteorology/Climate

The Project sites are located in the western half of Inyo County, with Baker Creek in the northern part of the county and Hogback Creek located in the central region. The county is bounded by the Sierra Nevada Mountains to the west and the White and Inyo Mountains to the east. The location and proximity of the Project areas to the Sierra Nevada Mountains results in much of the moisture from the northwest being blocked causing the area to be particularly arid. Since the Sierra Nevada Mountains block most winter storms, rainfall is relatively low with an average annual precipitation of 5.27-inches, as reported at the Independence, CA monitoring station[1] that lies between the two Project sites. Most precipitation occurs during the winter months.

Long-term precipitation and temperature data collected at Independence, California are shown in Table 5.1-4. Maximum temperatures in the area range from a normal maximum temperature of 97.9°F in July, to a low normal maximum of 53.9°F in January. The normal minimum temperatures in the same months are 64.2°F and 27.7°F, respectively.

Table 5.1-4 Climatological Data Summary Independence, California

Month	Temperature (°F)		Precipitation (in)
	Normal Maximum	Normal Minimum	Normal Monthly
Jan	53.9	27.7	1.00
Feb	57.9	31.5	1.05
Mar	65.7	36.8	0.48
Apr	73.0	42.7	0.26
May	81.9	50.9	0.17
June	91.3	58.8	0.11
July	97.9	64.2	0.13
Aug	95.9	62.1	0.14
Sept	88.6	55.2	0.21
Oct	76.8	45.2	0.23
Nov	63.5	34.1	0.54
Dec	54.5	28.3	0.94
Annual Mean	75.1	44.8	5.27

Source: WRCC (2006).

[1] Precipitation typically differs approximately 4 inches/year between the two sites, with the Baker Creek site having greater precipitation. Use of the Independence station, while exactly representative of precipitation at neither site, does provide additional synoptic long-term meteorologic data necessary for air resources analysis. A decision was made to use data from this station only for the evaluation of air resources to ensure consistent analysis.

Strong winds of approximately 35 to 40 knots occur in the central region of the county, particularly during the spring and fall months, with westerly winds being the most predominant (WRCC 2006). Wind variations occur during the summer months when afternoon winds are predominantly from the south as a result of thermal gradients.

5.1.4 Sensitive Receptors

Sensitive members of the population include the very young, elderly, and persons suffering from illness. Accordingly, locations such as schools, day-care facilities, convalescent homes, medical facilities, and residential areas are considered sensitive receptors for purposes of this air quality impact analysis.

The Baker Creek site is located one mile west of the community of Big Pine. The closest sensitive receptors include the district high school (Inyo High School) and an elementary school located in the town of Big Pine (both approximately 2.0 miles to the east), and local residences located in Big Pine approximately 1 mile to the east. There is also a program center for Inyo County Schools (Bernasconi Education Center) and an alternative high school located on the north end of the Bernasconi Center, both located about 1/4 mile from the Project site. The Bernasconi Education Center and Palisade Glacier High School are located at the southwestern boundary of the Project site (Bobbie Lovig, Dan Munis, Gerry Dame, pers. comm., January 6, 2006).

The Hogback Creek site is located approximately 7 miles to the north of the community of Lone Pine. This site is in a remote area with no residences and/or facilities within 5 miles. The closest sensitive receptor to the Project area is an elementary school approximately 6.7 miles to the southeast (Lo-Inyo Elementary). Other sensitive locations in the town of Lone Pine include a hospital (Southern Inyo Hospital), a hospice (Hospice of Southern Inyo), the district schools including Lone Pine High School, another elementary school (Olancha) and two pre-schools (Mt. Whitney, and Warren E. Hanson).

5.2 IMPACTS AND MITIGATION

5.2.1 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, the impacts of the Project on air quality would be considered significant if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or Projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable federal or state

ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people;

The proposed improvements for the Baker Creek and Hogback Creek areas would generate air pollutant emissions during Project construction. These emissions would be mainly from construction activities and are, by their nature, short-term and would cease upon completion of Project components. In order to determine the level of significance, significance thresholds as defined by GBUAPCD are used to compare to estimated emissions, and are described for each Project activity in sections 5.2.3 and 5.2.4.

The following summarizes the significance thresholds used to determine impact levels associated with the MOU Consultant Project options, the methodology employed in the construction impact analysis, and the estimated impacts associated with Project construction.

Unlike some air districts in California, the GBUAPCD has not established specific quantitative significant emissions thresholds for construction activities. However, the District has established emission thresholds for permitting new stationary sources as listed in its New Source Review Rule GBUAPCD Rule 209-A. As requested by GBUAPCD, these thresholds were used as screening criteria to evaluate the potential significance of anticipated Project construction emissions on local air quality levels. Air quality impacts would be considered significant if Project construction emissions would exceed the given thresholds. Table 5.2-1 indicates these threshold values for criteria air pollutants expressed in pounds per day (lbs/day). The only construction standards issued by GBUAPCD are in Rule 401, which requires that fugitive dust emission control measures will be implemented and that they will be adequate to prevent visible dust from leaving the property (District Rule 401) and to maintain compliance with the PM-10 standard.

Table 5.2-1 Air Quality Significance Thresholds

Pollutant	Mass Daily Thresholds
NO_x	250 lbs/day
ROG[1]	250 lbs/day
PM_{10} [2]	80 lbs/day
SO_x	250 lbs/day
CO[3]	550 lbs/day

[1] ROG may also be referred to as VOC or ROC.

[2] Project must meet also meet narrative standards that prohibit visible dust emissions from the property.

[3] The GBUAPCD CO significance threshold is defined as the net increase in emissions that would cause a violation of any national ambient air quality standard for CO, which is determined on a case-by-case basis. For this analysis, the South Coast AQMD significance criterion of 550 lb/day of CO was used.

As stated in Rule 209-A, the GBUAPCD significance threshold for CO is the quantity of emissions determined by the Air Pollution Control Officer which would cause a violation of an ambient air quality standard for CO at the location and time of the maximum ground level impact. Ambient CO levels for the area are well below the state and federal standards and the MOU Consultant Project is not expected to significantly contribute to these levels. Since a threshold is not explicitly defined for this pollutant, the most conservative CO significance threshold for the state of California (550 lbs/day from the South Coast Air Quality Management District's CEQA Handbook) was used as a criterion for this Project.

5.2.2 Impact Assessment Methodology

The URBEMIS2002 model (Version 7G; CARB 2003) was used to estimate air pollutant emissions that would potentially be generated during the construction phase of the MOU Consultant Project options. URBEMIS2002 is recommended by the CARB to estimate air pollutant emissions for land-use development Projects and has been enhanced to estimate construction emissions. URBEMIS2002 predicts air pollutant emissions of ROG, NO_x, SO_x, CO, and PM_{10} associated with various construction activities. Because of the nature of the Project, i.e., activities performed to enhance habitat, the only "operational" Project activities will be a low-level continuation into future years of some of the construction

activities that are initiated in the first year. However, in all cases, emissions during the first year will represent the worst-case scenario for each Project element from an air quality impact standpoint.

Input data to the URBEMIS2002 model were prepared based on estimated construction schedules and activities for each of the Project sites, with each construction element being scheduled individually. The MOU Consultant Project includes activities at Baker Creek and Hogback Creek. Because of the distance between these two sites, separate construction emission calculations were made for each site. The model default emission factors for all pollutants were used and input data for each phase of Project construction were developed based on data provided by LADWP. In order to construct the Project, LADWP expects to use one or more medium-duty pickup trucks, utility truck, small and large excavator, small bulldozer, a truck-crane (if necessary for constructing diversion structures), quad-all terrain vehicle (ATV), a mower, a fence machine, and chain saws. The duration of use for this equipment varies, with the largest equipment in use for one to two weeks at each site during construction. The medium-duty pickup, quad-ATV, mower, and chain-saws would also be used periodically for additional planting or maintenance. For purposes of this analysis it has been assumed that gasoline and diesel-fueled construction equipment and vehicles will not be allowed to idle when not in use. With this provision, the number of daily hours of equipment operation incorporated in the emissions estimation calculations for specific phases of the Project are as follows:

Trucks: 6 hour

Quads/ loaders: 5 hours

All other equipment: 7 hours.

Representations of these inputs in the URBEMIS2002 model are presented in the *Technical Memorandum on Air Quality Impact Analysis Methodology and Results* (Tech Memo) that supports this EIR (URS 2006). A summary of calculated emissions for each phase is shown in Table 5.2-2.

5.2.3 Impact Analysis Results

Baker Creek

Planting Phase. Proposed improvements for the planting phase include 61 grouped plantings (of primarily cottonwood and willow trees) throughout the Baker Creek site. Specific sources of emissions include exhaust from fueled equipment used over a 3-year period. The planting would occur in stages, with the most construction activity occurring within the first year, and only routine maintenance checks following the third year. Therefore, the first year's activities (occurring over a period of three days) were modeled to determine a "worst-case" daily emissions scenario for the planting phase and compared with the significance thresholds as presented in Table 5.2-1. Construction schedule and activity data used as inputs to the URBEMIS2002 model for this activity and all other Project phases are presented in URS (2006). Corresponding information on representative

mixes of construction equipment and vehicle usage for all construction phases of the Project are also presented in URS (2006).

Irrigation Phase. The irrigation phase of the Baker Creek Project consists of constructing two ponds by excavation and creating an earth berm on the down slope side to retain water, construction of head-gates and measuring stations, and creating or repairing five diversions from the Giroux and Baker ditches. Specific sources of emissions from these activities include exhaust from gasoline and diesel equipment, and dust generated by the disturbance of land.

Projected emissions were calculated to allow for the possibility that the construction of diversions and development of wetlands may overlap in time. No emission controls were assumed to provide a worst-case estimate of emissions for this phase. Emission calculations for both activities were based on the conditions and equipment information provided by LADWP.

Black Locust Eradication Phase. The Baker Creek's black locust eradication phase refers to the gradual removal of black locust trees by cutting down (and removing) trees and applying herbicides to the remaining stumps. This aspect of the Project will occur over a period of ten years for five days each year. Specific sources of emissions from these activities include exhaust from fueled equipment, and dust generated by the cutting of trees.

Since these operations will be (at worst) the same year after year, emission calculations for one-five day period would be representative of the impact this phase would have on air quality in any year. Ideally, the eradication phase will gradually diminish as more black locusts are removed and the quality of the habitat improves.

Grazing Exclosure Construction Phase. This phase of the Project is for the construction of a drift fence in the Brown Pasture, the Brown Exclosure, the Baker Exclosure and the West Exclosure. Specific sources of emissions from this phase include exhaust from both gasoline and diesel equipment. The development of exclosures will take about 7 days and will consist of removing existing fences and installing approximately 3.4 miles of new fence.

Emission estimates for the construction of grazing exclosures were developed based on worst-case assumptions regarding the extent and equipment usage for this activity (i.e. all the equipment used in the same day). As a result, actual emissions for the grazing exclosure construction phase will most likely be lower than the values developed for this analysis.

Trail Relocation Phase. The trail relocation phase consists of the construction of a small section of new off-road vehicle (ORV) track to create a loop system for users of the area. Specific sources of emissions from these activities include exhaust from diesel and gasoline powered equipment and vehicles and dust generated by soil disturbance.

This phase of the Project is expected to take one day to complete. The trail will be created by the use of heavy brushing equipment to clear the proposed trail and grading, as needed.

Firebreak Creation Phase. The Firebreak phase consists of hand brushing 15 feet of brush on either side of a power line road that runs between the Baker Creek meadow and the Glacier Lodge Road as a step to prevent wildfires. The firebreak will be created by hand brushing to clear the proposed area with support vehicles to haul equipment and brush removed from the firebreak. Equipment is expected to be used in this Project phase for no more than one day.

Summary of Air Pollutant Emissions for the Baker Creek Site. Table 5.2-2 presents the estimated air pollutant emissions associated with construction activities for all phases of construction at the Baker Creek site. As indicated in this table, the estimated worst-case unmitigated emissions of all pollutants are below the associated GBUAPCD significance thresholds for all phases of construction at this location.

The predicted maximum daily emissions are presented separately in Table 5.2-2 for each construction phase. More than one phase could be conducted simultaneously without causing a significant impact, if the combined emissions for each pollutant remain below the corresponding significance thresholds. Thus, while no other construction activity would occur concurrently with Planting, any two of the last three phases listed in the table could be pursued without triggering a significant impact.

The URBEMIS2002 model input and output files are provided in appendices to URS (2006).

Table 5.2-2 Summary of Estimated Maximum Daily Construction Emissions (Lb/Day): Baker Creek –All Phases

URBEMIS2002 Model Case Project Phase[1]	Pollutant				
	ROG	NO_x	CO	PM_{10}	SO_x
Significance Threshold (lb/day)	*250*	*250*	*550*	*80*	*250*
Planting Phase	34	246	271	11	<1
Irrigation Phase (MOU Project)	27	195	218	10	<1
Irrigation Phase (LADWP Alternative)	22	150	177	8	<1
Black Locust Eradication Phase	13	81	116	3	<1
Grazing Exclosure Construction Phase	20	150	156	7	<1
Trail Relocation Phase	8	56	66	4	<1
Firebreak Creation Phase	11	72	88	3	<1

NOTES:

[1] Maximum daily emissions from each phase of Project construction are presented separately. Concurrent activity on more than one phase is possible if total emissions would not exceed a significance threshold for any pollutant.

Hogback Creek

Planting Phase. Proposed improvements for the planting phase include open area plantings. The planting is expected to occur in stages over a three-year period. The most intensive planting activity will occur within the first year, with the level of activity reduced to routine maintenance checks by the third year. Therefore, only the first year's activities were modeled for the planting phase to determine the worst-case daily emissions for comparison with significance thresholds. Construction schedule and activity data used as inputs to the URBEM2000 model and detailed construction equipment specifications for this and all other phases are presented in the Tech Memo accompanying this EIR.

Grazing Exclosures Phase. This phase of the Project is for the development of an exclosure fence around a 7.5 acre area of the Hogback Pasture. Specific sources of emissions from this phase will include exhaust from both gasoline and diesel equipment. The development of the exclosure (fence) will take approximately two days.

Black Locust Eradication Phase. The Hogback Creek's black locust eradication phase refers to the removal of a few black locust trees by cutting down (and removing) these trees and applying herbicides to the remaining stumps. It is expected that this aspect of the Project will be accomplished during a single two-day period. Specific sources of emissions from these activities will include exhaust from fueled equipment, and dust generated by the cutting of trees.

Summary of Air Pollutant Emissions for the Hogback Creek Site. Table 5.2-3 presents the estimated air pollutant emissions associated with construction activities for all phases of construction at the Hogback Creek site. As indicated in this table, maximum daily unmitigated emissions of all pollutants from all phases of construction are predicted to remain below the designated significance thresholds.

The predicted maximum daily emissions are presented separately in Table 5.2-3 for each construction phase. More than one phase could be conducted simultaneously without causing a significant impact if the combined emissions for each pollutant remain below the corresponding significance thresholds. Thus the grazing exclosure phase could occur concurrently with the black locust eradication phase, but would exceed the NO_x significance threshold if carried out on the same days as the Planting Phase.

The URBEMIS2002 model input and output files are provided in appendices to the Tech Memo.

Table 5.2-3 Summary Of Estimated Maximum Daily Construction Emissions (Lb/Day): Hogback Creek –All Phases

URBEMIS2002 Model Case Project Phase[1]	Pollutant				
	ROG	NO_x	CO	PM_{10}	SO_x
Significance Threshold (lb/day)	*250*	*250*	*550*	*80*	*250*
Planting Phase	23	159	188	7	<1
Grazing Exclosure Construction Phase	29	217	221	10	<1
Black Locust Eradication Phase	3	17	26	1	<1

NOTES

[1] Maximum daily emissions from each phase of Project construction are presented separately. Concurrent activity on more than one phase is possible if total emissions would not exceed a significance threshold for any pollutant.

5.2.4 Significance of Impacts

Construction Impacts. Implementation of the yellow-billed cuckoo enhancement plans will temporarily increase emissions of criteria pollutants in the Project area, including non-attainment pollutants. The contribution of emissions from this Project's activities at both locations will be of short duration, and, as shown in the previous subsections, will be below the significance thresholds selected for this evaluation without additional mitigation measures. Based on the estimated emissions of air pollutants for Project activities presented in the previous subsections, the implementation of the habitat enhancement plans will not significantly degrade the current air quality in the vicinity of either the Baker Creek or the Hogback Creek site and will not conflict with or obstruct the implementation of any air quality plans. Also, given that the emissions are below a level of significance, it is unlikely that the Project will contribute to an existing or projected air violation.

The Project will contain operations that will produce minor odors associated with equipment and materials. The sites are located within one mile and seven miles respectively of sensitive receptors in the surrounding communities of Big Pine (Baker Creek) and Lone Pine (Hogback Creek); however, the odors associated with this type of project are normally not considered offensive and will be significantly diluted before reaching residences or congregation areas. Diesel fuel odors from equipment and

vehicles fall into this category. No significant odor impacts are forecast to result from implementing the MOU Consultant Project.

Operational Impacts of the MOU Consultant Project. Only three phases of the Project would carry past the first year of the Project, including the planting phase, the black locust eradication phase, and the irrigation system phase. Most emissions from the planting phase will be generated in the first year, with very little need for heavy equipment use in subsequent years. The removal of black locust trees in the Baker Creek area will be done gradually over 10 years, and emissions each year are expected to remain uniform (if not reduced) after the first year. After the first year, the irrigation system will only require annual inspection and maintenance and the scheduled manipulation of water flow, which will entail the use of at most only one or two service vehicles. These activities would produce much lower emissions than the mix of vehicles and equipment needed for the initial construction the ponds and diversion of the Giroux Ditch.

Given that the model emission estimates for the first year are below a level of significance, there will be minimal operational impacts resulting from the Project's subsequent years.

5.2.5 Significance After Mitigation

No measures beyond practicable fugitive dust emissions controls necessary to comply with the visible dust narrative criteria (if any) are required to maintain project emissions below a level of significance at either the Baker Creek or Hogback Creek Project areas. Therefore, the MOU Consultant Project would not result in significant impacts on air resources.

6.0 BIOLOGICAL RESOURCES

The following provides a discussion of the existing biological conditions of the Project sites, including plant community composition and expected wildlife use, and then evaluates the effects of the MOU Consultant Project on special-status species, special plant communities, wildlife use, and wildlife movement. Where potentially significant impacts have been identified, mitigation measures have been provided to reduce these impacts to a less than significant level.

6.1 EXISTING CONDITIONS

The following description of biological resources is based on a review of databases, relevant literature and environmental reports, and field surveys to evaluate habitat. Databases reviewed included the California Natural Diversity Data Base (CNDDB) managed by the California Department of Fish and Game (CDFG); proposed or final Critical Habitat for species listed as "threatened" or "endangered" as designated by the U.S. Fish and Wildlife Service (USFWS) under the Federal Endangered Species Act (ESA); Significant Ecological Areas (SEAs) as determined by Inyo County; and Significant Natural Areas (SNAs) as determined by CDFG (CDFG 2005, USFWS 2005, and Inyo County 2001).

6.1.1 Special Land Designations

The Inyo County General Plan designates both project areas as Open Space (Gertz pers. comm. 2005). Permitted uses for Open Space include recreation, watershed protection, habitat protection, and rangeland (Inyo County 2001). There is no designated critical habitat that includes the Hogback Creek or Baker Creek sites (USFWS 2005). There are no SNAs at the Hogback Creek or Baker Creek sites, and there are no adopted habitat conservation plans or natural community conservation plans for these sites.

6.1.2 Plant and Wildlife Communities

Vegetation communities on the project sites were characterized according to the Final Phase 1 Task 1 Reports (OBEC 2004a, b). Additional detail on the plant composition of each community and a project plant list is available in the reports. The distribution of these habitats is illustrated in Figures 6.1-1 and 6.1-2.

Baker Creek

The complex topography and alternating under-laying geological conditions at the Baker Creek site support several cover types. Red willow riparian forest, riparian shrublands, black locust riparian forest, mesic meadow, and upland shrub are the predominant cover types on the site. Wetland vegetation occurs on the site in association with springs, drainages, and high water tables. The following is a description of the predominant vegetation and wetland communities from the site.

Red Willow Riparian Forest. Tall tree-willow dominated riparian forest is prominent throughout the Baker Creek area. The dominant tree species are cottonwood and red willow (*Salix laevigata*). Black cottonwood (*Populus balsamifera* ssp. *tricocarpa*) and

water birch (*Betula occidentalis*) are present within red willow riparian forest, mainly along the south Baker Creek channel. A few large Fremont cottonwood (*Populus fremontii*) trees and one small patch of younger, mixed age cottonwoods are present within the Brown and Apple Orchard pastures. Understory species of red willow riparian forest includes arroyo willow (*Salix lasiolepsis*), Wood's rose (*Rosa woodsii*), dwarf swamp privet (*Forestiera pubescens*), and stinging nettle (*Urtica dioica*). Black locust (*Robinia pseudoacacia*) is typically a sub-dominant species.

Riparian Shrubland. The riparian shrublands are comprised of three vegetation community types: 1) arroyo willow, occurring mainly along the south portion of the Brown Pasture in association with emergent marsh/bog wetlands and with natural seeps and springs; 2) sandbar willow (*Salix exigua*), which typically occurs within the Apple Orchard Pasture on alluvial terraces which are seasonally-flood irrigated or have a seasonal high water table; and 3) dwarf swamp privet and Wood's rose, which occur within and along the outside edges of red willow riparian forest. This fruit-bearing riparian shrubland community offers high quality structural diversity and valuable foraging and nesting habitat for avian and other wildlife species.

Black Locust Riparian Forest. Tall deciduous tree-dominated riparian forest dominated by black locust is prominent where fire, tree cutting, and hydrologic alterations have occurred in the Brown and Apple Orchard pastures, along uplands of alluvial fans, and along the upper banks of the north Baker Creek channel in the Baker Creek Pasture. In many areas, mature black locust stands have little or no understory vegetation. Where black locust riparian forest has an understory, the dominant species typically include red willow, arroyo willow, Wood's rose, and rubber rabbitbrush (*Ericameria nauseosus*).

Emergent Marsh/Bog. In the Brown Pasture area, emergent marsh/bog wetlands are prominent in the south area and within the red willow riparian forest and arroyo willow-dominated riparian shrublands. Dominant species of the larger emergent marsh/bog area in the southern portion of the Brown Pasture include bulrush (*Scirpus* sp.), common cattail (*Typha* sp.), sedges (*Carex* sp.), and spikerush (*Eleocharis* sp.). One small emergent marsh/bog wetland also exists within the Apple Orchard Pasture.

Mesic Meadow. Mesic meadow occurs on alluvial terraces with a seasonally high water table and along floodplains of Baker Creek. The majority of the mesic meadow is in the Baker Creek Pasture. Typical species are slender sedge (*Carex praegracilis*) and tall fescue (*Festuca arundinacea*). Owens Valley Checkerbloom (*Sidalcea covillei)* is present in the mesic meadows of the Baker, Apple Orchard, and Brown Pastures.

Upland. Several dominant upland shrub community types are present within the Baker Creek area. Dominant species of associated uplands include rubber rabbitbrush, big sagebrush (*Artemisia tridentata*), and saltbush (*Atriplex* sp.).

Hogback Creek

Vegetation mapping at the Hogback Creek site identified six cover types. Riparian forest, riparian shrublands, upland, wet meadow, and emergent marsh/bog vegetation are

the predominant cover types on the site. Wetland vegetation occurs on the site in association with springs and drainages. The following is a description of the predominant vegetation and wetland communities from the site.

Riparian Forest. Fremont cottonwood is the dominant tree species of riparian forests and the understory is dominated by red willow, arroyo willow, dwarf swamp privet, golden currant (*Ribes aureum*), and Wood's rose. A minor component of the riparian forest is comprised of black locust with an understory of rubber rabbitbrush.

Riparian Shrubland. The riparian shrublands are comprised of four vegetation community types. These community types include 1) arroyo willow with a dwarf swamp privet/golden currant/Wood's rose component; 2) sandbar willow with a golden currant/Wood's rose component; and 3) dwarf swamp privet, golden currant, and Wood's rose stands occurring within and along the edges of red willow and Fremont cottonwood riparian forest; and 4) golden currant and Wood's rose thickets occurring on alluvial terraces. The two non-willow, fruit-bearing riparian shrubland communities offer high quality structural diversity and valuable foraging and nesting habitat for avian and other wildlife species.

Emergent Marsh/Bog. Emergent marsh/bog wetlands are fairly common along the southern drainage systems within dense riparian forest and riparian shrubland areas. These unique wetland types typically occur with small water body inclusions supporting narrow strips of emergent and aquatic vegetation originating from natural springs. Dominant species include southern cattail (*Typha domingensis*), bulrush, spikerush, and sedges. Natural spring drainages in more open areas typically support narrow strips of vegetation dominated by common reed (*Phragmites australis*).

Wet Meadow. Wet meadow wetlands typically occur on floodplains and on alluvial terraces with a seasonally high water table. The wet meadows are typically dominated by alkaline-tolerant species, including Yerba mansa (*Anemopsis californica*), alkali sacaton (*Sporobolus airoides*), and inland saltgrass (*Distichlis spicata*). Unique, large areas of Yerba mansa monocultures are present throughout the Hogback Creek area. Rabbitbrush has colonized transitional zones of alkali-affected wet meadow areas disturbed by fire.

Upland. Several dominant upland shrub community types are present within the Hogback Creek area on terraces and draws. Dominant species of associated uplands include rubber rabbitbrush, big sagebrush, and saltbush.

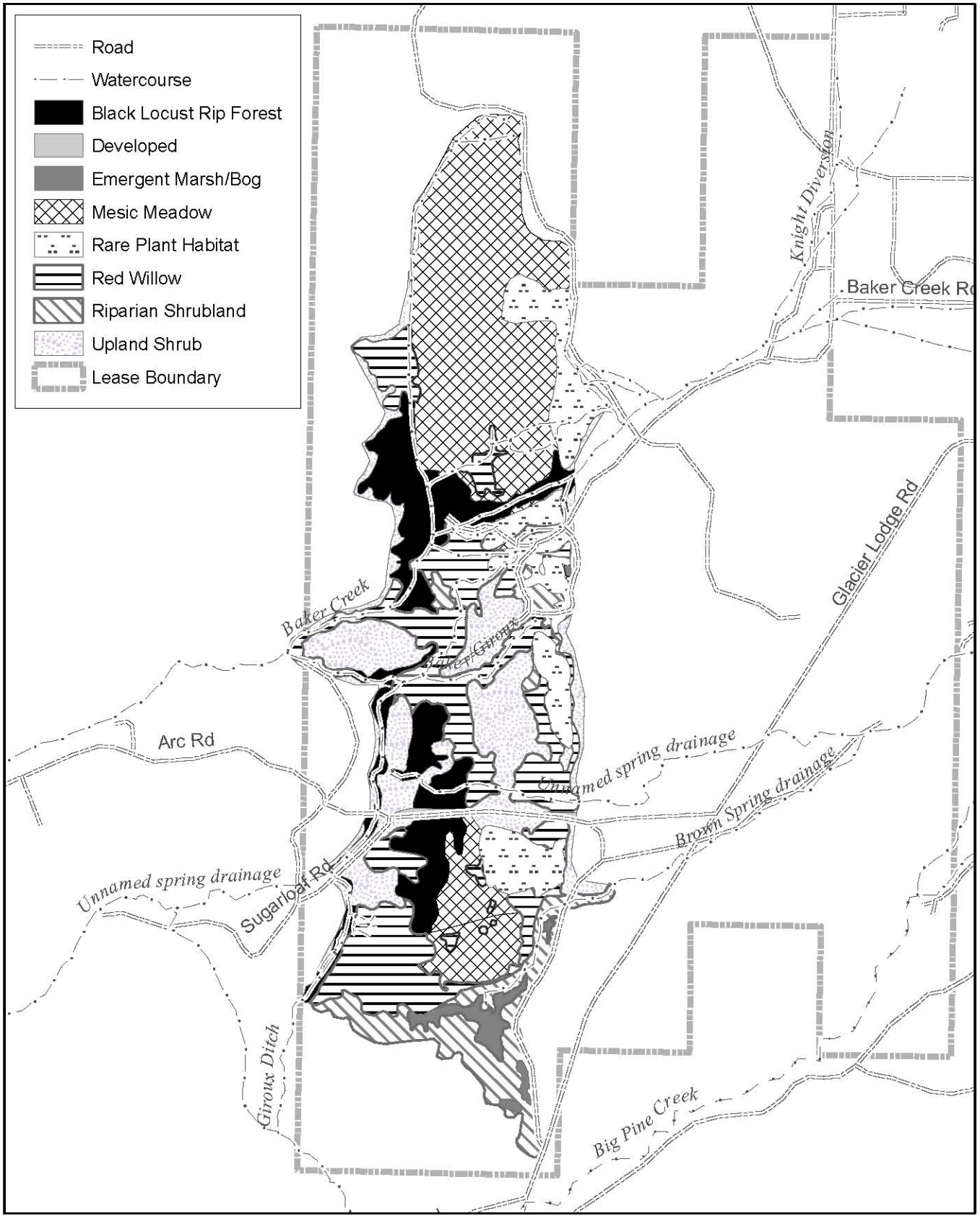


Figure 6.1-1
Baker Creek Vegetation

January 2006

Data Source: Otis Bay 2004a

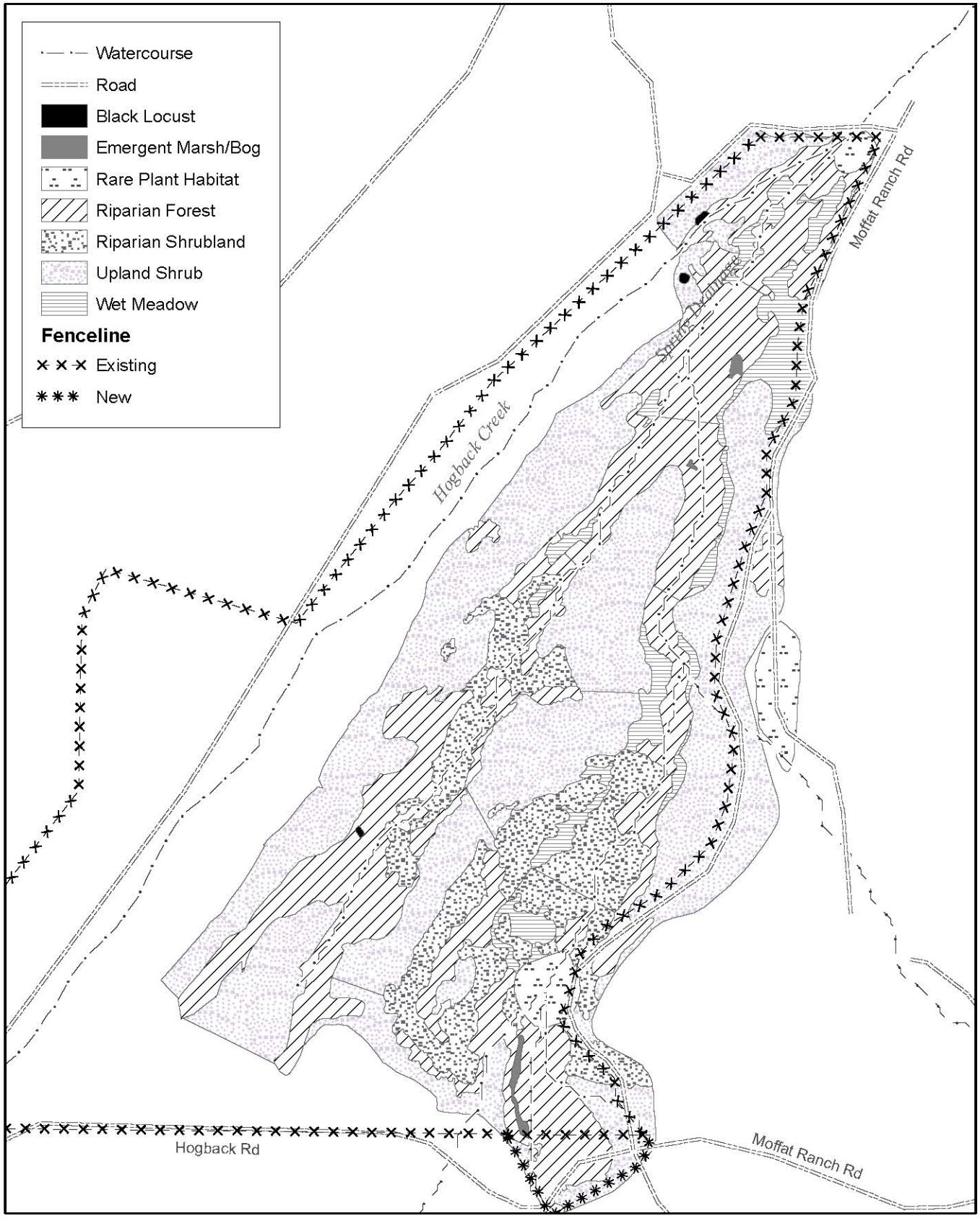


Figure 6.1-2
Hogback Creek Vegetation

January 2006

Data Source: Otis Bay 2004b

Project Area Wildlife

Habitat conditions on the Project sites support a wide variety of wildlife. The following is a discussion of the wildlife species typically associated with habitat types in the Baker and Hogback Creek areas.

Bird species commonly associated with these vegetation communities include spotted towhee (*Pipilo maculatus*), house wren (*Troglodytes aedon*), Bewick's wren (*Thryomanes bewickii*), mourning dove (*Zenaida macroura*), and California quail (*Callipepla californica*). Both the Hogback Creek and Baker Creek sites are known as birding "hotspots" in the Owens Valley. Bird biologists from the Point Reyes Bird Observatory Eastern Sierra Field Station conducted songbird breeding surveys at the Hogback Creek site from 1999-2003 (Heath 2004).

Mammal species commonly associated with these communities include deer mice (*Peromyscus* spp.), black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), raccoon (*Procyon lotor*), bobcat (*Felis rufus*), coyote (*Canis latrans*), and mule deer (*Odocoileus hemionus*). Small mammal burrows and sign of mule deer and coyote are ubiquitous on both the Project sites.

6.1.3 Jurisdictional Waters

Pursuant to Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (ACOE) regulates the discharge of dredged and/or fill material into "waters of the U.S." The limit of waters of the U.S. is generally identified as the limit of the ordinary high water mark (OHWM) of a stream or drainage as extended by any adjacent wetlands. The OHWM generally is considered to be the highest level to which water flows at least every other year (50 out of 100 years); wetlands include those areas that are inundated or saturated by surface or groundwater at a frequency and duration (wetland hydrology) sufficient to support wetland vegetation. Project activities in these areas are also subject to water quality certification issued by the Regional Water Quality Control Board (RWQCB) under Section 401 of the Clean Water Act. This is discussed further in the water resources section of this document. Section 1600 of the California Fish and Game Code regulates activities that affect the bed or bank of drainages within the state. Jurisdiction is typically defined as the bed of a drainage and the bank up to the top of significant cut, extending to the outer limits of riparian vegetation where it occurs beyond the bank cut. The locations of waters of the U.S. and CDFG jurisdictional areas within the Project sites have not been identified.

6.1.4 Special-Status Species

The following section addresses special-status species observed, reported, or having the likelihood to occur at the Project sites or their immediate vicinity. Special-status species are plants and animals that are legally protected under the state and federal Endangered Species Acts or other regulations and species that are considered sufficiently rare by the scientific community to qualify for such listing.

For purposes of this document, special-status plants are defined to include species in the following categories:

- Plants listed or proposed for listing as threatened or endangered under the federal ESA;
- Plants listed or proposed for listing by the State of California as threatened or endangered under the California ESA (14 CCR 670.5);
- Plants that meet the definitions of rare or endangered species under CEQA (CEQA Guidelines, Section 15380); or
- Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (Lists 1B, 2 and 3).

For the purpose of this document, special-status animals are defined to include species in the following categories:

- Animals listed or proposed for listing as threatened or endangered under the federal ESA;
- Animals that meet the definitions of rare or endangered species under CEQA (CEQA Guidelines, Section 15380);
- Animals listed or proposed for listing by the State of California as threatened and endangered under the California ESA (14 CCR 670.5);
- Animal species of special concern to CDFG; or
- Animal species fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

The CEQA Guidelines (Section 15380) contain the following guidelines regarding endangered, rare or threatened species:

> (a). "Species" as used in this section means a species or subspecies of animal or plant or a variety of plant.
>
> (b). A species of animal or plant is: (1) "Endangered" when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors; or (2) "Rare" when either: (A) although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or (B) the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act.
>
> (c). A species of animal or plant shall be presumed to be endangered, rare or threatened as it is listed in: (1) Sections 670.2 or 670.5, Title 14, California Code of Regulations; or (2) Title 50, Code of Federal Regulations Sections 17.11 or

17.12 pursuant to the Federal Endangered Species Act as rare, threatened, or endangered.

(d). A species not included in any listing identified in subsection (c) shall nevertheless be considered to be endangered, rare or threatened, if the species can be shown to meet the criteria in subsection (b).

(e). This definition shall not include any species of the Class Insecta which is a pest whose protection under the provisions of CEQA would present an overwhelming and overriding risk to man as determined by: (1) The Director of Food and Agriculture with regard to economic pests; or (2) The Director of Health Services with regard to health risks.

Special-Status Plants

Table 6.1-1 identifies the special-status plant species that may occur or are known to occur in the Project areas. The list of species and their habitats were determined from the CNDDB (CDFG 2005), USFWS species list (USFWS 2005), and the CNPS Inventory of Rare and Endangered Plants (CNPS 2005). Those special-status plant species reported from the general area, but that are not likely to occur in the Project Area are listed in Appendix E.

Table 6.1-1 Special-Status Plant Species Likely or Known to Occur in the Project Areas.

Common Name Scientific Name	Status (Fed/CA/CNPS)	Habitat	Occurrence
Owens Valley checkerbloom *Sidalcea covillei*	--/SE/1B	Inhabits mesic chenopod scrub, meadows and seeps/ alkaline at elevations of 1095-1415 m. Blooms Apr-Jun.	Big Pine and Manzanar quad Known to occur on Baker Creek and Hogback Creek sites.
Inyo County star-tulip *Calochortus excavatus*	--/---/1B	Found in chenopod scrub, alkaline meadows and seeps at elevations of 1150-2000 m. Blooms Apr-Jul.	Big Pine and Manzanar quads Known to occur on Baker Creek and Hogback Creek sites.
Inyo phacelia *Phacelia inyoensis*	--/---/1B	Occurs in alkaline meadows and seeps at elevations of 915-3200 m. Blooms Apr-Aug.	Big Pine quad

Common Name Scientific Name	Status (Fed/CA/CNPS)	Habitat	Occurrence
Parish's popcorn-flower *Plagiobothrys parishii*	--/---/1B	Known in California from only two occurrences at Rabbit Springs (San Bernardino Co.) and north of Cartago (Inyo Co.). Occurs in Great Basin scrub, Joshua tree woodland, and alkaline, mesic habitats at elevations of 750-1400 m. Blooms Mar-Nov.	Big Pine quad
Scalloped moonwort *Botrychium crenulatum*	--/---/2	Inhabits bogs and fens, lower montane coniferous forest, meadows and seeps, marshes swamps at elevations of 1500-3280 m. Blooms Jun-Sep. Scattered but not common anywhere in California.	Manzanar quad
Sagebrush loeflingia *Loeflingia squarrosa* var. *artemisiarum*	--/---/2	Found in Great Basin scrub, desert dunes, and Sonoran desert scrub at elevations of 700-1615 m. Blooms Apr-May.	Big Pine quad
Intermontane lupine *Lupinus pusillus* var. *intermontanus*	--/---/2	Occurs in Great Basin scrub at elevations of 1220-2060 m. Blooms May-Jun.	Big Pine quad
Nevada oryctes *Oryctes nevadensis*	--/---/2	Grows in chenopod scrub, Mojave Desert scrub at elevations of 1100-2535 m. Blooms Apr-Jun. Known in California from fewer than ten occurrences in Owens Valley.	Big Pine quad
Robbin's pondweed *Potamogeton robbinsii*	--/---/2	Found in marshes and swamps (deep water, lakes) at elevations of 1585-3300 m. Blooms Jul-Aug.	Big Pine quad

Notes on Status:

California Department of Fish and Game

SE Endangered: Any species that is in danger of extinction throughout all or a significant portion of its range.

California Native Plant Society

1B List 1B plants that are rare, threatened or endangered in California and elsewhere.

2 List 2 plants that are rare, threatened, or endangered in California, but more common elsewhere.

Special-Status Wildlife

The list of special-status animal species and their general habitat information were compiled from data in the CNDDB (CDFG 2005), USFWS species list (USFWS 2005), and biological literature pertaining to the region. These efforts identified sixteen species that may occur on the Project sites. Numerous special-status animal species are not likely to occur in the Project Area due to restricted range or a lack of suitable habitat; these are listed in Appendix E. The special-status wildlife species that are likely to occur in the Project areas are listed in Table 6.1-2, followed by a short discussion of the life history of each species.

Table 6.1-2 Special-Status Animal Species Likely or Known to Occur in the Project Areas.

Common Name Scientific Name	Status	Habitat	Occurrence in project areas
Birds			
Yellow-billed cuckoo *Coccyzus americanus*	FC/SE FSS	Nests in the thick undergrowth of streamside woodlands.	Neotropical migrant and probable breeder at Baker Creek. Current status uncertain. Known to occur at Hogback Creek but status uncertain.
Swainson's hawk *Buteo swainsoni*	ST	An uncommon summer visitor to Inyo County. Winters in South America. In summer inhabits open grasslands, prairies, farmlands, and deserts that have suitable nesting trees.	Known to occur at Hogback Creek as a transient/migrant/ disperser. Nests in vicinity of agricultural fields in Owens Valley. Not known to nest at Baker or Hogback site.
Willow flycatcher *Empidonax trallii* AND Southwestern Willow Flycatcher *E. t. extimus*	ST FSS FE/SE	Nests in dense riparian habitats along streams, rivers, and other wetlands. At low elevations breeds in stands of dense cottonwood, willow, tamarisk and other lush woodland near water.	Willow flycatchers occur at Hogback Creek as a transient/migrant/disperser. Expected to occur as migrant at Baker. Suitable breeding habitat exists at both sites.
Cooper's hawk *Accipiter cooperii*	CSC	Inhabits open woodlands and brushland. Nests in broken woodlands, especially in riparian areas, canyons and floodplains.	Known to occur at Hogback Creek as a transient/migrant/disperser. Suitable breeding habitat exists at both sites.

Common Name Scientific Name	Status	Habitat	Occurrence in project areas
Northern harrier *Circus cyaneus*	CSC	Inhabits almost any type of open country including open fields, wet meadows, fresh and saltwater marshes, agricultural fields, savannah and alpine meadows. Occasionally forages over open desert and brushlands.	Known to occur at Hogback Creek as a transient/migrant/disperser. Potential breeder at Baker Creek. Suitable breeding habitat exists at both sites.
Long-eared owl *Asio otus*	CSC	Occupies dense, mixed forests and tall shrublands, usually next to open spaces such as grasslands and meadows. Riparian and live oak woodlands; dense stands of trees.	Not documented, but may occur due to suitable habitat at both sites.
Loggerhead shrike *Lanius ludovicianus*	CSC	Open country adjacent to dense brush, including grasslands, open pastures and prairies with scattered bushes, savanna, oak woodlands, sagebrush plains, and pinyon-juniper woodlands.	Known to occur at Hogback Creek as a transient/migrant/disperser. Suitable breeding habitat exists in uplands at both sites.
Yellow warbler *Dendroica petechia*	CSC	Inhabits lowland riparian woodlands, isolated willow stands, dry montane chaparral with scattered trees and montane coniferous forests up to 3,000 m.	Known occurrence at Hogback Creek and a probable breeder. Confirmed breeder at Baker Creek.
Yellow-breasted chat *Icteria virens*	CSC	Dense riparian thickets bordering streams, small ponds and swampy ground dominated by vine tangles, willows and lush, low shrubbery interspersed by taller trees.	Known to occur and breed at Hogback Creek and Baker Creek.
Brown-crested flycatcher *Myiarchus tyrannulus*	CSC	Inhabits deserts, riparian deciduous woodlands, and shade trees in urban areas. Frequents cottonwood, willow, and sycamore woodlands.	Known to occur and suspected to breed at Baker Creek.
Mammals			
Owens Valley vole *Microtus californicus vallicola*	CSC	Inhabits wetlands, grasslands, and other grass-dominated sites.	Recorded from several sites in the Owens Valley from near Benton, Mono County to Owens Lake, Inyo County. Likely to occur due to suitable habitat.

Common Name Scientific Name	Status	Habitat	Occurrence in project areas
Pallid bat *Antrozous pallidus*	CSC FSS	Occurs in a variety of habitats from rocky arid deserts to chaparral and scrublands to grasslands into higher elevation coniferous forests. Roosts in rock crevices, caves, buildings, caves, and mines.	Likely to occur due to suitable roosting and foraging habitat.
Townsend's big-eared bat *Corynorhinus townsendii*	CSC FSS	Roosts in caves, mines, buildings, rock crevices and hollow trees found in coniferous forests, mixed forests, deserts, riparian communities, active agricultural areas, and coastal habitats.	Likely to occur due to suitable foraging habitat and known occurrences in area mines.
Spotted bat *Euderma maculatum*	CSC	Found in a wide variety of habitats from arid low desert to high elevation forests. Dependent on prominent rock features for roosting.	Likely to occur due to suitable foraging habitat.
Long-eared myotis *Myotis evotis*	CSC	Occurs in semi-arid shrublands, sage, chaparral, and agricultural areas but is usually associated with coniferous forests. Roosts in hollow trees, caves, mines, cliff crevices, sink holes and rocky outcrops on the ground.	Likely to occur due to suitable roosting and foraging habitat.

Notes on Status

U.S. Fish and Wildlife Service

- FE Endangered: Any species that is in danger of extinction throughout all or a significant portion of its range.
- FT Threatened: Any species likely to become endangered within the foreseeable future.
- FC Candidate: Federal candidate to be proposed for listing.
- FSS U.S. Forest Service Sensitive: Species that are managed according to the Regional Forester's Sensitive Species Management Guidelines.

California Department of Fish and Game

- SE Endangered: Any species that is in danger of extinction throughout all or a significant portion of its range.
- ST Threatened: Any species likely to become endangered within the foreseeable future.
- CSC Species of Special Concern

Yellow-billed cuckoo. Yellow-billed cuckoos (*Coccyzus americanus*) are seasonal migrants to Inyo County, nesting in riparian habitat between late June-early July and August. Yellow-billed cuckoos were first detected at the Hogback Creek site during surveys in 1977 when one cuckoo was found at this site (Gaines and Laymon 1984). This individual was believed to represent a mated pair. No more than one pair of cuckoos has ever been found at this site and they do not appear to be present every year. Laymon (2004) reports that no cuckoos have been seen at Hogback Creek in recent years, although one cuckoo was noted at Hogback by the Point Reyes Bird Observatory (PRBO) survey in 2003, during riparian songbird monitoring (Heath 2004).

In 1977 three cuckoos were found at the Baker Creek site and two of these were carrying food and twigs indicating nesting activity (Gaines and Laymon 1984). A peak of five cuckoos was found at the site in 1991, indicating the possibility of three pairs. More recent surveys have shown lower numbers with a high of two cuckoos in 1998 and 1999. In 1993 only an unmated male was detected at the site. No cuckoos have been seen at Baker Creek since 2000, but there has also been a scarcity of observers at the site (Heindel pers. comm. April 2004 in Laymon 2004). The decline from possibly three nesting pairs of cuckoos to one unmated male represents a 10 percent decline of the yellow-billed cuckoo population in California. Laymon (2004) states that, currently, there is relatively little highly or moderately suitable yellow-billed cuckoo habitat at Baker Creek (98 acres), and that which is rated as "highly suitable" is fragmented into patches that are relatively small in size. Each pair of cuckoos needs 50 to 100 acres of nearly contiguous suitable habitat to nest successfully. The marginal habitat for cuckoos is not likely to support more than one pair.

Swainson's hawk. The Swainson's hawk (*Buteo swainsoni*) is a long-distance migrant species. Migration to the wintering grounds generally occurs around September. Some individuals or small groups may winter in California (Steinhart 1990). Nests are generally found in scattered trees or along riparian systems adjacent to agricultural fields or pastures. Egg-laying generally occurs in April and young are present during May to June. Most young have fledged the nest by the end of July and are relatively independent of parental protection; however, fledged young remain with their parents until they depart in the fall for migration. In the Owens Valley, nesting occurs in trees around ranches and agricultural fields. Potential nesting and foraging habitat occurs on the Hogback Creek and Baker Creek sites.

Willow flycatcher. The willow flycatcher (*Empidonax traillii*) nests in willow thickets near rivers, streams, lakes, and montane meadows. The largest remaining population is along the South Fork of the Kern River near Weldon on the Kern River Preserve. A relatively large population of the federally-endangered Southwestern willow flycatchers (*E. t. extimus*) occurs in the northern Owens Valley near Bishop. This species is known to occur at the Hogback Creek site as a transient/migrant/disperser (Heath 2004). Suitable breeding habitat exists for willow flycatchers at both sites. Limited information exists as to which subspecies could occur as a breeder at the Baker or Hogback sites.

Cooper's hawk. Cooper's hawk (*Accipiter cooperii*) occurs throughout California in wooded and forested areas and is a year-round resident in the Owens Valley. It forages on small birds and mammals and will take other prey opportunistically, most often in areas with patchy trees and openings, rarely in very open areas. The Cooper's hawk builds nests in areas with dense stands of trees. This species is known to occur at the Hogback Creek site as a transient/migrant/disperser (Heath 2004). Suitable breeding habitat exists for this species at both sites.

Northern harrier. The northern harrier (*Circus cyaneus*) is a year-round resident in the region (Sibley 2003). It is most often seen coursing low over marshes, farmland, and grasslands. The northern harrier perches on low fence posts or on the ground, rarely higher and nests on the ground in fields or marshes (Sibley 2003). This species is known to occur at the Hogback Creek site as a transient/migrant/disperser (Heath 2004). This species potentially breeds at Baker Creek (House, pers. comm. 2006). Suitable breeding habitat exists at both sites.

Long-eared owl. The long-eared owl (*Asio otus*) roosts during the day in dense trees and brush and at night flies over forest edges and brushy fields in search of prey, including small mammals (Sibley 2003). The long-eared owl is usually solitary but small numbers may roost together in winter. Suitable breeding and wintering habitat exists for this species at both sites.

Loggerhead shrike. The loggerhead shrike (*Lanius ludovicianus*) is a locally rare and declining year-round resident in California (Sibley 2003); however, population trends in the Owens Valley are unknown. This species nests in dense foliage of shrubs and trees, and forages in open habitats for insects and small vertebrates. Potential nesting habitat for the loggerhead shrike occurs in upland habitats at both Project sites. This species is known to occur at the Hogback Creek site as a transient/migrant/disperser (Heath 2004).

Yellow warbler. The yellow warbler (*Dendroica petechia*) inhabits wet brushy habitat, such as willow thickets (Sibley 2003). The yellow warbler is a probable breeder at the Hogback Creek site (Heath 2004) and is a known breeder at the Baker Creek site (Heindel pers. comm. 2005).

Yellow-breasted chat. Sibley (2003) describes the yellow-breasted chat (*Icteria virens*) as an uncommon and secretive bird that inhabits dense tangled brushy patches and hedgerows in open sunny areas. The yellow-breasted chat is a known breeder at the Hogback Creek site (Heath 2004) and the Baker Creek site (Heindel pers. comm. 2005).

Brown-crested flycatcher. The brown-crested flycatcher (*Myiarchus tyrannulus*) inhabits riparian woods (Sibley 2003). This species is very rare in the Owens Valley. The brown-crested flycatcher is not recorded for the Hogback Creek site (Heath 2004) but is a probable breeder at the Baker Creek site (Heindel pers. comm. 2005).

Owens Valley vole. The Owens Valley vole (*Microtus californicus vallicola*) inhabits wetlands and lush grassy ground [Grinnell (1933) as cited in Williams (1986], although detailed natural history information on this subspecies of California vole is lacking.

Williams (1986) remarked that irrigated pastures and alfalfa fields characterize the remaining habitat for this species in the Owens Valley. Owens Valley voles or their sign have been seen recently in other grass-dominated sites in the Owens Valley including along the Owens River and in alkali shrub-meadow habitats (House pers. comm. 2006). The Baker Creek site (especially the irrigated grassland of Baker Creek Pasture) and the Hogback Creek site have potentially suitable habitat.

Pallid bat. The pallid bat (*Antrozous pallidus*) is characteristically a species of arid and semiarid, lowland habitats such as oak woodlands, grasslands, active agricultural areas, and desert scrub. Roost sites include crevices and cavities in cliffs, rocks, trees, caves, bridges, buildings, and mines (Hermanson and O'Shea 1983). Foraging habitat includes grasslands, shrublands and woodlands. Reproductive colonies are formed in spring and summer and young are generally weaned in mid to late August. Colonies disband between August and October. Szewczak et al. (1998) found this species at scattered locations throughout the Inyo Mountains below 1,710 meters and captured several individuals on the eastern shore of Owens Dry Lake north of the Town of Keeler. The Hogback Creek and Baker Creek sites have suitable roosting and foraging habitat for this species.

Townsend's big-eared bat. The Townsend's big-eared bat (*Corynorhinus townsendii)* occurs in a variety of habitat types, including woodlands, grasslands, riparian communities, and active agricultural areas. Roost sites are in cavern-like spaces with open flyways found in caves, mines, tunnels, and, less often, in buildings and bridges. Sometimes rock crevices and hollow trees are used as roosts. Reproduction occurs in spring and summer and a colony of females and young is known from the base of the White Mountains in Deep Springs Valley (Szewczak et al. 1998). Foraging associations for the Townsend's big-eared bat include edge habitats along streams and areas adjacent to and within a variety of wooded habitats. Suitable foraging habitat for this bat occurs on both Project sites and it is known to roost in mines in the region.

Spotted bat. The spotted bat (*Euderma maculatum*) has been found from arid low desert habitats to high elevation forests. The distribution of the spotted bat is extremely patchy and highly associated with prominent rock features on which it roosts. Reproduction occurs in spring and summer. Foraging occurs in forest openings, pinyon-juniper woodlands, large river/riparian habitats, wetlands, meadows, old agricultural fields, and riparian corridors in narrow canyons. Szewczak et al. (1998: pg 5) describes this species as "a common forager among the mid-elevation riparian corridors of the [White-Inyo] range down to the Owens Dry Lake bed." Suitable foraging habitat for this bat occurs on both Project sites.

Long-eared myotis. The long-eared myotis (*Myotis evotis*) is highly associated with forested habitat at higher elevations although it is known to occur in coastal forests (Barbour and Davis 1969). This species roosts in crevices and cavities in trees, caves, mines, cliffs, and rocky outcrops on the ground. They also sometimes roost in buildings and under bridges (Bogan et al. 1998). Reproduction occurs in spring and summer. Long-eared myotis forage among trees and over woodland ponds and streams (Bogan et al. 1998). Szewczak et al. (1998) found this species along the lower drainages of the

White Mountains and up through the pinyon-juniper zone. Suitable roosting and foraging habitat for this bat occurs on both Project sites.

6.1.5 Wildlife Movement Corridors

Animals move through the landscape by following river valleys and crossing mountain passes; these areas form natural wildlife corridors. On a large scale, corridors allow gene flow in regional wildlife populations and maintain biological diversity. The Project areas may increase animal movement between patches of habitat because wildlife movements are often concentrated along riparian corridors. On a small scale, corridors allow individual animals and small populations to move between daily and seasonally important habitats. Examples include daily trail use by mule deer moving between night time bedding areas and day time foraging areas; and use of emergent marsh/bog habitat by waterfowl as stopovers during seasonal migration. The Project sites are likely used by local and regional wildlife populations on a regular basis, and migratory birds on a semi-annual basis.

6.2 IMPACTS AND MITIGATION

6.2.1 Thresholds of Significance

Standards for determining thresholds of significance were established based on CEQA Guidelines and professional standards. Impacts on biological resources were considered significant if, for the following, the Project would:

- 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 CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means;
- 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 native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or approved local, regional, or state habitat conservation plan.

Standard professional practice was also used to determine whether an impact on biological resources would be significant. The MOU Consultant Project would cause a significant impact if it would result in:

- Documented resource scarcity and sensitivity, both locally and regionally;
- Decreased local and regional distribution of common and sensitive biological resources;
- Long-term degradation of a sensitive plant community because of substantial alteration of land form or site conditions;
- Substantial loss of a plant community and associated wildlife habitat fragmentation or isolation of wildlife habitats, especially riparian and wetland communities;
- Substantial disturbance of wildlife because of human activities;
- Avoidance by fish of biologically important habitat for substantial periods, which may increase mortality or reduce reproductive success;
- Substantial reduction in local population size, attributable to direct mortality or habitat loss, lowered reproductive success, or habitat fragmentation of:
    - Species qualifying as rare and endangered under CEQA
    - Species that are state-listed or federally listed as threatened or endangered
    - Portions of local populations that are candidates for state or federal listing and federal and state species of concerns;
- Substantial reduction or elimination of species diversity or abundance.

6.2.2 Impact Assessment

Wildlife Habitat. The proposed habitat enhancements on the Baker and Hogback sites would provide for long-term habitat improvements for local and migratory wildlife populations. Creation of the exclosures is expected to allow for areas of dense riparian vegetation, a benefit for may types of migratory songbirds, including the yellow-billed cuckoo. Riparian plantings are expected to create expansive tree cover, and associated nesting sites, foraging cover, and roost sties. Because of the limited nature of riparian habitat within an arid climate, these habitat improvements on these sites are important. Increased riparian cover and density would provide improved habitat conditions for various populations of wildlife, this is an expected benefit of the proposed plans.

Upland Scrub Habitat at Baker Creek and Hogback Creek Sites. Upland scrub habitat is common and abundant throughout the Project Area and region. These community types are not designated for protection by state, federal or local agencies. The MOU Consultant Project activities are likely to cause temporary disturbance to these communities and permanent loss for firebreaks, and one trail, and as these communities are converted to riparian community types.

At Baker Creek, construction activities that may result in impacts to vegetation communities include vehicle traffic outside of established roads, trail construction (brush clearing and grading), fuel break construction (brush clearing or tree trimming), barbed-wire fence installation, non-native tree removal (felling, stump removal or herbicide application), and possible erosion associated with non-native tree removal and soil stock-piling in berms.

Temporary impacts consist of limited vehicle travel into upland vegetation to access areas to be planted with native riparian vegetation and to access black locust forest for non-native tree removal. Less than five acres of this vegetation type will be permanently impacted by construction of the fuel break, wetland ponds, and ORV trail. The fuel break construction is expected to clear 2.9 acres, and creation of the section of ORV trail will remove approximately 0.20 acre.

Construction activities at Hogback Creek that may result in impacts to vegetation communities include barbed-wire fence installation, felling and removing or applying herbicide to the stumps of a limited number of non-native trees, and negligible erosion associated with the non-native tree removal. Temporary impacts on upland scrub habitat may also occur when fuel breaks are installed if any prescribed burns take place. Due to the proximity of the exclosure to Hogback Road, vehicular travel into undisturbed areas is not expected. Approximately two acres of upland will be lost by conversion to riparian habitat inside the grazing exclosure.

The temporary disturbance of upland scrub habitat and permanent loss of upland scrub is a negligible fraction of the available upland habitat at the Project Area and within the region; this impact is not significant.

Riparian Habitat at Baker Creek and Hogback Creek Sites. Riparian communities within the state have declined historically and are generally recognized as important resources for fish and wildlife. The status and condition of riparian cover in California is monitored by the CDFG. Inyo County General Plan policies recognize the importance and need for protection of riparian habitats within the County (Inyo County 2001).

Implementation of the MOU Consultant Project would likely require trimming and removal of a limited number of riparian shrubs and trees during fencing installation for the grazing exclosures at both sites. Overhead tree canopy will be left in place when trimming.

At Baker Creek, approximately 580 feet of new trail will be constructed along the eastern border of the proposed Baker Creek Exclosure. This new trail will provide a loop with the existing trail network and replace trails within the proposed exclosure. Removal of ORV use from the Baker Creek Exclosure is expected to allow for the growth and development of riparian cover within the exclosure. Construction of the new diversions along the Giroux Ditch at the Baker Creek site may also require the trimming and removal of riparian trees as well as black locust.

The fences, diversions, and trail will be constructed in the fall or winter during the dormant season. Following construction, trees and shrubs are expected to re-sprout and provide early seral stage riparian cover. Because the trimming of riparian trees will be limited to the minimum amount practical, trees and shrubs along the trail and fence lines will be allowed to re-sprout, and riparian cover within the Baker Creek exclosure will increase due to reduced ORV use. Therefore, impacts on riparian cover associated with these components of the Project are considered less than significant. In addition, the Project will include the planting of riparian vegetation resulting in an increase in, and enhancement of riparian habitat.

Aquatic Community of Baker Creek. Implementation of the proposed plan would require construction of two new diversions on the Giroux Ditch, and use of three additional existing diversions, one of which is located on Giroux Ditch and two of which are located on the Baker Creek Ditch.

Potential impacts to aquatic communities include reduced water flow and alterations in water quality. Construction of the new diversion and repairs on the existing diversions will be done under dry conditions which will minimize temporary increases in sediment discharges or turbidity. Non-native tree removal immediately adjacent to Baker Creek and the Giroux Ditch may also result in temporary increases in turbidity and sediment loads. Operation of heavy equipment for construction of the diversions would include the potential for the release of hazardous materials (i.e., fuel, hydraulic fluid, etc.) into the adjacent waterways. Fish surveys have not been conducted; however, these ditches as well as Baker Creek are expected to support populations of brown trout (*Salmo trutta*), and rainbow trout (*Oncorhynchus mykiss*), as well as benthic macroinvertebrates that support fish populations. Temporary releases of sediment and hazardous materials and high levels of turbidity could cause potentially significant populations losses for aquatic species. The implementation of Best Management Practices (BMP) measures and the fact that construction of diversions will be done under dry conditions would reduce these impacts to levels that are less than significant. Limited sediment loads that may or may not occur will also drop out in a sediment pond that exists below any diversion construction activity.

Aquatic and Riparian Communities of Baker Creek. The enhancement plan for Baker Creek includes supplemental irrigation of new plantings, and diversion of water into two newly created ponds in the Brown Exclosure. Water use is expected to be 635 acre feet per year for the ponds, with additional project related water uses in the Baker Exclosure. The use of this water at the Brown Exclosure and the Baker Exclosure from the Giroux Ditch would result in reduced supplemental flows downstream in Baker Creek.

Baker Creek will continue to receive its natural flows. The reduction in supplemental flows is not expected to result in reductions in habitat or habitat quality for aquatic species or result in changes in the composition and recruitment of associated riparian and wetland downstream of the diversion. Therefore no significant impacts to the aquatic or riparian communities of Baker Creek are expected.

Wetlands. Pursuant to the Clean Water Act, the ACOE monitors the impacts to Waters of the U.S. including streams, rivers, lakes and wetlands. The Inyo County General plan recommends the protection of wetland areas as delineated by wetland determination ACOE methods within the county (Inyo County 2001).

The proposed enhancement plan for the Baker Creek site includes the construction of two ponds within the proposed Brown Pasture Exclosure. The final configuration and siting of the ponds has not been determined, but the plan specifies that the ponds would total 0.2 acres in size and would range from 50 to 80 feet long and 20 to 40 feet wide, and 0.5 to 3 feet deep. The excavated soils would be placed on the downslope side of the ponds to create a berm.

The general area proposed for these ponds is influenced by historic irrigation practices off of the Giroux Ditch The area supports scattered red willow with an herbaceous understory of Baltic rush (*Juncus balticus*) and Douglas sedge (*Carex douglasii*). Baltic rush is a species that is considered hydrophytic as defined by the ACOE wetland delineation manual (ACOE 1987). However, the soil in this location is well drained and described as the Goodale-Cartago Complex, a loamy coarse sand with variable amounts of gravel. Two soil pits dug in the area showed no indicators for hydric soil conditions. This area is bordered by upland scrub dominated by big sagebrush. In addition, auguring during the growing season showed the soil to be dry at four feet. As a consequence, the presence of Baltic rush without the presence of a hydric soil or wetland hydrology indicates that the area does not meet the ACOE definition of wetland. Therefore, there will be no impact to wetlands in the area of pond construction.

Disturbance of General Wildlife Populations. Common wildlife species that inhabit, move through, or forage within the habitats at the Baker Creek and Hogback Creek sites, particularly small mammals, reptiles, amphibians, and other fauna of slow mobility would be subject to mortality or displacement. Small mammals that may occur on the Project sites include the woodrat (*Neotoma* sp.), pocket gopher (*Thomomys bottae*), and deer mice (*Peromyscus* sp.). Woodrat stick nests occur on both the Baker Creek and Hogback Creek sites and the animals are likely to be occupying the nests during the day. All construction activities will avoid disturbance of woodrat nests.

More mobile wildlife species and noise-sensitive species currently using these habitats would be expected to avoid the construction sites and neighboring areas with the initiation of construction activities. Mobile species expected to occur on the project sites include desert cottontail, black-tailed jackrabbit, coyote, bobcat, and mule deer.

Impacts to common wildlife species associated with the vegetation types discussed above would be reduced through implementation of best management practices. Although some impacts may occur from the Project, the minimal loss of wildlife would not reduce the populations of common wildlife species in the region below self-sustaining numbers; impacts would be less than significant.

Special-Status Plant Species. Potential impacts to special-status plant species will be avoided and minimized at the Hogback and Baker Creek sites. Locations of existing rare

plant habitat will be avoided to the maximum extent possible and potential impacts will be minimized by conducting Project activities outside of the growing season. Rare plant habitats will not be affected by construction as existing habitats will be avoided.

Special-Status Wildlife Species. Potential impacts to special-status wildlife species will be avoided at the Hogback and Baker Creek sites primarily by conducting Project activities in the fall and winter outside of the wildlife reproductive season.

Potential impacts to special-status nesting birds will be avoided by working in the fall and winter. Locust trees containing raptor nests will be left in place. The availability of nesting and foraging habitat for the willow flycatcher, yellow-billed cuckoo, yellow warbler, and the yellow-breasted chat is expected to increase as upland is converted to riparian forest. The altered grazing season for livestock is expected to benefit nesting bird species of special concern because the nesting season will no longer coincide with the presence of livestock (e.g., on the Hogback Creek site and the Apple Orchard Pasture section of the Baker Creek site).

Potential impacts of the Project activities on special-status mammals are limited to a burrowing mammal (Owens Valley vole); two bat species that may roost and forage in the Project areas, and two bat species that are likely to just forage in or over the Project areas. The Owens Valley vole may be present in potentially suitable grassy habitat (e.g., Baker Creek Pasture). Project activities that may impact the Owens Valley vole include burrow collapse/destruction due to vehicle traffic outside of established roads, barbed-wire fence installation, and non-native tree stump removal. The potential roosting habitat for the pallid bat and long-eared myotis occurs in the riparian forest habitats which are not expected to be impacted by Project activities except for minor branch and tree trimming during fence installation. The removal of locust trees could potentially impact bats if they contain roost locations. Removal of trees in winter will minimize this impact. Foraging habitat for the Townsend's big-eared and spotted bats is expected to increase due to riparian habitat enhancement. In general, potential impacts to special-status mammal reproduction will be avoided by working in the fall and winter. Bat foraging may occur in fall and winter, however construction is not expected to take place during night time hours; therefore, no disturbance of foraging activity is expected.

Wildlife Movement Corridors. Impacts on wildlife movement corridors as a result of the Project are temporary and minor. The temporary project impacts may consist of avoidance of habitual use areas by wildlife due to active construction. Deer are expected to use alternate trails while migratory birds will use alternate loafing or perching and feeding locations. The LADWP has integrated wildlife crossing elements into the fence design where deer are able to cross by leaping over the top. These deer crossing areas in the fence have greater width between the upright supports and are several inches lower than the fencing on either side. The temporary effects on wildlife movement associated with construction and the potential for alteration wildlife movement corridors are considered less than significant.

6.2.3 Significance After Mitigation

With implementation of the MOU Consultant Project and the BMPs recommended, potential impacts on biological resources resulting from Project construction and operation would be reduced to less than significant levels. No mitigation measures are recommended.

7.0 CULTURAL RESOURCES

The following discussion provides a brief overview of the archaeology related to the MOU Consultant Project. This section evaluates the impacts of the MOU Consultant Project on archaeological or other cultural resources. These issues are evaluated with the potential implementation of the proposed enhancement plans for Baker Creek and Hogback Creek. A more detailed description of the cultural resources within the Project Area, including the cultural setting, is provided in the "Archaeological Survey of the Baker Creek and Hogback Creek Enhancement Areas, Inyo County, California" (Bevill 2006).

7.1 EXISTING CONDITIONS

7.1.1 Prehistory Background

The Project areas are located on the western margin of the Owens Valley. The prehistory of the Owens Valley and east-central California has been the subject of archaeological, ethnographical, and anthropological inquiry since the early 1930s, and studies have provided evidence of some 10,000 years of human use. Within the past 30 years, the prehistory of the Owens Valley has been studied extensively in response to various academic and cultural resources management projects. In contrast to earlier studies, these works have concentrated on modeling prehistoric adaptations and cultural evolution through time, and have revealed a dynamic prehistory of human settlement extending over 10,000 years (Gilreath 1995:16).

In 1974, Bettinger and Taylor suggested revisions to the archaeological sequences of the Owens Valley region, identifying a five-phase chronological sequence, which remains the primary temporal construct for the region. These phases include the initial Mojave period predating 7500 B.P., the Pinto/Little Lake period at 7500-3500 B.P., Newberry period 3500 – 1350 B.P., Haiwee period 1350-650 B.P., and the Marana period post-650 B.P. Later, in the mid-to-late 1970s and early 1980s, Bettinger (1975, 1976, 1977a, 1979, 1982) conducted important studies of prehistoric sites in the Owens Valley based on a regional surface survey centered near Big Pine. The intent of this research, which included a survey adjacent to the Baker Creek Project Area, was to reconstruct local prehistoric settlement and subsistence patterns in detail, and to define changes in these patterns through time (Bettinger 1976:84). Bettinger was able to reconstruct historic settlement-subsistence patterns and to duplicate, where possible, the settlement types recognized from ethnographic accounts. On this basis, five categories of settlements were identified: lowland occupation sites; piñon camps; riverine temporary camps; desert scrub temporary camps; and upland temporary camps. Bettinger (1977a) later concluded that the prehistoric adaptation in the Owens Valley was highly variable and that climatic shifts were related to at least two of the three adaptive shifts reconstructed from the archaeological data. These shifts included 1) only after A.D. 600 were pine nuts an important staple; and 2) before A.D. 600, the subsistence system was specialized toward intensive use of lowland rather than upland resources.

7.1.2 Ethnography Background

The Owens Valley and its surrounding uplands were the homelands of the Owens Valley Paiute, a people who spoke dialects of the Mono language, a division of the Western Numic segment of the Numic Branch of the Uto-Aztecan language family (Liljeblad and Fowler 1986). Their territory extended from the Sierra Nevada on the west, to the Inyo Mountains on the east, north to the Benton Range and Long Valley, and south to the southern shore of Owens Lake. Population estimates vary between 1,000 and 2,000 (Liljeblad and Fowler 1986:414-415). They have been identified as the Eastern Mono by Kroeber (1925:584-586), and as the Owens Valley Paiute, the southernmost branch of the Northern Paiute, by Steward (1933:235; 1938:50). The latter is the more commonly used designation, and the only correct one according to Steward (1933:235).

The primary ethnographic accounts of the Owens Valley Paiute are those of Steward (1933, 1934, 1938), with additional data provided by Parcher (1930) and Chalfant (1933). The ethnography and ethnohistory of the Owens Valley Paiute was recently studied by McCarthy and Johnson (2002), who examined published and unpublished literature, as well as conducted interviews with Elders of the local Paiute tribe to provide an updated context of the traditional lifeways.

7.1.3 History Background

The earliest contact between the Owens Valley Paiute and Euroamericans dates to the early 1800s, with the passing of fur trappers through the valley. After the discovery of gold in 1848, miners began searching the remote eastern Sierra Nevada region and many passed through the Owens Valley. Within the Owens Valley, gold was discovered on the Coso ledges southeast of Mono Lake and in the White Mountains, on the eastern flank of the Owens River. Although mining during this time was minimal, prospecting brought settlers to the area and numerous homestead claims were filed within the Owens Valley by the early 1860s (Costello and Marvin 1992:6).

Permanent Euroamerican settlement of the Owens Valley began in 1861 (Eggum 1940), and a number of ranches were quickly established. Ranching and farming activities within the Owens Valley expanded greatly during the late 1800s, particularly after the establishment of several large water diversion canals in 1874, built to carry water from the Owens River onto adjacent sagebrush-covered lands. By the late 1880s, more than a dozen canals and large water conveyance ditches had been established in the Owens Valley, with a cumulative length of 250 miles. At this time, approximately 46,000 acres were being irrigated, and 14,000 acres were under cultivation (Babb 1999:22).

After 1900, small Indian reservations were established near Lone Pine, Independence, Bishop, and Big Pine. By the early 1930s, most land within the Owens Valley had been purchased by the City of Los Angeles, and in 1937, Congress approved an agreement between the Department of the Interior and the City of Los Angeles involving a series of land exchanges, including the exchange of Indian reservation lands at Bishop, Lone Pine, and Big Pine for lands elsewhere (Liljeblad and Fowler 1986:429-431).

7.1.4 Affected Environment of the Project Sites

As a means to determine the potential effects of the MOU Consultant Project to cultural resources, a number of tasks were completed, including archival research and archaeological field inventory efforts. Archival research consisted of a literature review and record search of ethnographic and historic literature and maps, federal, state, and local inventories of historic properties, archaeological base maps and site records, and survey reports on file at Eastern Information Center, Department of Anthropology, University of California, Riverside. The purpose of the record search was to ascertain whether any cultural resources had been previously identified within or adjacent to the project area as well as to identify previous cultural resources investigations.

The records search revealed that no cultural resource studies have been previously conducted within the Hogback Creek area, or within a one-half mile radius of that area. For the Baker Creek study area, five archaeological studies have been conducted within a one-half mile radius of the Project, with one of these involving a portion of the current study area. The 1985 Sylmar Expansion Project archaeological survey conducted by Applied Conservation Technologies included the transmission line route from Baker Creek to Glacier Lodge Road, and this survey resulted in the recordation of one multiple component site designated CA-INY-2790/H. The records search also disclosed the locations of six recorded archaeological sites within a one-half mile radius of the Project Area. These include: a prehistoric campsite with flaked stone and steatite (CA-INY-12); a prehistoric occupation site with three rock ring features (CA-INY-1697); two prehistoric campsites with flaked stone tools (CA-INY-1698 and CA-INY-1699); a historic artifact scatter on Baker Creek (CA-INY-4552H); and an irrigation ditch system associated with the historic Steward Ranch (CA-INY-4681H).

Survey of the Baker Creek area was conducted by URS archaeologists during the period of April 27 to 29, 2005 and on May 3, 2005. Survey of the Hogback Creek area was conducted from April 30 to May 1, 2005. Archaeological sites within the Baker Creek survey area were subsequently recorded during the periods of October 13 to 15 and November 12 to 14, 2005. Site recordation within the Hogback Creek area was conducted on September 2 and during the period of November 10 to 11, 2005 (Bevill 2006).

At Baker Creek, survey was begun at the north end of the Baker Pasture, and was conducted by walking a series of parallel transects in an east-west pattern. Transects were spaced 15 to 20 m apart, and were maintained by using hand-held compasses and GPS units. These transects were continued south into the Baker Creek Exclosure and the western side of the Apple Orchard Pasture. A portion of the Brown Pasture and the southern edge of the Brown Exclosure were also examined. In addition, 30 m on both sides of the transmission line access road, extending from Baker Creek south to Glacier Lodge Road, were examined. During survey, all areas of exposed sediment and exposed bedrock surfaces were examined for cultural resources.

At Hogback Creek, north-south oriented transects were surveyed, beginning at the intersection of Moffat Ranch Road and Movie Road and working west to Hogback Creek.

Clearings within the Hogback area were carefully examined for cultural resources, while thickets of willow and other riparian vegetation received a more cursory examination.

As sites were located during the surveys, they were assigned a temporary field designation (BC-1, HC-1, etc.) and their locations were plotted onto USGS topographic maps using hand-held Garmin GPS devices. Depending upon survey efficiency, the sites were either recorded as they were located, or examined at a later time by the site recordation crew. Site recordation included site and feature mapping, completion of a site record form, and site and feature photographs. All site recordation was completed using State of California Department of Parks and Recreation Archeological Site Forms.

Site mapping included boundary delineation, location of features, proveniencing of diagnostic artifacts and artifact concentrations, and location of natural features (e.g., rock outcrops, trees) of assistance in relocating the site. In addition, to assist in the assessment of site integrity and recognition of the extent of previous impacts to sites, observable surface disturbances were also recorded. Distance and bearings to these cultural points and features were recorded from a datum established for the site. No artifacts were collected during recordation. Documentation of the survey areas consisted of notes regarding survey strategy, field constraints, and inventory results. These notes provided for clear delineation of the survey area and boundaries for map presentation in the survey report (Bevill 2006). More detailed site descriptions and location information is available in the survey report by Bevill (2006).

Baker Creek Area

Pedestrian survey of the Baker Creek area resulted in the discovery and recordation of 22 archaeological sites, including one previously recorded site (CA-INY-2790/H). Of the 22 Baker Creek sites, 11 are classified as prehistoric, four as historic, and seven as multiple component, containing evidence of both prehistoric and historic human occupation (Table 7.1-1). Prehistoric sites consist of lithic scatters and food processing artifacts. Historic sites consist of remnants of farmsteads and livestock operations and the Giroux Ditch itself. There are also several multi-component sites, consisting of both prehistoric and historic materials.

The recorded sites occur within a variety of settings, including tall sagebrush scrub habitats, riparian forest, and open grassland. Four sites were found within the Baker Pasture, four within the Baker Creek Exclosure, eight within the Apple Orchard Pasture, three within the Brown Pasture, one within the Brown Exclosure, and one along the margin of the Baker Creek and Brown exclosures (Table 7.1-1).

Hogback Creek Area

Survey within the Hogback Creek area resulted in the recordation of 10 sites, including one prehistoric site, seven historic sites, and two multiple component sites. The single prehistoric site consists of a lithic scatter and food processing artifacts. Historic site artifacts suggest early mining, ranching, and movie-making activities at the site. The sites occur primarily within open areas characterized by scattered brush. The exceptions

are HC-1, found within a thicket of willow and swamp root, and HC-2, found within a wet, grassy meadow.

Table 7.1-1 Summary of Archaeological Sites

Temporary Site Designation	State Trinomial CA-INY-	Site Type	Site Area (acres)
BC-1	---	Prehistoric	0.34
BC-2	---	Prehistoric	0.24
BC-3	---	Multi-component	0.53
BC-4	---	Prehistoric	0.01
BC-5	---	Prehistoric	0.02
BC-6	---	Prehistoric	5.53
BC-7	---	Multi-component	0.57
BC-8	---	Prehistoric	0.31
BC-9	---	Historic	0.87
BC-10	---	Multi-component	1.95*
BC-11	---	Prehistoric	0.23
BC-12	---	Multi-component	3.63
BC-13	---	Prehistoric	0.71
BC-14	---	Prehistoric	1.64
BC-15	---	Historic	0.34
BC-16	---	Multi-component	2.77
BC-17	---	Multi-component	4.89
BC-18	2790/H	Multi-component	14.00
BC-19	---	Prehistoric	0.52
BC-20	---	Prehistoric	0.82*
BC-21	---	Historic	1.55*
BC-22 (Giroux Ditch)	---	Historic	---
HC-1	---	Historic	0.01
HC-2	---	Historic	0.08
HC-3	---	Multi-component	0.32
HC-4	---	Historic	0.29
HC-5	---	Historic	0.33
HC-6	---	Historic	4.67
HC-7	---	Historic	0.91
HC-8/HC-9	---	Historic	6.38
HC-10	---	Prehistoric	0.77
HC-11	---	Multi-component	1.32

* = visual estimate

7.1.5 State Regulations

California Native American Graves Protection and Repatriation Act (2001). In the California Health and Safety Code, Division 7, Part 2, Chapter 5 (Sections 8010-8030), broad provisions are made for the protection of Native American cultural resources. The act sets the state policy to ensure that all California Native American human remains and cultural items are treated with due respect and dignity. The act also provides the

mechanism for disclosure and return of human remains and cultural items held by publicly funded agencies and museums in California. Likewise, the act outlines the mechanism with which California Native American tribes not recognized by the federal government may file claims to human remains and cultural items held in agencies or museums.

California Public Resources Code, Section 5020. This California code created the California Historic Landmarks Committee in 1939, and authorizes the Department of Parks and Recreation to designate Registered Historical Landmarks and Registered Points of Historical Interest.

California Public Resources Code, Section 5097.9. Procedures are detailed under California Public Resources Code (PRC) Section 5097.9 for actions taken whenever Native American remains are discovered. No public agency, and no private party using or occupying public property, or operating on public property, under a public license, permit, grant, lease, or contract made on or after July 1, 1977, shall in any manner whatsoever interfere with the free expression or exercise of Native American religion as provided in the United States Constitution and the California Constitution; nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require. The commission, pursuant to Sections 5097.94 and 5097.97 shall enforce the provisions of this chapter.

California Health and Safety Code, Section 7050.5. Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the Public Resources Code. In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined are archaeological. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

California Health and Safety Code, Section 7051. Every person who removes any part of any human remains from any place where it has been interred, or from any place where it is deposited while awaiting interment or cremation, with intent to sell it or to dissect it, without authority of law, or written permission of the person or persons having the right to control the remains under Section 7100, or with malice or wantonness, has committed a public offense that is punishable by imprisonment in the state prison.

Administrative Code, Title 14, Sections 4307 and 4308. Under this state preservation law, no person shall remove, injure, deface or destroy any object of mineralogical, geological, paleontological, archaeological, or historical interest or value.

7.2 IMPACTS AND MITIGATION

7.2.1 Thresholds of Significance

Significance criteria for impacts to cultural resources were developed for this project based on Appendix G of the CEQA Guidelines. This section states that the project would result in a significant impact if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Section 15064.5,
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5,
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or
- Disturb any human remains, including those interred outside of formal cemeteries.

7.2.2 Impact Evaluation Methods

In California, cultural resources include archaeological and historical objects, sites and districts, historic buildings and structures, cultural landscapes, and sites and resources of concern to local Native American and other ethnic groups. Compliance procedures are set forth in the California Environmental Quality Act (CEQA) Sections 15064.5 and 15126.4. According to Section 15064.5, a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. Lead agencies are required to identify any historic resources that may be affected by any undertaking involving state or county lands, funds, or permitting. In addition, the significance of such resources that may be affected by the undertaking must be evaluated using the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852). The criteria for significance are as follows:

- is associated with events that have made a significant contribution to the broad patterns of history or the cultural heritage of California or the United States;
- is associated with the lives of persons important in our past;
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

Furthermore, it is recommended by CEQA that all cultural resources be preserved in-situ whenever possible by avoidance. Whenever a historical resource or unique archaeological resource (Public Resources Code SS21083.2) cannot be avoided by project activities, effects shall be addressed and mitigated as outlined in SS15126.4 and SS15331 of CEQA.

Section 15064.5 of CEQA also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under California Public Resources Code (PRC) Section 5097.98.

Impacts to "unique archaeological resources" and "unique paleontological resources" are also considered under CEQA, as described under PRC 21083.2. A unique archaeological resource implies an archaeological artifact, object, or site about which it can be clearly demonstrated that—without merely adding to the current body of knowledge—there is a high probability that it meets one of the following criteria:

- The archaeological artifact, object, or site contains information needed to answer important scientific questions, and there is a demonstrable public interest in that information;

- The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type; or

- The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

A non-unique archaeological resource indicates an archaeological artifact, object, or site that does not meet the above criteria. Impacts to non-unique archaeological resources and resources that do not qualify for listing on the California Register of Historical Resources (CRHR) receive no further consideration under CEQA.

Under CEQA Section 15064.5, a project potentially would have significant impacts if it would cause substantial adverse change in the significance of one of the following:

- A historical resource (i.e., a cultural resource eligible for the CRHR)

- An archaeological resource (defined as a unique archaeological resource which does not meet CRHR criteria)

- A unique paleontological resource or unique geologic feature (i.e., where the project would directly or indirectly destroy a site or resources)

- Human remains (i.e., where the project would disturb or destroy burials).

Non-unique archaeological resources, paleontological resources, or geological resources, are given no further consideration, other than the simple recording of their existence, by the lead agency.

7.2.3 Impact Assessment

Paleontological remains are typically not well preserved in the coarse, unconsolidated sediments that comprise the surficial geology of the Project areas, although obvious paleontological materials would have been noticed and recorded in the detailed cultural resource surveys. No unique geological features were identified at either Project site. Therefore, no impact to paleontological or geological features would occur due to implementation of the MOU Consultant Project. No human remains were found in the course of the cultural resource surveys. The remainder of this section addresses the potential for impacts to historical and archaeological resources.

Historic and Archeological Resources. The following analysis is based on a complete (i.e. 100 percent) surface survey of both sites. It should be mentioned that no cultural resource survey can detect all archaeological sites or resources within a given project area due to limiting factors such as ground cover and vegetation, past impacts, and inclement weather. Deeply buried sites may be present that cannot be discovered by a surface examination of the project area. If any unrecorded cultural resources (artifacts, bone, features) are discovered during the course of Project construction, all work will cease within 30m (100 feet) of the discovery until the nature of the find can be evaluated by a qualified professional archaeologist. The Addendum that was developed following the initial cultural resources surveys at Baker and Hogback Creeks identified changes to the final enhancement plans to both project sites to avoid impacts to documented cultural resources. This Addendum states that survey of the archeological resources at both project areas revealed several historic and prehistoric sites scattered throughout the regions and that caution will be taken in the placement of new fencelines, the ORV track, fenced plantings, and in non-native tree removal to ensure that these archaeological resources and surrounding areas are not impacted during any phase of project implementation (Appendix D). As discussed below, the MOU Consultant Project would not result in significant impacts on historic and archeological resources, as implemented with the precautionary site protection measures.

Baker Creek Area

Planting. Riparian plantings are proposed in the Baker Pasture, the Apple Orchard Pasture, and the Brown Pasture. Plantings within the Apple Orchard Pasture will occur adjacent to, but not within, the recorded site boundary of BC-9, a historic homestead and orchard. Plantings within the Brown Pasture will also occur adjacent to the boundary of site BC-17, a large multi-component site. Ground-breaking activities within or immediately adjacent to these sites have the potential to disturb or displace surface and subsurface cultural materials within these potentially significant sites. As currently proposed, these plantings will take place outside the mapped boundaries of historic and archaeological resources. However, if planting must take place within these mapped site boundaries, caution will be taken to ensure that cultural resources are not impacted during project implementation. If necessary, a qualified archaeologist will flag or stake site boundaries prior to planting when location of such resources are in question. By

avoiding disturbance to these resources, such measures would ensure that no significant impacts from planting would occur.

Irrigation. Supplemental irrigation by diversions from Giroux Ditch will include construction of diversion structures within the Apple Orchard Pasture and ponded wetlands in the Brown Exclosure. Construction activities associated with supplemental irrigation will directly affect site BC-22 (the Giroux Ditch), but will not disrupt the historical integrity of the Giroux Ditch. Therefore, there would be no significant impacts to this cultural resource due to construction of diversions or changes in irrigation practices.

Black Locust Control. Black locust trees were noted within portions of sites BC-6, BC-9, BC-10, BC-12, BC-14, BC-15, BC-17, BC-18, BC-21, and BC-22. At BC-18, at least 13 black locust trees appear to have been planted in three parallel rows adjacent to a stone foundation (Feature 5), thus representing a cultural landscape element. Of these, 11 trees have already been cut to stumps, leaving two intact trees. At BC-12, such trees mark the location of a non-extant fence line. The physical removal of black locust trees from these sites, particularly BC-6, BC10, BC-12, BC-17, and BC-18, has the potential to disturb prehistoric artifact deposits and/or features. Therefore, the black locust trees occurring within the boundaries of archaeological sites will be left in place. These trees may be treated with an herbicide and left in-situ as standing snags in order to avoid the disturbance of cultural deposits. The physical removal of trees within any site should avoid the disturbance of soil; if this is not possible in a specific instance, such removal would require monitoring by a professional archaeologist. Using these precautionary measures, the black locust eradication component of the MOU Consultant Project will result in less than significant impacts to cultural resources.

Grazing Exclosures. Fencing measures would include development of three exclosures (West Exclosure, Baker Creek Exclosure, and Brown Exclosure) and the placement of a drift fence in the Brown Pasture. Fencelines would be mechanically brushed, and a fencing machine would be used install the fence. All new fencelines will be situated so that disturbance to recorded cultural resources will be prevented. If necessary, a qualified archaeologist will flag or stake site boundaries prior to fence construction when location of such boundaries are in question, so that construction crews will avoid the resource(s). In doing so, impacts to cultural resources from the construction of fences would result in a less than significant impact.

Trail Relocation. Segments of the ORV trail will be created by brushing and grading the land surface with a bulldozer. Vegetation will be removed by use of an industrial mower near the ground line. Archaeological resources identified along *existing* ORV tracks include BC-7, BC-9, BC-10, BC12, and BC-13. Such trails appear to have minimal direct impact on the sites; however, the presence of these trails within the archaeological sites have an indirect impact by allowing the public easier access to the sites. Increased foot and vehicular traffic within the archaeological sites may lead to increased looting and vandalism of such sites, since artifacts are exposed within the trails. Construction of the Baker Creek Exclosure will cut off the existing ORV track near sites BC-12 and BC-13. A new segment of ORV track will be provided parallel to the fence to provide a loop

trail. This new segment of track will be moved to avoid any direct impacts to the surface components of sites BC-12 and BC-13. By avoiding cultural resources when constructing the new segment of ORV trail, the implementation of the project will result in a less then significant impact with the incorporation of this measure.

Fuels Management. Creation of a firebreak along the power line road between Baker Creek Meadow and Glacier Lodge Road will involve the hand removal of brush 15 feet on both sides of the road, as well as the trimming of tree branches. Two archaeological sites occur within the proposed firebreak route, including BC-18 and BC-19. The sparse lithic scatter recorded as BC-19 is located southwest of the transmission line access road, and will not be directly affected by the removal of brush within 15 feet of the road. The larger site, BC-18, is bisected by the road, and includes nearly 300 meters (985 feet) of the firebreak route. Brush will be removed by hand to avoid disturbing the site deposit and surface artifacts within this potentially significant multi-component site.

Hogback Creek Area

Planting. Planting riparian vegetation within the Project Area will have no impact on the recorded archaeological sites within the Hogback Creek area.

Black Locust Control. Black locust eradication may have a direct impact to the southern portion of site HC-8/HC-9, where a row of four black locust trees were deliberately planted within the dooryard of a rock foundation and historic homestead. These trees represent a cultural landscape feature within the site. These trees will be treated with an herbicide and left in-situ as standing snags in order to avoid the disturbance of cultural deposits. Using these precautionary measures, the black locust eradication component of the MOU Consultant Project will result in less than significant impacts to cultural resources.

Grazing Exclosures. Fencing of one exclosure at the south end of the Project Area, and restoration within the exclosure, will have no impact on the recorded archaeological sites within the Hogback Creek area.

Fuels Management. If any firebreak is needed in the future around the Hogback Creek project area, the firebreak will be designed to prevent impacts to cultural resources by implementing avoidance measures as discussed above. Therefore, a qualified archaeologist may flag or stake site boundaries prior to the firebreak creation if necessary when location of boundaries are in question. By locating and avoiding cultural resource boundaries, impacts due to creating a firebreak will be negligible and at a less than significant level.

7.2.4 Significance After Mitigation

Implementation from the enhancement plans at Baker Creek and Hogback Creek will result in no or less than significant impacts with the above precautionary measures implemented; therefore, no mitigation measures are proposed.

8.0 GEOLOGY AND SOILS

The following discussion provides a brief overview of the geology and soils related to the MOU Consultant Project. This section evaluates the impacts of site geologic conditions on the MOU Consultant Project , and evaluates the impacts of the MOU Consultant Project on soil resources. These issues are evaluated in the context of potential implementation of the proposed habitat enhancement plans at Baker Creek and Hogback Creek. No significant impacts associated with geology and soils are expected from the MOU Consultant Project.

8.1 EXISTING CONDITIONS

8.1.1 Geology

The Project areas are located on the western margin of the Owens Valley. The Owens Valley is a structural depression formed by differential downward movement relative to the Mesozoic granitic batholiths of the Sierra Nevada range to the west (California Division of Mines and Geology 1966 and 1967). Compared to the valley floor, the Sierra Nevada mountains have been raised over 10,000 feet in the last three million years, forming the impressive escarpment of the eastern Sierra front. East of the Project areas, the Owens Valley bottom is filled with many thousands of feet of alluvial and lacustrine sediments shed off of the Sierra Nevada (Norris and Webb 1976).

Both the Baker Creek and Hogback Creek areas are within the Eastern California Shear Zone. This zone formerly exhibited primarily the vertical movement necessary to raise the Sierran granitic rocks. However, this zone is now primarily characterized by right-lateral distributed shear. Recent work by numerous authors suggest that up to 30 percent of the relative motion between the North American and Pacific tectonic plates is taken up along this zone, with the remainder occurring along the San Andreas and nearby faults (e.g., Taylor and Dewey 2003; Furlong 2005). The largest recorded earthquake in California history, the Owens Valley earthquake (M=8.3), occurred in 1872 with an epicenter near Independence, midway between the two Project areas. Rupture occurred along the entire 90 to 110 km length of the Owens Valley fault zone from Owens Lake in the south to slightly north of Big Pine in the north; lateral slip during that event was on the order of 6m, or about 2000 years of average slip along the entire fault zone (Bryant 1988).

Baker Creek Area

Baker and Big Pine Creeks arise in the Sierra Nevada range to the west of the site. Quaternary glacial till and moraines flank Big Pine Creek and outwash till extends from the mouth of the canyon northeast about 3 miles, nearly to the town of Big Pine (Figure 8.1-1; California Division of Mines and Geology 1967). Glaciers were much smaller in Baker Creek basin and an alluvial fan begins west of the Baker Creek area. Crater Mountain, a Quaternary cinder cone just south of the Baker Creek area, deflected to the northeast all runoff and deposition from the melting glacier in the Big Pine Creek basin, isolating the alluvial fan that underlies the Baker Creek area (Whitehorse Associates [WHA] 2004a).

The Baker Creek area is fully within a delineated Alquist-Priolo special studies zone for the Owens Valley/ Sierra Nevada Fault Zone, as shown on the most recent Alquist-Priolo fault zone map for Northern and Eastern California (Figure 8.1-2; Davis 1985). The faults present at the Baker Creek area are just west of the northern end of the possible active rupture from the 1872 earthquake. Faults within the Project area are considered to have exhibited Holocene surface rupture and present-day seismicity (USGS 2005). Surface rupture on these faults is possible outside of the currently mapped active traces of these range-front faults in the vicinity of the Project area. As a result of the active fault motions, the Baker Creek area is an island of relatively fine textured alluvium with high water table surrounded by dry, bouldery glaciofluvial fan deposits.

Hogback Creek Area

Geologic materials at the Hogback Creek area consist of Holocene alluvial deposits incised into and overlying older (Pleistocene) alluvial fan sediments deposited between the Eastern Sierra Nevada front, the northern end of the Alabama Hills (composed of bedrock equivalent to that in the Sierra Nevada), and the axis of the Owens Valley (California Division of Mines and Geology 1966; Stone et al. 2001). These alluvial deposits are variously gravelly to bouldery with a sandy matrix. The coarser-grained and matrix-dominated deposits are likely to be more indicative of debris flows, while the finer grained and gravel-dominated deposits are more likely to be associated with normal streamflow.

In contrast to the Baker Creek area, the Hogback Creek area is immediately east of a mapped surface rupture of the Sierra Nevada Fault Zone, but does not have other mapped surface ruptures within the Project area (Figure 8.1-3). It is likely that the spring which provides surface flow during summer months to the lower part of Hogback Creek is associated with this fault. No Alquist-Priolo Special Study Zones are mapped within the Hogback Creek area (Figure 8.1-4; Davis 1990). However, the Lone Pine Fault at the eastern margin of the Alabama Hills was the locus of rupture in the 1872 earthquake.

8.1.2 Soils

Soils formed on the geologic materials at the Project areas are developed in direct response to both the recency of deposition of the underlying material and the soil moisture regime, with slight influence related to land slope (Birkeland 1984). Detailed descriptions of the soil series at each Project area can be found in WHA (2004a, b).

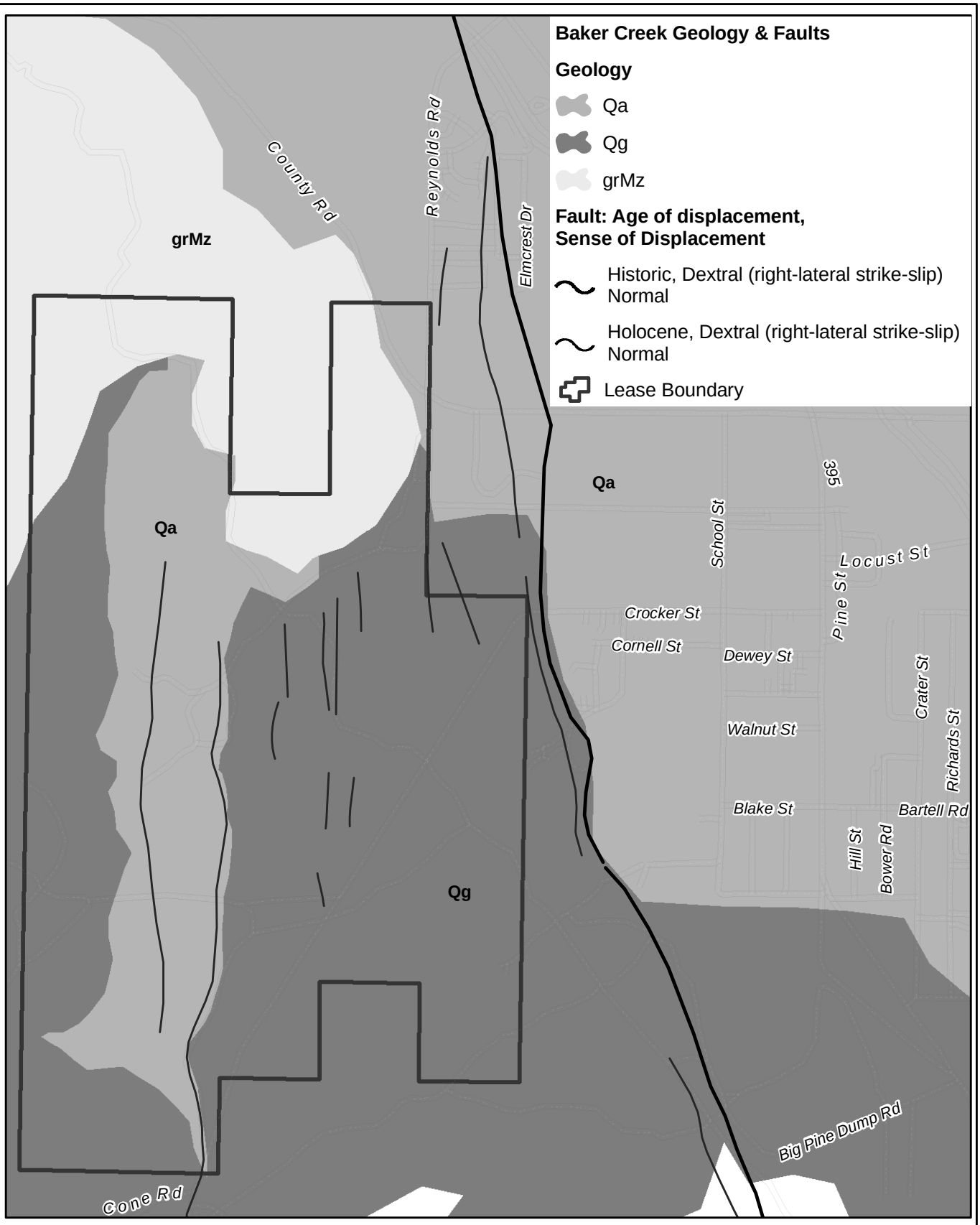
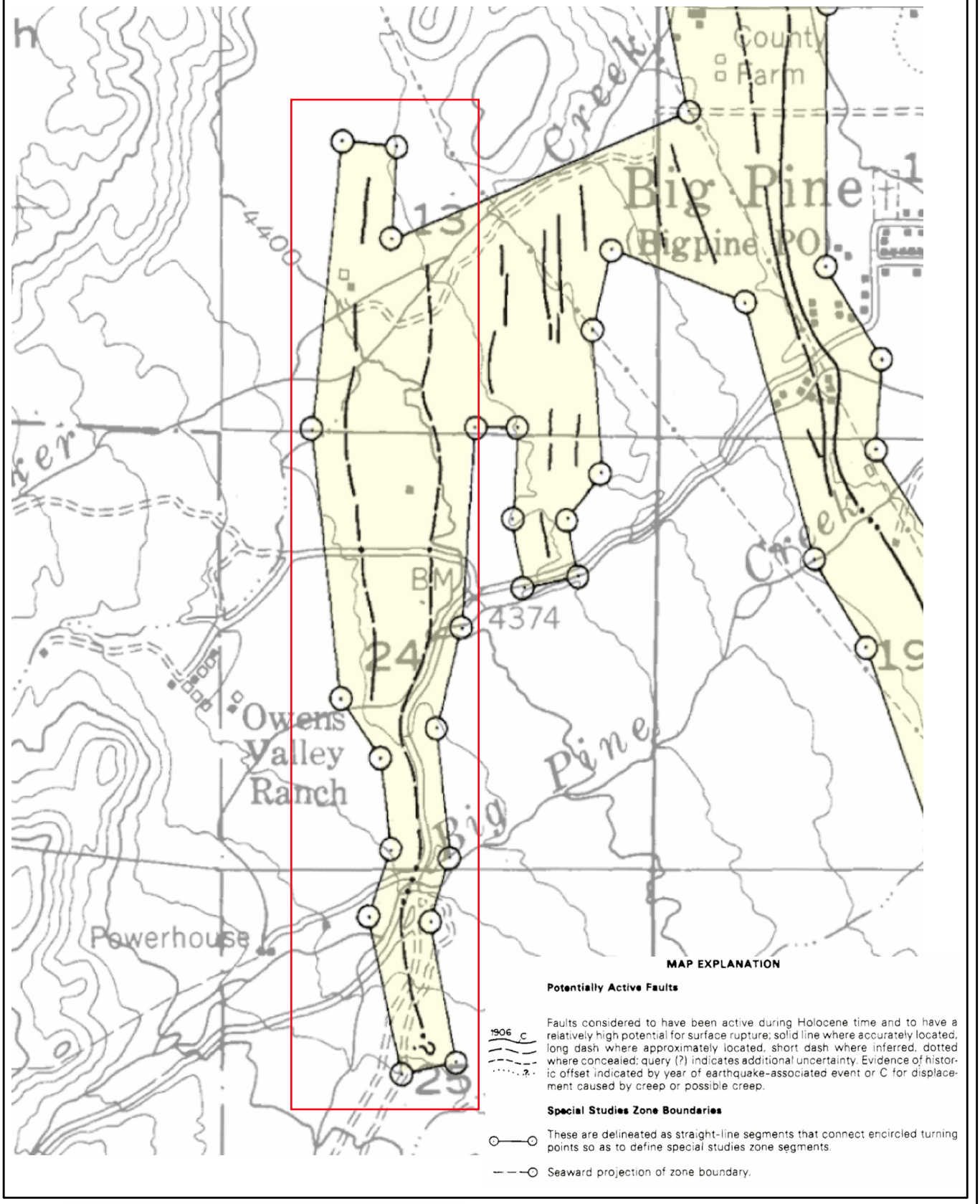


Figure 8.1-1
Baker Creek Geology

Data Source: California Geological Survey 2000

January 2006



SCALE 1:24,000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 80 FEET

DATUM IS MEAN SEAL LEVEL

Data Source: Davis 1985

Figure 8.1-2
Alquist-Priolo Special Studies Zones at Baker Creek Project Area

January 2006

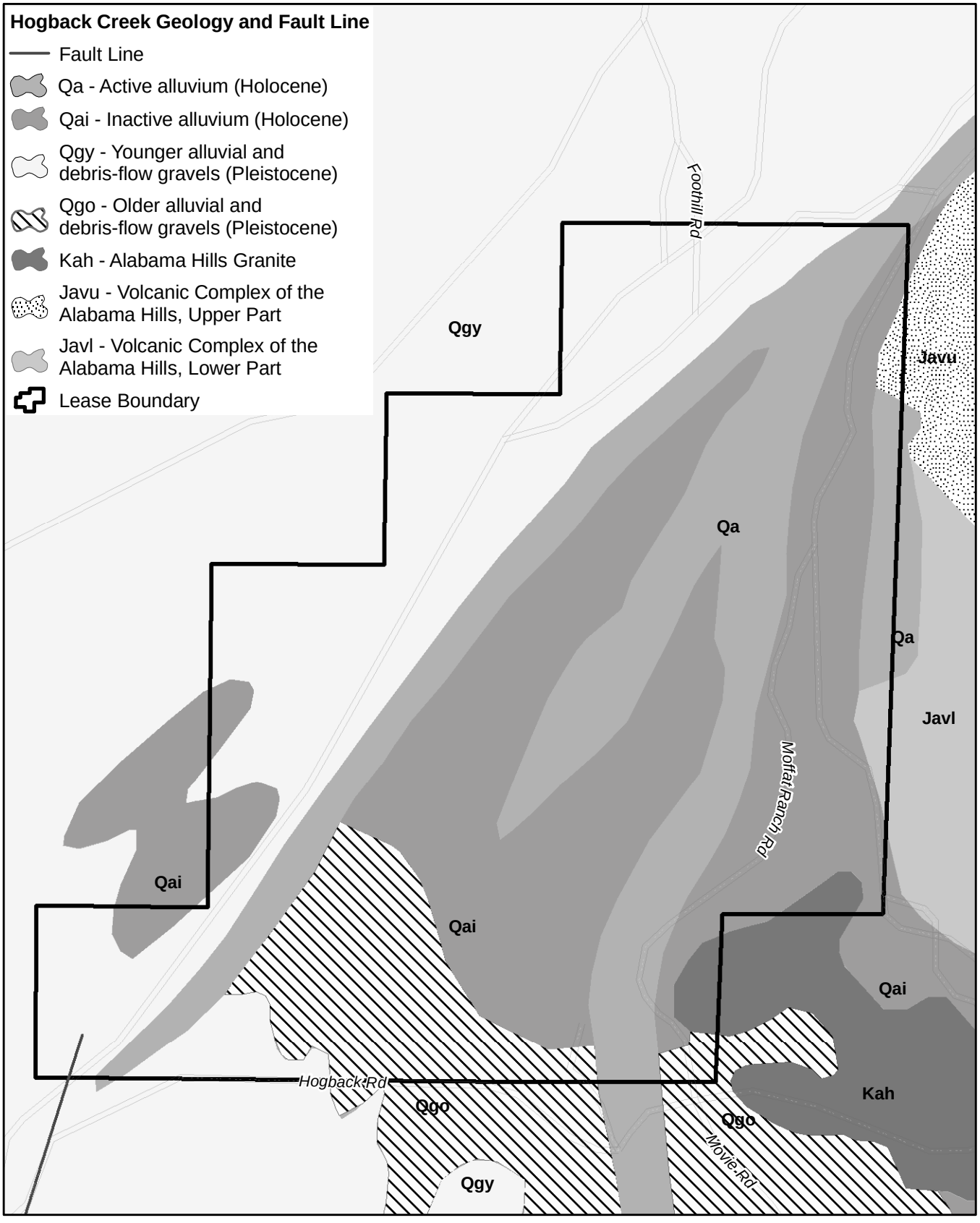
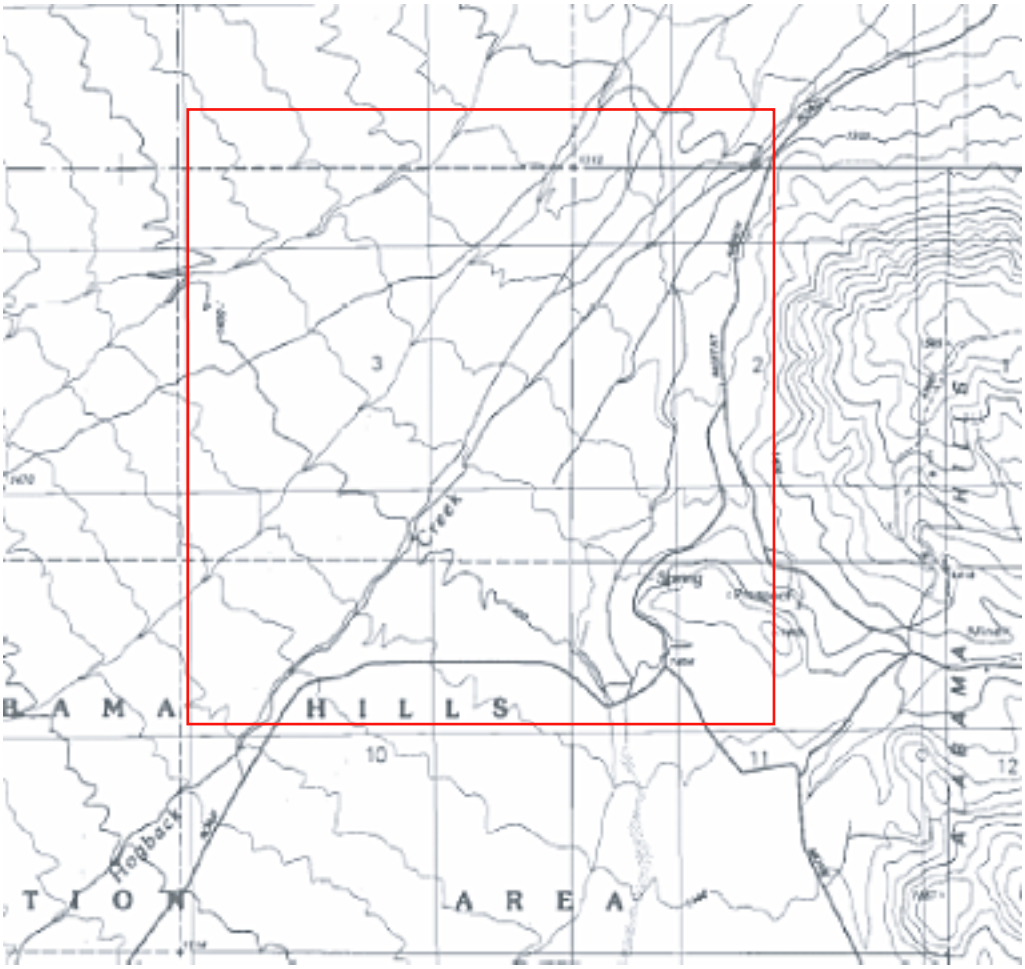


Figure 8.1-3
Hogback Creek Geology

Data Source: Stone et al.2001

January 2006



MAP EXPLANATION

Potentially Active Faults

1906 C

Faults considered to have been active during Holocene time and to have a relatively high potential for surface rupture; solid line where accurately located, long dash where approximately located, short dash where inferred, dotted where concealed; query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by creep or possible creep.

Special Studies Zone Boundaries

These are delineated as straight-line segments that connect encircled turning points so as to define special studies zone segments.

Seaward projection of zone boundary.

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 20 METERS
SUPPLEMENTARY CONTOUR INTERVAL 2.5 METERS
NATIONAL GEODETIC VERTICAL DATUM OF 1929
CONTROL ELEVATIONS SHOWN TO THE NEAREST 0.1 METER
OTHER ELEVATIONS SHOWN TO THE NEAREST METER
TO CONVERT METERS TO FEET MULTIPLY BY 3.2808
TO CONVERT FEET TO METERS MULTIPLY BY 0.3048

GANDA

Figure 8.1-4
Alquist-Priolo Special Studies Zones at Hogback Creek Project Area

January 2006

Baker Creek Area

The Baker Creek area is dominated (at 84 percent of the Project area) by the Dehy-Conway-Lubkin Association, a group of soils consisting of sandy loam to gravelly loamy sand (Figure 8.1-5; NRCS 2005). All are characteristic of active or recently inactive portions of alluvial fans, and exhibit soil-forming processes up to 60 inches below ground surface. This soil association boundary is mapped as coinciding with the central core of the area that currently supports tree growth. This area also likely represents a down-dropped basin between fault segments, bounded by bedrock outcrops at the north end. They are moderately erodible by water and less erodible by wind, somewhat poorly to very poorly drained, with a saturated hydraulic conductivity ranging from 28-63 microns per second (240-540 centimeters per day), and organic matter content ranging from 0.9-1.8 percent . Moist bulk density is approximately 1.56 grams per cubic centimeter. Soils in the Conway series have contributions from volcanic ash. The Lubkin soil series portion of this association is coarser, more resistant to erosion, and better drained. The association is considered prime farmland if irrigated and drained. A portion of the Dehy and Conway soil series and inclusions of Mountom peaty muck are hydric soils (WHA 2004a).

Other soils present at the Baker Creek area are generally coarser grained (predominantly loamy sands or coarser), less prone to erosion, better drained, and more permeable than the Dehy-Conway-Lubkin Association. They also have lower organic matter content and higher bulk density than the Dehy-Conway-Lubkin Association soils. Clockwise from the southwest, they are:

- Goodale loamy coarse sand covers 4 percent of the Project area and is found in the portion of Brown Pasture south of the riparian vegetation associated with the tributary to Big Pine Creek, and north from the southern Baker Creek distributary channel to the northern fence of the West Exclosure;

- Goodale-Cartago Complex, a loamy coarse sand with variable amounts of gravel, covers 8 percent of the area and is found from the Brown Exclosure between the Giroux ditch and willow thickets north across Sugarloaf Road to the southern distributary channel of Baker Creek both on the margins of the Warren Bench Pasture and the southwestern corner of the Baker Creek Exclosure;

- Cartago gravelly loamy coarse sand (5-30 percent slope) in the northwestern corner of the Baker Pasture west of the Baker Ditch covers about 2 percent of the Project area;

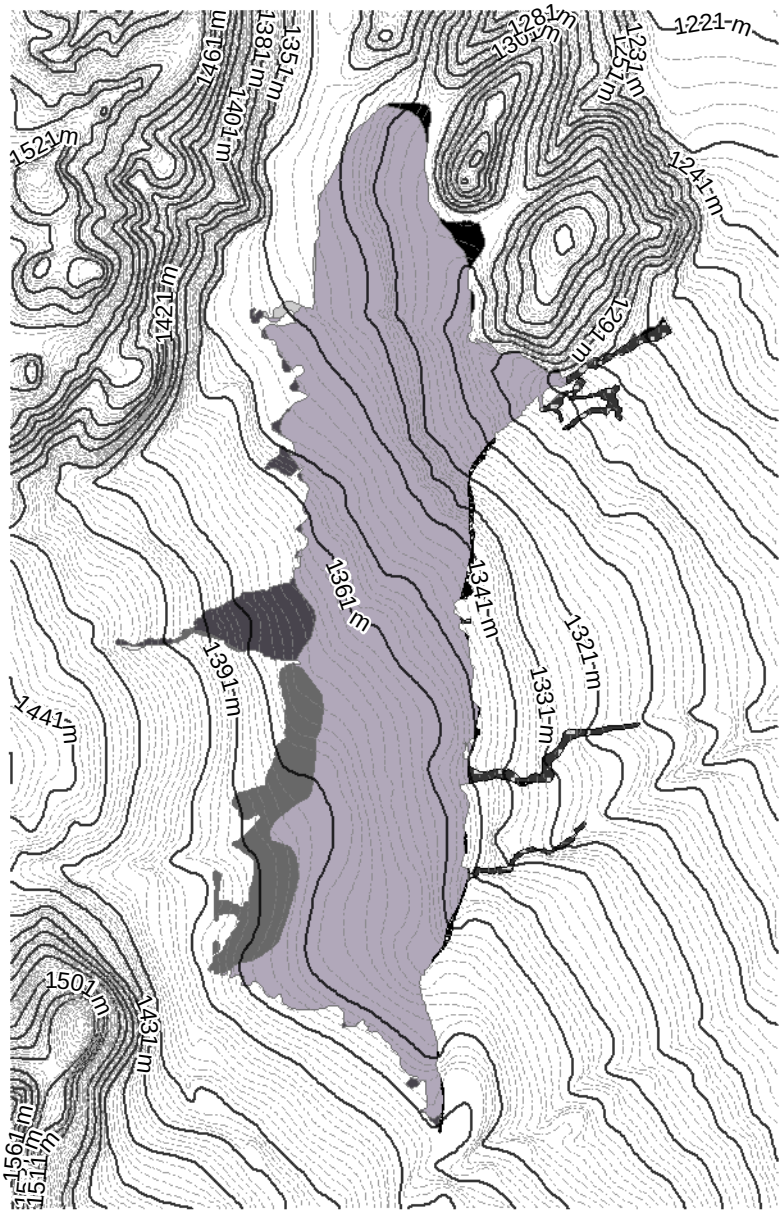
- Whitewolf-Toquerville Association on the bedrock hills of the North Pasture covers about 2 percent of the Project area. WHA has questioned this map unit designation but not proposed an alternative. The soils in this association are deep (Whitewolf) to shallow (Toquerville), dry, heavily influenced by windblown sand and the underlying bedrock or alluvial fan materials. At the Baker Creek Project area, these soils are dominantly shallow;

2 Meter Contours

- Minor
- Major (10 m interval)

Baker Creek Soils

- Unknown
- Cartago gravelly loamy coarse sand, 5 to 30 percent slopes
- Dehy-Conway-Lubkin association, 0 to 9 percent slopes
- Goodale loamy coarse sand, 5 to 15 percent slopes
- Goodale-Cartago complex, 5 to 15 percent slopes
- Lubkin-Tinemaha complex, 5 to 15 percent slopes
- Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
- Whitewolf-Toquerville families association, warm, 15 to 50 percent slopes



0 0.2 0.4 Miles

N

Figure 8.1-5
Baker Creek Soils

Data Source: Ecosystem Sciences & USGS 2005

January 2006

Print Date: 12/20/2005 CBW File Path: K:\Owens Valley_Yellow_Billed_Cuckoo\mxd\Project_Template\Baker Creek Soil Features.mxd

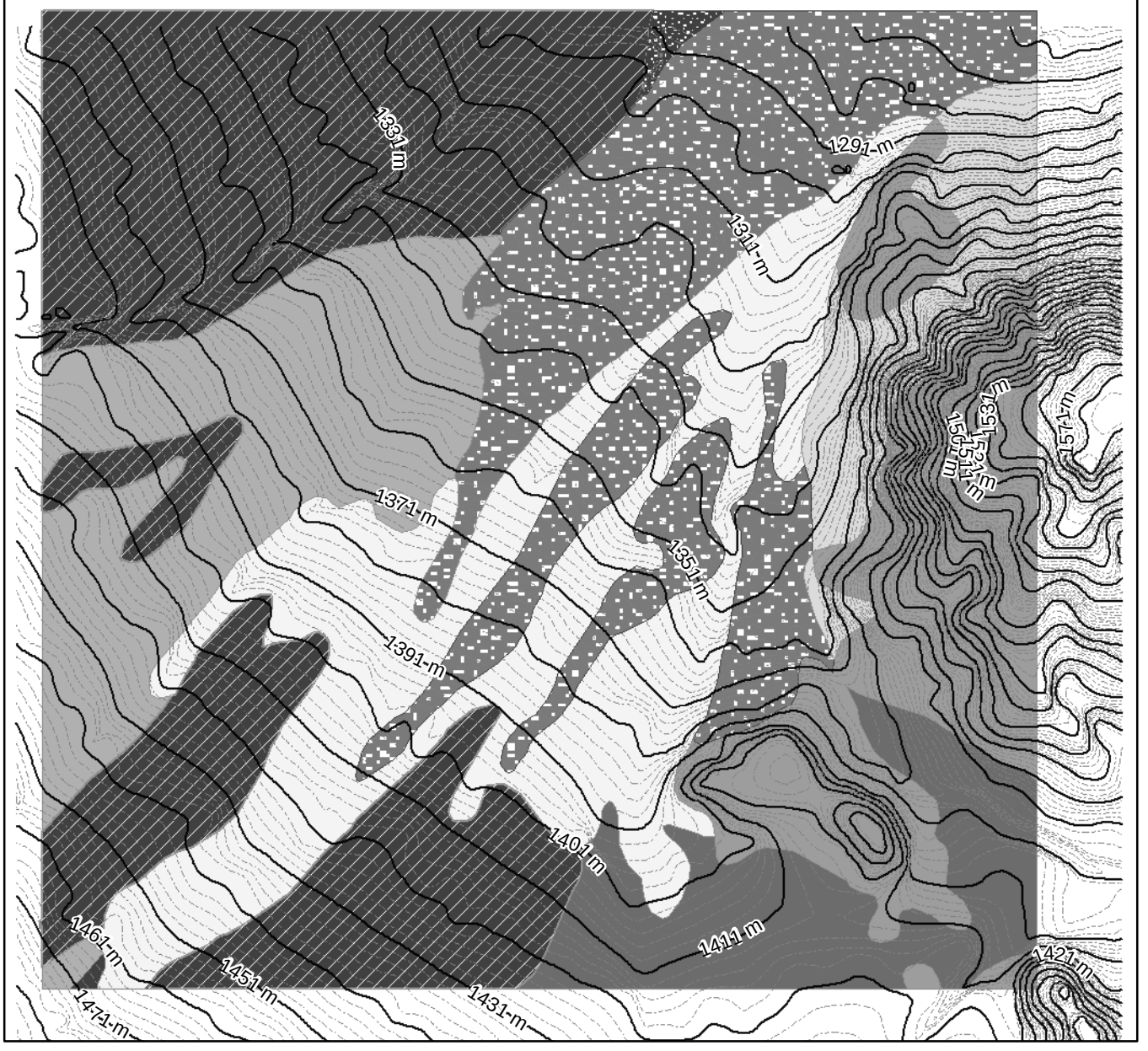


Figure 8.1-6
Hogback Creek Soils

Data Source: Ecosystem Sciences & USGS 2005

January 2006

- Lubkin-Tinemaha Complex (5-15 percent slope) of loamy sands with varying amounts of gravel covers 2 percent of the Project area. It is found in the Apple Orchard, Brown, and Big Pine pastures east of the area of Dehy-Conway-Lubkin Association soils. This complex exhibits a moist soil phase (i.e., potentially hydric soils) along Baker Creek, Big Pine Creek, and in former creek channels that dissect the alluvial fan east of the main Baker Creek Project area.

Hogback Creek Area

Soils at the Hogback Creek area are similarly dominated by the Dehy-Conway-Lubkin Association under riparian forested areas, with Lubkin-Tinemaha Complex soils on higher (older) portions of the alluvial fan (Figure 8.1-6).

Only a minor area of another soil is present at this Project area: the Lucerne gravelly sandy loam interfingers with the Dehy-Conway-Lubkin complex in the southeast corner. The Lucerne soil is similar to the Conway portion of the Dehy-Conway-Lubkin association, but has a shallow clayey subsoil and very low organic matter. The degree of soil development indicates that this soil series is found on the oldest segments of the alluvial fan surfaces at the Project area (Birkeland 1984).

8.2 IMPACTS AND MITIGATION

8.2.1 Thresholds of Significance

Thresholds of significance for geology and soils were developed from the CEQA Guidelines Appendix G (CCR 2005). Effects of the project with respect to geology and soils are considered significant if they would result in the following conditions:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - 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[2];
    - Strong seismic ground shaking;
    - Seismic-related ground failure, including liquefaction;

[2] Because the proposed Projects do not result in construction of structures for human habitation, they are not actually subject to the setback or disclosure provisions of the Alquist-Priolo Earthquake Fault Zoning Act [California Public Resources Code 2621.6]. Wildlife habitat and grazing are land uses that are compatible with zoned special study areas under this Act.

- Landslides.

- 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

- Result in substantial soil erosion or the loss of topsoil.

Other significance thresholds listed in the CEQA Guidelines, related to expansive soils and wastewater disposal (including septic systems) are not applicable to this project.

8.2.2 Impact Assessment

Geology. The relationship between the Project areas and the Alquist-Priolo special study zones described above indicates that ground rupture and seismic shaking is foreseeable at both the Baker Creek and Hogback Creek areas. The impacts of this occurring are expected to be equivalent between the proposed alternatives. Ground rupture and seismic shaking may be somewhat more probable at the Baker Creek area due to the greater density of mapped faults. Recurrence of substantial earthquakes on these faults has not been established. Earthquake recurrence for damaging events on the Owens Valley fault zone that ruptured in 1872 is also not well known, but is likely to be greater than the design life of most infrastructure in the valley (Bryant 1988).

The Project does not expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault. The MOU Consultant Project will not include the construction of above-ground buildings or similar infrastructure. Above-ground structures that will be built with the Project are diversions from existing irrigation ditches and fences (including a corral).

The Project does not expose people or structures to potential substantial adverse effects involving strong seismic ground shaking. Strong ground shaking is probable at both the Baker and Hogback Creek areas in the event of an earthquake along nearby surface expressions of the Sierra Nevada Fault Zone. However, the structures that will be built – diversions from existing irrigation ditches and fences – can be expected to withstand at least some strong seismic ground shaking from earthquakes with minimal loss, as evidenced by historical photographs of fence line offsets from prior quakes (e.g., the 1906 San Francisco earthquake, as seen in Pt. Reyes National Seashore north of San Francisco). Outside of the period of vegetation installation and black locust eradication, people will be unlikely to regularly visit the Project area. If such visits were to occur during a quake, substantial areas of relatively bare ground without overhead hazards located throughout the Project areas would be safe locations for people to gather during and after an event.

The Project does not expose people or structures to potential substantial adverse effects involving strong seismic related ground failure. Ground failure by liquefaction requires saturated soils, which is not likely to occur most of the time at either site except immediately adjacent to flowing creeks. In addition, the coarse-grained, well drained and well graded soils such as occur at both sites are less susceptible to liquefaction than finer

grained, poorly graded soils such as occur closer to the axis of the Owens Valley. No structures are associated with the Project that would involve substantial adverse effects if they were damaged in an earthquake.

The MOU Consultant Project does not expose people or structures to potential substantial adverse effects involving landslides because no structures are associated with the Project that would involve substantial adverse effects if they were damaged. Equally important, both sites are located well away from the mountain front which has slopes steep enough to initiate a landslide during an earthquake—the western margin of the Baker Creek Project area is located 1,500-2,000 feet toward the valley center from the toe slopes of the Sierra, while Hogback Creek is located over two miles from the valley margin. Portions of both locations could experience debris flows if saturated materials within nearby mountain stream valleys were released during an earthquake or as a result of an extreme meteorological event (e.g., heavy rainfall, rapid melt of a high snowpack). However, damage to project infrastructure from such events—trees, fences, or ditches, etc.—would not reach the level of substantial adverse effect for the project proponent. These features could be rebuilt or re-established easily.

The MOU Consultant Project is not likely to result in exposure of people or structures to potential adverse effects due to strong seismic ground shaking, seismic-related ground failure (including liquefaction), or landslides. The Project would also not contribute to unstable geologic conditions. Therefore, the MOU Consultant Project would not have an effect on geologic conditions, and would not be affected by adverse geologic conditions.

Soils. Both Project areas are located on the alluvial apron (also known as a bajada) of the Sierra Nevada Mountain front. Soils at these sites are geologically young and weakly developed on water-laid sediments that are themselves coarse grained, with a sandy matrix around gravels, cobbles, and boulders. This sediment likely extends to several 10s to 100s of feet below the land surface, overlying competent (generally igneous) bedrock (California Division of Mines and Geology 1966, 1967). Except for stream banks and terrace margins, the land slope is gentle, between 5 and 10 percent. Combined, the soils+bedrock+land surface slope is not of the proper character to become susceptible to landsliding. As described above, the soils are not particularly susceptible to liquefaction and related lateral spreading. Soil collapse, induced in coarse-grained soils by shaking (such as can occur during an earthquake or from heavy traffic), can be a risk for structures built on dry alluvial fan soils such as those found at the site. However, no structures that would be at risk in the case of soil collapse are planned for the site. The soils at the Project areas are not susceptible to subsidence in the absence of additional site modification such as groundwater withdrawal, and no groundwater withdrawal that could induce subsidence is planned for the Project areas.

Multiple roads and trails are present on the Project sites. There would be minor disturbances to topsoil during grading of the ORV trail, water diversions, and conveyance or storage features at the Baker Creek Project area. The footprint of fence construction would be mechanically brushed, but topsoil would not be disturbed. Woody vegetation would be removed by hand from the firebreak and ground cover maintained with the existing herbaceous plant material, so no topsoil disturbance would be expected from this

activity.[3] Ground cover in the firebreak should be naturally sufficient to prevent accelerated soil erosion. Negligible ground disturbance would be associated with planting of cottonwood and willow, and removal of black locust from the Project areas. The maximum affected area is estimated in Table 8.2-1.

Table 8.2-1 Summary of Estimated Maximum Area of Topsoil Disturbance, Baker Creek Project Site

Project Activity	Maximum Estimated Area of Soil Disturbance (in acres)
ORV Trail Construction	0.2
Water Distribution	1.2
Total	1.4

Soil erosion could occur on a temporary basis at each location of disturbance until the ground surface is stabilized. Disturbance is not expected from the potential installation or movement of portable irrigation. Areas disturbed to install or stabilize diversion structures would be revegetated as necessary. These areas are assumed to consist of approximately 15×15 foot areas on the adjacent floodplain that would be disturbed for construction access and keying the structure into the bank, and an approximately 7.5 foot length of each bank downstream of the newly installed structure that could be subject to minor bank erosion until the channel bank is stabilized. The ponds (or at least the pond margins) would be reseeded with native wetland herbaceous material and allowed to revegetate quickly. Areas that remain unvegetated due to inundation could be eroded by wind if exposed. The distribution channels downstream from the ponds could experience erosion due to flowing water until or unless they revegetate or develop a gravel armor. However, infiltration of water at the downhill end of these channels would result in the deposition of eroded soils and sediments. The ORV trail would remain permanently unvegetated and subject to soil erosion, which would be exacerbated in the presence of substantial traffic until or unless a gravel lag deposit forms. The ORV trail segment that is being abandoned would be allowed to revegetate.

Soil erosion rates were modeled for the Baker Creek Project area using the FS-Disturbed Water Erosion Pilot Project (WEPP) model (USFS 2004) and—for the ponds—the NRCS wind erosion susceptibility index (NRCS 2005). The WEPP model is designed for rangeland and forestland applications. It estimates both initial and long-term erosion rates for a number of soil/vegetation combinations using the Bishop climate record. With the exception of potential wind erosion in the event that the ponds are not kept either inundated or vegetated, soil erosion rates are expected to be quite low due to the relatively low slope gradients at the site, low precipitation, and the high infiltration rates

[3] A fire break is listed as a component of the Hogback Creek YBC Enhancement Plan (ESI 2005b, pg.5) that would be constructed only in the event of controlled burns. LADWP does not plan to use fire as a management tool for the Project, so this fire break will not be constructed.

and the general volume of gravelly and bouldery material in the soils. Soil erosion is expected to occur within the firebreak and diversion ditches at levels similar to regional background rates that are well below the soil loss tolerance rates set by the NRCS (2005) for local soils.

Table 8.2-2 Estimated Annual Soil Erosion From Land Disturbance, Baker Creek Project Site

Project Activity	Estimated Annual Soil Loss (tons)
ORV Trail	0
Water Distribution	2.7 Temporary 2.3 Permanent
Total	2.7 Temporary 2.3 Permanent

The potential for soil erosion from the site would be reduced by several elements of the proposed plans, including revegetation of the sites following construction. These potential impacts would remain substantial as noted in Table 8.2-2 above. Therefore, these impacts are considered locally significant. Measures are included below and would reduce these impacts to a level that is less than significant.

Together, soil disturbance is predicted to exceed one acre (Table 8.2-1). In the event that soil disturbance remains above this one acre threshold as final implementation details are developed, a Storm Water Pollution Prevention Plan (SWPPP) would be prepared for the Project and incorporated into final Project plans and specifications, as required by the Construction Activity General Permit administered by the State Water Resources Control Board. This SWPPP will outline project-specific best management practices (BMPs) to minimize both soil erosion and sediment delivery to surface waters on lands disturbed in the course of project construction. The primary BMP used at the site will be revegetation following disturbance as closely in time as practicable. Additional erosion and sediment control BMPs to be used during the course of the Project could include (CSQA 2004):

- EC-2 Preservation of Existing Vegetation
- EC-6 Certified Weed-Free Straw Mulch
- EC-7 Geotextiles & Mats (e.g., applied locally along disturbed streambanks as described in EC-12 below)
- EC-9 Earth Dikes and Drainage Swales
- EC-12 Streambank Stabilization (with a preference for solutions that support bank revegetation)

- SE-1 Silt Fence (used locally along with or instead of fiber rolls or straw bale barriers to eliminate delivery of sediment to surface waters)

- SE-4 Check Dam (to assist spreading of water in channels downstream of diversions)

- SE-5 Fiber Rolls (used locally as needed along with or instead of silt fences or straw bale barriers to eliminate delivery of sediment to surface waters)

- SE-9 Certified Weed-Free Straw Bale Barrier (used locally as needed along with or instead of silt fences or fiber rolls to eliminate delivery of sediment to surface waters)

- WE-1 Wind Erosion Control

- NS-1 Water Conservation Practices

- NS-2 Dewatering Operations (as needed for construction of footings for diversion structures)

- NS-4 Temporary Stream Crossing (if needed)

- NS-5 Clear Water Diversion (for use during construction of diversion structures as needed, scaled to the size and configuration of the irrigation ditches in which the diversions would be placed)

- NS-7 Potable Water/Irrigation.

These BMPs would be adapted as appropriate to suit the arid rangeland setting of the Project Areas and the specific type and amount of disturbance expected, with the primary goal to limit soil erosion to the maximum extent practicable and enhance revegetation of disturbed areas as much as possible. The specific BMP measures used for the Project would be described in the SWPPP. The implementation of BMPs described above would render the planned soil disturbances and any associated soil erosion less than significant.

8.2.3 Significance After Mitigation

Implementation of the proposed plans is not expected to result in a significant affect from the risk of loss, injury or death due to seismic activity. The limited area of ground disturbance, coupled with site conditions and appropriately used BMPs if necessary, would result in no significant impact from soil erosion.

9.0 HAZARDS

The following discussion provides a brief overview of the potential hazards related impacts resulting from the MOU Consultant Project , including hazardous materials and the potential for increased risk of wildland fire. These issues are evaluated with regard to the proposed implementation of the habitat improvement plans in the Baker Creek and Hogback Creek Project areas. No significant impacts from hazardous material use or wildfires are expected to result from implementing the MOU Consultant Project.

9.1 EXISTING CONDITIONS

9.1.1 Hazardous Materials

The methods used for this evaluation included a site reconnaissance, contacts with LADWP staff, and a review of available environmental databases. The report does not include a formal Phase 1 or Phase 2 site evaluation per the American Society for Testing and Materials (ASTM) methods 1527 and 1903[4]. The focus of this effort is on the changes to the site resulting from the construction and implementation of the MOU Consultant Project. Formal Phase 1 and 2 site evaluations were deemed unnecessary given the rural setting and intended use of the site for this project. Consequently, an exhaustive review of records and databases pertaining to hazardous substances at or near the proposed site was not conducted. In addition, there was no testing of the soil or groundwater for hazardous substances; or surveys or sampling for asbestos, lead paint, drinking water, or radon. Two forms of hazardous materials would be used during construction and implementation of the MOU Consultant Project —petroleum products associated with motorized equipment, and herbicides associated with vegetation control. Both of these substances present potential exposure risks to humans in the Project areas.

Government Code Section 65962.5 refers to lists of facilities that may be subject to specific management requirements, past releases, cleanup activities, or deed restrictions related to hazardous waste. No sites listed on the CalEPA website (DTSC 2005) or Inyo County website are within the MOU Consultant Project area.

The Memorandum of Understanding for the Eastern Sierra Weed Management Area (Inyo and Mono Counties et. al. 1998) calls for the use of herbicides as needed to control weeds, but such activity has not been necessary in the MOU Consultant Project areas.

Baker Creek

LADWP has owned the parcels at the Baker Creek site since the mid- to late 1920s to early 1930s. No disposal of hazardous waste is known to have occurred on this site. Detailed land use maps show that the site was a mixture of cultivated area (alfalfa, corn, wheat and grasses, pumpkins, orchards and vineyards), mowed pastures, and unmanaged or weedy lands (LADWP 1930). There were also several homesteads in the Project area.

[4] ASTM methods represent standard of practice for site investigations relating to disclosure of environmental liabilities (e.g., hazardous materials distribution) in support of property transfer activities.

No information is readily available concerning the use of hazardous materials associated with agricultural activities at this site prior to purchase of the property by LADWP. However, the prior land use suggests that there is little likelihood that residual hazardous materials would be present in areas likely to be disturbed by the MOU Consultant Project at concentrations representing a substantial risk to human health or the environment.

Petroleum products, e.g., diesel and gasoline, are not regularly used at the Baker Creek Project area. Grazing and land management activities, incidental passenger vehicle traffic, and ORV use at the site all introduce gasoline powered vehicles to the Project area, which in turn produces the potential for minor spills of petroleum products (e.g., gasoline, oil, and grease). No active use of pesticides on the site is known to LADWP staff.

Hogback Creek

No disposal of hazardous waste is known to have occurred on this site (DTSC 2005). The Hogback Creek Project area has been less intensively used and managed than the Baker Creek site, with fewer roads through it, less traffic, and less evidence of prior intensive agricultural use. Cultural resource surveys found evidence of homesteads, a movie set, and one or two arrastras (used for milling gold ore). As with the Baker Creek site, no information is readily available concerning the use of hazardous materials associated with agricultural, mining, or movie making activities at this site prior to purchase of the property by LADWP. However, the available information on prior land use suggests that there is little likelihood that residual hazardous materials would be present in areas likely to be disturbed by the MOU Consultant Project at concentrations representing a substantial risk to human health or the environment.

9.1.2 Fire Protection and Fuels

Baker Creek

Existing Fuel and Ignition Sources. Fuel load is the total amount of combustible material in a defined space. It is usually quantified by weight in wood or combustible vegetation. Wildfire is the result of the interaction of three factors: air, fuel and an ignition source. In the Baker Creek area, the primary fuel is vegetation, which consists of grasses, forbs, sagebrush, riparian vegetation such as cottonwoods, and black locust trees. Ignition could be from many sources, including human-set campfires or discarded cigarettes, or lightning.

Modeling fuel load has become a valuable approach for the prediction of fire behavior and assessing the potential intensity and severity of wildfires. Ideally, remote-sensing data of the area are correlated with field data on fuel load and vegetation condition. To precisely estimate fuel load for an area is a complex procedure involving estimates of ground cover, age, height, and cover for each class of vegetation, grazing levels, and other factors (Weber et al. 2004).

Using the BLM's fuel load estimation procedures, Anderson (1982) developed fuel models for estimating fire behavior in different vegetation communities. The ecosystem

most closely resembling the composition of the Baker Creek area was Fuel Model 2: sage/grasslands with scattered stands of timber. This fuel model is estimated to possess four tons per acre total fuel load. This estimate would apply to an ungrazed area. However, livestock grazing can reduce primary fuel load in sagebrush ecosystems, by as much as half (Weber et al. 2004). Thus, the current fuel load in the Baker Creek area is likely to be approximately two tons per acre.

Local Fire History. A 1995 fire burned a quarter of the forested lands within Baker Creek Lease. A 1999 fire burned an additional 24 acres of woodland riparian habitat in the Brown Pasture. These burns covered one of the two main YBC activity areas (ESI 2000).

Firefighting Policies and Agreements. The Baker Creek area is part of the CDF Direct Protection Area (DPA), wherein CDF has primary responsibility for wildfire response. The nearest CDF stations are Station 59 in Independence, approximately 25 miles to the south of the Baker Creek site, and Station 58 at the Owens Valley Conservation Camp in Round Valley, approximately 15 miles northwest of Bishop.

Estimated response time for a fire in the Baker Creek area is 30 minutes from CDF Station 59. CDF Station 58 and the Big Pine Volunteer Fire Department would also respond. CDF also maintains radio contact with the Bureau of Land Management (BLM) and the United States Forest Service (USFS) who can also respond to wildfires in this area (Leon Guerrero pers. comm.).

Hogback Creek

Existing Fuel and Ignition Sources. In the Hogback Creek area, the primary fuel is vegetation, which consists of grasses, forbs, sagebrush, riparian vegetation such as cottonwoods, and black locust trees, an introduced species. Ignition could be from many sources, including human-set campfires or discarded cigarettes, or lightning.

Application of the BLM's fuel load estimation procedures Fuel Model 2: sage/grasslands with scattered stands of timber in grazed lands provides an estimate of two tons of fuel per acre for the grazed lands at Hogback Creek (Anderson 1982, Weber et al. 2004)

Local Fire History. Most of the Hogback Creek Lease burned in 1987. The fire was set intentionally to improve rangeland condition for better livestock grazing. However, it went out of control and burned most of the riparian woodlands on the site. A 1999 field evaluation (ESI 1999) found that riparian trees and shrubs were recovering from the 1987 fire effects.

Firefighting Policies and Agreements. The Hogback Creek area is part of a CDF Fire Prevention Direct Protection Area (DPA), wherein CDF has primary responsibility for wildfire response. The nearest CDF station is Station 59 in Independence, approximately 10 miles to the north of the project site. The response time from Station 59 to Hogback Creek is estimated to be 10 to 15 minutes (Leon Guerrero. pers. comm.).

In addition, CDF maintains radio contact with other fire response units, including the local volunteer fire department in Lone Pine (approximately five miles away), the USFS and BLM. Thus, a combination of these agencies could respond to any wildfire in this area.

9.2 IMPACTS AND MITIGATION

9.2.1 Thresholds of Significance

Thresholds of significance for hazards were developed from Appendix G of the CEQA Guidelines. Project-related impacts from hazards are considered significant if they would result in the following condition:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Would 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;
- For a project located within an airport land use plan or, where such as 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 in the project area;
- For a project within the vicinity of a private airstrip, should the project result in a safety hazard for people residing or working within the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- 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.

CEQA checklist issues related to public and private airstrips are not relevant to the MOU Consultant Project, as neither project area is located within the vicinity of aviation facilities.

9.2.2 Impact Assessment

Hazardous Materials Use and Handling. Implementation of the proposed habitat enhancement plans will require the routine transport of limited quantities of fuel and

herbicide. Fuel use associated with power equipment and vehicles that use petroleum-based fuels and lubricants will be limited, and will primarily occur only during the construction phase of the project. Limited use of herbicides may be necessary for eradication of black locust, control of rangeland weeds, and, in the future, during adaptive management of the site to control invasive non-native plants.

Use of these hazardous materials will be carefully monitored to limit exposure of humans or environmental receptors. Portions of the Baker Creek site are within ¼ mile of the Bernasconi Education Center. Fuel would be contained within the manufacturer's tanks on all powered heavy equipment onsite, or in approved canisters for powered hand equipment (e.g., chainsaws). A fuel/service truck would visit the site as needed, parking at a non-sensitive location such as a road shoulder on level ground. Equipment operators would move equipment to the fuel/service truck for refueling. No fuel will be stored onsite.

LADWP would apply pesticides in a highly targeted manner to individual woody plants. If herbaceous plants would require treatment, targeted patches would be carefully treated. These actions will be employed to substantially eliminate release or accidental exposure to humans or the environment. Pesticides used to control invasive plants and weeds (including, but not limited to black locust) shall conform to the provisions in Section 20-4.026, "Pesticides," of the Standard Specifications (Caltrans 1999)Except as otherwise provided in these Specifications, pesticide use shall be limited to a chemical approved by the U.S. Environmental Protection Agency (EPA). Only trained and licensed personnel will apply pesticides. Herbicides would likely consist of the following:

- Garlon 4® Herbicide with triclopyr (as butoxyethylester; BEE) as the active ingredient (62 percent) and kerosene as one of the inert ingredients.

This material would be contained onsite only in very small quantities (e.g., the 2.5 gallon container in which it is packaged) sufficient for a single day use by backpack-sized sprayers. According to the Material Safety Data Sheet (Crop Data Management Systems 2005), Garlon 4 exhibits low levels of human and ecological toxicity in terrestrial environments, and bioconcentrates and biodegrades moderately. Care would be taken to avoid exposure of aquatic habitats to this herbicide. All other label directions would also be followed.

The actions described above, along with appropriate BMPs, will be employed to substantially eliminate release or accidental exposure to humans or the environment. BMPs such as those listed below could be used as appropriate, modifying specific procedures to site conditions, to further reduce the risk of release of hazardous materials (CSQA 2004).

- NS-8 Vehicle and Equipment Cleaning
- NS-9 Vehicle and Equipment Fueling
- NS-10 Vehicle and Equipment Maintenance

- WM-1 Material Delivery and Storage (including the use of suitable labeling and packaging for proper transport of hazardous materials to the site)
- WM-2 Material Use
- WM-3 Stockpile Management
- WM-4 Spill Prevention and Control
- WM-5 Solid Waste Management (for construction debris, if any)
- WM-6 Hazardous Waste Management (e.g., governing disposal of used petroleum product or pesticide containers in appropriate locations, not onsite).

Implementation of the MOU Consultant Project, with proper onsite pesticide use and the above BMPs associated with the handling of fuels, lubricants, and pesticides is expected to result in a less than significant impact to sensitive human or environmental receptors.

Increase in Ignition Sources. Implementation of the YBC habitat enhancement plans will require the routine transport of limited quantities of fuel through the project area. Fuel use associated with power equipment and vehicles that use petroleum-based fuels and lubricants will be limited and will primarily occur during the construction phase of the project. The project could include the use of motorized equipment for brushing fence lines and firebreaks. Additional ignition sources used during construction could also include heavy equipment and off road vehicle use.

To minimize the risk of wildfire due to increased ignition sources in the project area, LADWP will implement Best Management Practices for fuel use, transport, disposal, and prevention of accidental releases, as mentioned previously.

Increase in Fuel Loading and Risk of Wildfire. Plan implementation will involve the permanent or temporary removal of livestock grazing from specified exclosures on the Baker Creek and Hogback Creek sites. Removal of grazing and additional irrigation will promote more vegetative growth resulting in increased fire fuel loading. Future grazing and wildlife habitat management changes within both the Baker and Hogback Creek sites may increase the volume of fuels, and in turn, increase fire frequency potential. The major impact in the past to wildlife habitat in the area has been from fire. Therefore, more effort will be needed to prevent and manage fire within the areas in the future. The enhancement plans include several elements that would manage increased fuel loading and the potential risk of fire to local communities.

For the Baker Creek portion of the project, measures have been incorporated to decrease the potential risk of wildland fire to the nearby population. Fuels treatment and maintenance will be conducted along the road adjoining the transmission line that runs between Baker Creek Meadow and Glacier Lodge Road. The prescription for the fire fuels treatment will be to remove 15 feet of brush on both sides of the road by hand, leaving native grasses and forbs for groundcover, and trim tree branches within the

treatment area to a height of 10 feet. This work is expected to affect 2.9 acres of brush outside the project area, and is designed to establish a secure firebreak between the project area and occupied areas to the east. The risk of loss due to wildland fire at Hogback Creek is low because the site does not abut any occupied structures or populated areas.

In addition, the project area will be managed to minimize the risk of wildfire by minimizing the presence of fuel and ignition sources. Among the measures taken will be a prohibition on burning, firewood cutting or wood gathering by any individual on the Hogback or Baker Creek Lease without written approval from LADWP. Since there is currently evidence of wood gathering/fire making on both the Hogback and Baker Creek sites, increased enforcement of the existing rules may become a greater priority.

In addition, the lessees for each site will not be allowed to burn any part of the Lease without LADWP approval. Any managed burning conducted for the purpose of improving rangeland, wildlife habitat, and/or watershed condition, will be conducted under the direction of LADWP in accordance with the Department's Fire Risk and Control Management Plan (LADWP 2005).

Implementation of the proposed plan at Hogback Creek is expected to increase fuel loads on the site with the establishment of riparian vegetation. Burning restrictions would manage potential ignition sources and a firebreak would be installed prior to any controlled burns. Because this site is well removed from structures, residences, or urban areas, and includes measures to control and manage fire risk, the resulting risk of loss, injury or death due to wildfire is considered less than significant.

Implementation of the proposed plan at Baker Creek would also increase fuel loads with the growth of riparian vegetation within the exclosures and establishment of riparian plantings in other areas. Burning restrictions would manage potential ignition sources and a firebreak would allow for fire management between the enhancement plantings and the community of Big Pine. The implementation of the proposed enhancement plan for yellow-billed cuckoo habitat and the measure to control and manage wildfire are expected to result in a less than significant impact due to the risk of loss, injury or death due to wildfire.

9.2.3 Significance After Mitigation

The MOU Consultant Project is not expected to result in significant exposures or releases of hazardous materials or effects from the risk of loss, injury or death due to wildfire. Therefore, there is no need for mitigation.

10.0 NOISE

This section describes the existing noise environment in and around the study area surrounding the proposed Yellow-billed Cuckoo Habitat Enhancement Projects at Baker Creek and Hogback Creek (Project) in Inyo County and how that may be affected by the implementation of the Project. Receptors that may be affected by noise are identified, as well as the criteria that evaluate the compatibility of noise at those receptors. The following discussion describes the fundamentals of acoustics, acoustical calculations, and assessment of potential noise impacts from construction associated with the Project. Where appropriate, mitigation measures are proposed to reduce potential project related noise impacts to acceptable levels.

10.1 EXISTING CONDITIONS

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that disrupts or interferes with normal human activities. Although exposure to high noise levels over an extended period has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise, and its appropriateness in the setting, the time of day, the type of activity during which the noise occurs, and the sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations, which travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by a number of variables including frequency and intensity. Frequency describes the sound's pitch and is measured in Hertz (Hz), while intensity describes the sound's loudness and is measured in decibels (dB). Decibels are measured using a logarithmic scale. A sound level of 0-10 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions (Table 10.1-1). Normal speech has a sound level of approximately 60 dB. Sound levels above about 120 dB begin to be felt inside the human ear as discomfort and eventually pain at still higher levels. The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. An increase (or decrease) in sound level of about 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness, and this relation holds true for loud sounds and for quieter sounds.

Because of the logarithmic nature of the decibel unit, sound levels cannot be added or subtracted directly and are somewhat cumbersome to handle mathematically. However, some simple rules of thumb are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. Thus, for example: 60 dB + 60 dB = 63 dB, and 80 dB + 80 dB = 83 dB.

Hertz is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a number of times per second. A particular tone that makes the drum vibrate 100 times per second generates a sound pressure wave that is oscillating at 100 Hz; this pressure oscillation is perceived as a tonal pitch of 100 Hz. Sound frequencies between 20 Hz and 20,000 Hz are within the range of sensitivity of the best human ear.

Sound from a tuning fork (a pure tone) contains a single frequency. In contrast, most sounds one hears in the environment do not consist of a single frequency, but rather a broad band of frequencies differing in sound level. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound according to a weighting system that reflects that human hearing is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources that creates a relatively steady background noise in which no particular source is identifiable. A single descriptor called the equivalent sound level (Leq) is used. Leq is the mean A-weighted sound level during a measured time interval. It is the "equivalent" constant sound level that would have to be produced by a given source to equal the fluctuating level measured. In addition, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the Lmax and Lmin indicators. They represent the RMS (or root-mean-square) maximum and minimum obtainable noise levels during the monitoring interval. The Lmin value obtained for a particular monitoring location is often called the acoustic floor for that location.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. They are the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of a stated time. Sound levels associated with the L10 typically describe transient or short-term events, while levels associated with the L90 describe the steady-state (or most prevalent) noise conditions.

Another sound measure known as the Day-Night Average Noise Level (Ldn) is defined as the A-weighted average sound level for a 24-hour day. It is calculated by adding a 10 dBA penalty to sound levels in the night (10:00 p.m. to 7:00 a.m.) to compensate for the increased sensitivity to noise during the quieter evening and nighttime hours. The Ldn is used by agencies such as the U.S. Department of Housing and Urban Development (HUD), the State of California, and the County of Inyo to define acceptable land use compatibility with respect to noise. Sound levels of typical noise sources and environments are provided in Table 10.1-1 to provide a frame of reference.

Table 10.1-1 Sound Levels Of Typical Noise Sources and Noise Environments (A-Weighted Sound Levels)

Example Noise Source (at a Given Distance)	Scale of A-Weighted Sound Level in Decibels	Example Noise Environment	Human Judgment of Noise Loudness (Relative to a Reference Loudness of 70 Decibels)
Military Jet Take-off with			
After-burner (50 ft)	140	Carrier Flight Deck	
Civil Defense Siren (100 ft)	130		
Commercial Jet Take-off (200 ft)	120		Threshold of Pain
			*32 times as loud
Pile Driver (50 ft)	110	Rock Music Concert	*16 times as loud
Ambulance Siren (100 ft)	100		Very Loud
Newspaper Press (5 ft)			*8 times as loud
Power Lawn Mower (3 ft)			
Motorcycle (25 ft)	90	Boiler Room	*4 times as loud
Propeller Plane Flyover (1,000 ft)		Printing Press Plant	
Diesel Truck, 40 mph (50 ft)			
Garbage Disposal (3 ft)	80	High Urban Ambient Sound	*2 times as loud
Passenger Car, 65 mph (25 ft)			Moderately Loud
Living Room Stereo (15 ft)			*70 decibels
Vacuum Cleaner (3 ft)	70		(Reference Loudness)
Electronic Typewriter (10 ft)			
Normal Conversation (5 ft)	60	Data Processing Center	*1/2 as loud
Air Conditioning Unit (100 ft)		Department Store	
Light Traffic (100 ft)	50	Private Business Office	*1/4 as loud
Bird Calls (distant)	40	Lower Limit of Urban	Quiet
		Ambient Sound	*1/8 as loud
Soft Whisper (5 ft)	30	Quiet Bedroom	
	20	Recording Studio	Just Audible
	10		Adult Threshold of Hearing
	0		Threshold of hearing in the mid frequencies for young adults

Source: Compiled by URS Corporation and National Institute for Occupational Safety and Health (2006)

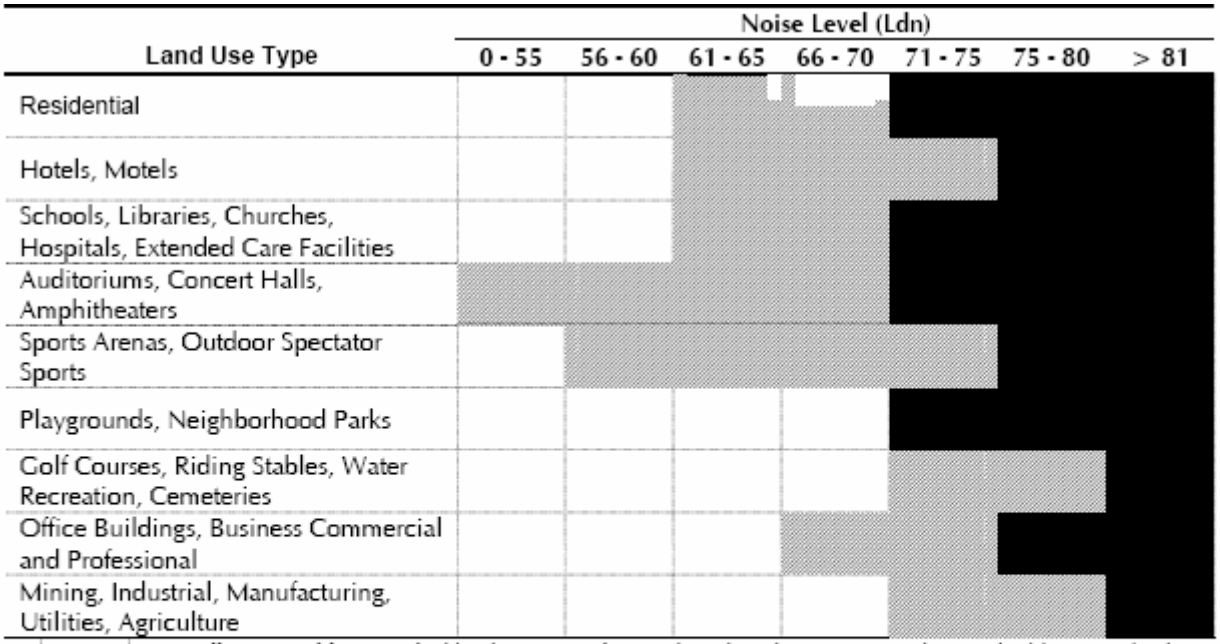
10.1.1 Applicable Noise Standards

The Inyo County Code (2005) does not specifically have a noise ordinance related to noise, construction or otherwise. However, the General Plan provides guidance on acceptable noise levels within the county. This guidance is summarized below.

Inyo County Noise Element of the General Plan

Inyo County's General Plan contains policies governing noise related to development within Inyo County (Inyo County 2001, Section 9.7 *Noise*). The maximum allowable noise exposure limits for noise exposure by land use is provided in Figure 10.1-1. Based on the figure, maximum allowable noise exposure limits at the sensitive receptors would be 60 dBA Ldn.

The Noise Element also states, "Contractors will be required to implement noise-reducing mitigation measures during construction when residential uses or other sensitive receptors are located within 500 feet."



Source: Inyo County Noise Standards

Figure 10.1-1 Maximum Allowable Ambient Noise Exposure By Land Use

10.1.2 Surrounding Land Uses and Receptors

Some land uses are considered sensitive to noise. Noise-sensitive receptors are land uses associated with indoor and outdoor activities that may be subject to stress or significant interference from noise. They often include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, educational facilities, libraries, and cemeteries.

Baker Creek

Surrounding land uses of the Baker Creek site include open range with seasonal grazing managed by the BLM, USFS, and LADWP. The Bernasconi Education Center is located at the southwestern boundary of the project site. This Inyo County Schools facility houses curriculum support offices, provides intermittent program delivery for special education and outdoor education for Inyo County Schools, and is intermittently rented to education and community groups for short-term residential accommodations and program space (Bobbie Lovig, Dan Munis, pers. comm., January 6, 2006). The Palisade Glacier Alternative High School is located west of the MOU Consultant Project site just north of the Bernasconi Center (Gerry Dame, pers. comm., January 6, 2006).

Sensitive receptors near the Baker Creek site include the Bernasconi Education Center and Palisade Glacier High School approximately 500 feet to the southwest, the district high school and an elementary school located in the town of Big Pine approximately1.2 miles to the east, and local residences located in Big Pine approximately 1 mile to the east.

Hogback Creek

Surrounding land uses of the Hogback Creek site are open range with seasonal grazing. The Hogback Creek site is located approximately seven miles to the north of the community of Lone Pine. This site is in a remote area with no residences and/or facilities within three miles. The closest sensitive receptor to the project area is an elementary school approximately 6.7 miles to the southeast (Lo-Inyo Elementary). Other sensitive locations in the town of Lone Pine include a hospital (Southern Inyo Hospital), a hospice (Hospice of Southern Inyo), and the district schools including Lone Pine High School, another elementary school (Olancha) and two pre-schools (Mt. Whitney, and Warren E Hanson).

10.2 IMPACTS AND MITIGATION

10.2.1 Thresholds of Significance

Thresholds of significance for noise were developed from the CEQA Guidelines Appendix G (CCR 2005). Effects of the project with respect to noise are considered significant if they would result in the following conditions:

- 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.

- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

These Project areas are not located sufficiently near either a private airstrip or public airport. Therefore, the CEQA significance thresholds related to noise exposure in such a setting are not relevant to this project, as described in the NOP.

10.2.2 Impact Assessment

Noise. Construction activities at the proposed sites would result in a short-term, temporary increase in the ambient noise level. Noise would result from the operation of construction equipment. The increase in noise level would be primarily experienced close to the noise source. The magnitude of the impact would depend on the type of construction activity, noise level generated by various pieces of construction equipment, duration of the construction phase, and distance between the noise source and receiver. Figure 10.3-1 shows maximum noise levels generated by typical construction equipment. Sound levels of typical construction equipment range from approximately 65 dBA to 95 dBA at 50 feet from the source (U.S. Environmental Protection Agency [U.S. EPA] 1971).

To provide for additional riparian cover for the yellow-billed cuckoo, the project will 1) plant and maintain additional riparian vegetation; 2) implement a black locust eradication program; 3) construct three grazing exclosures, 4) construct two ponds, and 5) construct two new diversions and repair three existing diversions.

In order to construct the project, equipment expected to be utilized includes several medium-duty pickup trucks (up to 8 onsite), utility trucks or heavy-duty pickup trucks (up to 4 onsite), small and large excavators (up to 3 onsite), a small bulldozer, a truck-crane (if necessary for constructing diversion structures), quad-all terrain vehicles (ATVs; up to 5 onsite), a mower, a fence machine, and chain saws (up to 4 onsite). The duration of use for this equipment varies, with the largest equipment in use for one to two weeks at each site during construction and other equipment in use only a few days in the first year. The medium-duty pickup, quad-ATV, mower, and chain-saws would also be used periodically for additional planting or maintenance.

Acoustical calculations were performed to estimate noise from construction activities at the closest sensitive receptors. Noise from the activity was assumed to have point source acoustical characteristics. Strictly speaking, a point source sound decays at a rate of 6 dB per doubling of distance from the source. This is a logarithmic relationship describing the acoustical spreading of a pure, undisturbed spherical wave in air. The rule applies to the propagation of sound waves with no ground interaction. The calculations are based on the formula below (Harris 1998):

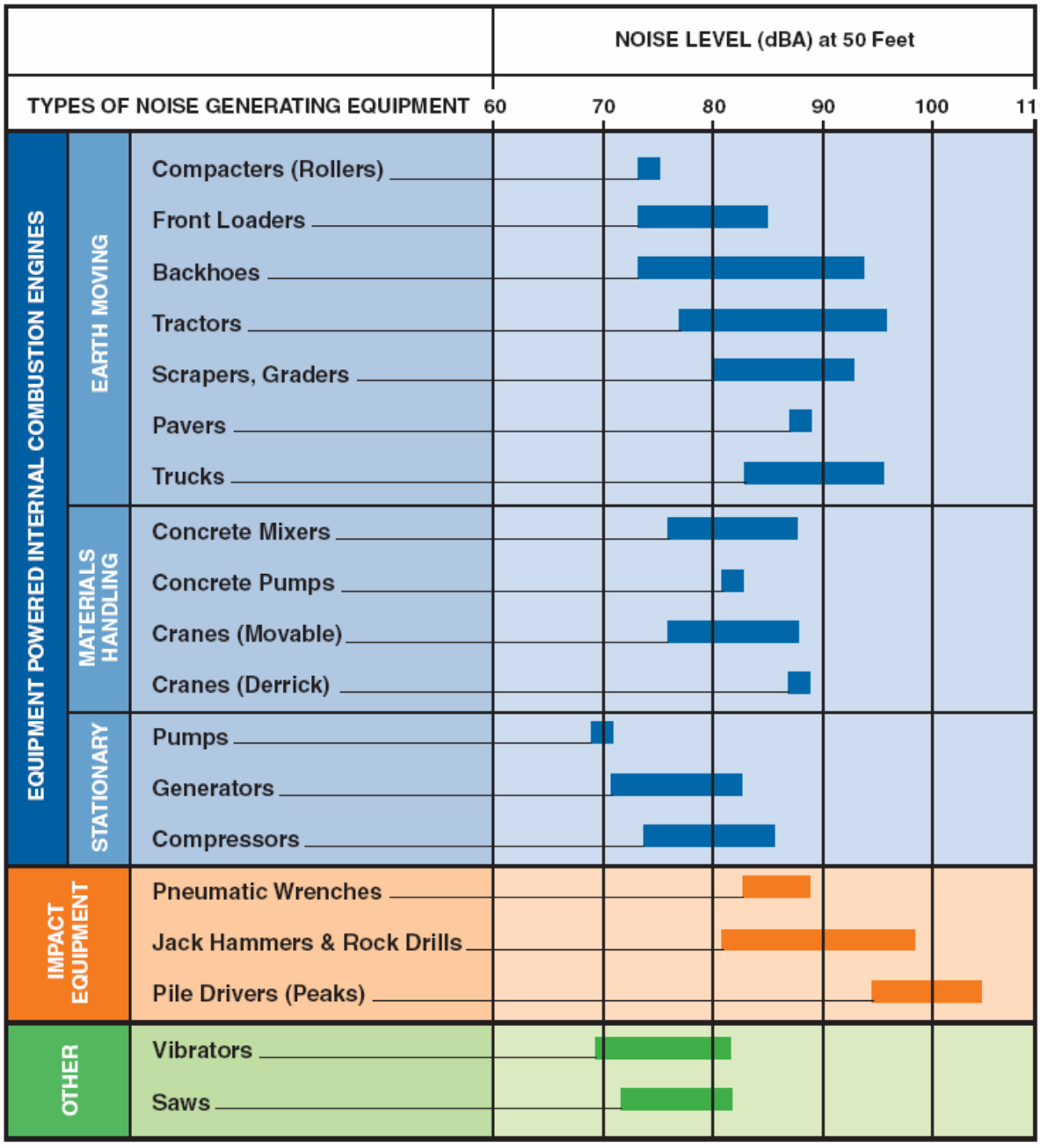


Figure 10.2-1 Typical Construction Equipment Noise Generation Levels

$$SPL_2 = SPL_1 - 20\log\left(\frac{d_2}{d_1}\right)$$

Where: SPL1 = known sound level, SPL2 = desired sound level, d1 = known distance, and d2 = desired distance.

The closest sensitive uses to the proposed Baker Creek site consist of the Bernasconi Center and Palisade Glacier High School located 500 feet southwest of the site. The next closest sensitive uses to this site are the high school and an elementary school located approximately1.2 miles to the east, and local residences located in Big Pine approximately 1 mile to the east. Worst case sound levels at the Bernasconi Center and Paliside Glacier High School may range from 45 to 75 dBA, 23 to 53 dBA at the schools in Big Pine, and from 25 to 55 dBA at the residences in Big Pine, as summarized in Table 10.2-1. Because of the intermittent nature of construction work, the average sound level experienced in a work day would be expected to be substantially less than predicted. Furthermore, because there would be no construction work at night, the Ldn experienced at receptors would be below the required 60 dBA Ldn.

The Hogback Creek site is located approximately seven miles to the north of the community of Lone Pine. This site is in a remote area with no residences and/or facilities within five miles. The closest sensitive receptor to the project area is an elementary school approximately 6.7 miles to the southeast (Lo-Inyo Elementary). Worst case sound levels at the receptors may range from 8 to 38 dBA, as summarized in Table 10. 2-1. Because of the intermittent nature of construction work and intervening topography or structures, the average sound level experienced in a work day would be expected to be substantially less than predicted. Furthermore, due to the distance and intervening topography/structures, the noise from the project may not be audible at the receptors.

Table 10.2-1 Calculated Sound Levels from Project Construction

Distance to Closest Receptors	Receptors	Calculated Sound Level (dBA)
500 feet	Bernasconi Center, Baker Creek Project Site	45-75
1 miles	Big Pine residences, Baker Creek Project Site	23-53
1.2 miles	Big Pine schools, Baker Creek Project Site	23-53
7 miles	Lone Pine residences, Hogback Creek Project Site	8-38

Based on the acoustical calculations, noise from activities associated with the MOU Consultant Project would be below the Inyo County land use compatibility requirement of 60 dBA Ldn. Furthermore, because no construction would occur within 500 feet of residences, no mitigation measures would be required. In addition, the types of noise sources associated with the project are relatively common in these rural settings. Therefore, the MOU Consultant Project would not result in significant impacts due to noise.

10.2.3 Significance After Mitigation

No significant noise impacts were identified; therefore, no mitigation would be required.

11.0 RECREATION

11.1 EXISTING CONDITIONS

This section discusses applicable recreation plans and policies and recreational opportunities available in the project areas at Baker Creek and Hogback Creek, the recreational facilities within and adjacent to the project areas, their locations, and known recreational uses.

11.1.1 Applicable Recreation Plans and Policies

On lands administered by LADWP, the use, management, and protection of existing recreational facilities and the development of future recreational opportunities in Inyo County are guided by the Inyo County General Plan and LADWP's recreation plans and policies. On adjoining lands administered by the Bureau of Land Management (BLM) and United States Forest Service (USFS), recreational planning is also guided by federal policies and plans administered by each agency. Federal plans do not apply to the Project sites. The following is an overview of the recreational planning guidance pertaining to implementation of proposed enhancement plans for Baker and Hogback creeks.

Inyo County General Plan. The Inyo County General Plan Open Space Element identifies recreation goals for the County as the development of a public parks, recreation and open space system that provides adequate space and facilities to meet the varied needs of County residents and visitors. Policies under this goal include the encouragement of the continued management of existing recreational areas and open space, and appropriate expansion of new recreational opportunities on federal, state, and LADWP lands, and the enhancement of existing County recreational parks and campgrounds. The implementation plan for this goal requires that the county work with agencies that manage Inyo County land to ensure that appropriate access to open space and recreational areas is provided. It also specifies that the county will work with LADWP to assist in the improvement and enhancement of County parks on LADWP lands (Inyo County 2001).

LADWP Land Management. LADWP policies for undeveloped land allow for diverse recreational uses, including fishing, hunting, hiking, picnicking, birdwatching and other activities that do not degrade the land, water, or wildlife resources. Use of mechanized ORVs (including all-terrain vehicles, motorcycles, etc.) is limited to existing roads and trails in order to reduce disturbance to plants and wildlife and minimize further degradation of soils and landforms (ESI 2005a, b).

Hunting and Fishing Regulations. Within the project area, the California Fish and Game Commission (CFGC) regulations provide for the hunting of upland game birds and deer within designated zones within designated time periods. The project sites are included within Zone A for upland game and Zone X9b for deer. The hunting seasons for these animals are published each year by the CFGC. In addition, hunting and fishing regulations are also available from this source (CFGC 2005).

11.1.2 Recreational Use at Baker Creek and Hogback Creek Sites

The following is a description of the current recreation use at the Baker Creek and Hogback Creek sites, as well as the Baker Creek Campground adjacent to the Baker Creek project site. There are no recreational facilities in close proximity to the Hogback Creek project site.

Baker Creek Site. The Baker Creek site has had fairly unrestricted access and use by local recreational users for over half a century. Currently, there is unrestricted recreational day use, except where posted, through all of the Baker Creek area. Recreational users typically follow a "good neighbor" policy of leaving gates open or closed as they find them, and not disturbing agricultural, grazing or water diversion areas (ESI 2005a).

The main recreational uses of the Baker Creek area are associated with ORV use, hunting, fishing, mountain-biking, hiking, and birdwatching, with other miscellaneous uses, such as paintball shooting.

ORVs are used in a large area on the west side of the site along Sugarloaf Road. The area includes a parking area south of the road and a sand pit area north of the road. The main ORV trail leads from the sand pit to the east and has several side trails. ORV activities are highly visible in this area, and ORV use is planned to continue with minor changes during, and subsequent to, the enhancement plan implementation (Figures 11.1-1 and -2). Paint residues were found around the ORV tracks north of Sugarloaf Road, indicating probable paintball shooting activity in this area as well (ESI 2004).

Overnight camping is allowed on LADWP lands only in designated campgrounds, such as Baker Creek Campground, which is located directly east of the Project site. There are no designated campgrounds located within the Baker Creek site boundaries. Fires are prohibited outside of designated campgrounds.

Many types of hunting occur in the area, but the primary activities in the Baker Creek area are deer, quail and dove hunting. Hunting is subject to CDFC regulations, as mentioned previously, which prohibit discharge of firearms within 150 yards of occupied buildings, farms, livestock, public roads, and highways. The start of hunting season varies from year to year, but typically starts around September 1st. In 2005, dove hunting began September 1, quail hunting September 10, and deer hunting September 17 or later, in the vicinity of the Project Area (CFGC 2005).

Seasonally, the Baker Creek area is used extensively for fishing in the creek and adjoining ponds. Recreational fish species caught in the area include brown trout (*Salmo trutta*) and rainbow trout (*Oncorhynchus mykiss*).

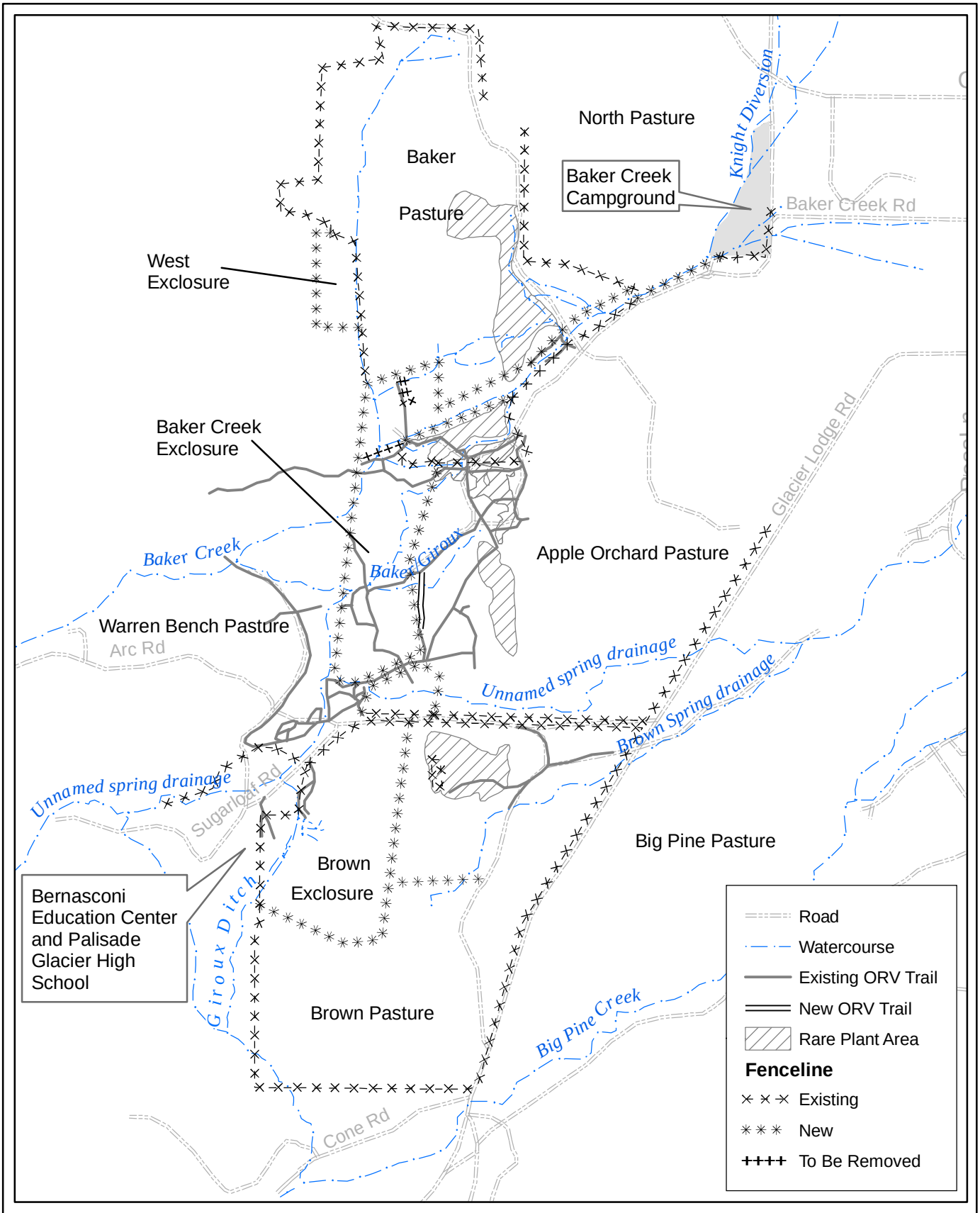


Figure 11.1-1
Baker Creek Recreation Map

January 2006

Data Source: ESI 2005a

Photo 1: Typical Baker Creek ORV trail

Photo 2: ORV area near Sugarloaf Road, Baker Creek site.

Figure 11.1-2
Photos of ORV Use at Baker Creek

January 2006

Photo 3: Baker Creek trail extension site

Photo 4: ORV use at Baker Creek

Figure 11.1-3
Baker Creek Recreational Use

January 2006

Baker Creek Campground. The major recreational facility in the vicinity of the Baker Creek Project site is Baker Creek Campground, which is located east of the Project Area's North Pasture along Baker Creek Road. The campground is located on LADWP property and operated by Inyo County Parks and Recreation Department, which characterizes the campground as "rustic." The campground contains 70 spaces, and provides hand-pumped well water and three new vault toilet facilities. Each campground features a picnic table and a barbeque grill, with fire pits at some sites. Baker Creek and several diversion channels run through the campground, and there are two ponds associated with a diversion area that are used for fishing (ESI 2005a; Hamilton pers. comm. 2005).

The campground is open 365 days a year. There is a charge of $10 per vehicle for camping, which is accommodated on a "first-come, first-served" basis; there is no charge for day use. Most visitors (up to 90 percent) are from Southern California, and stay one to two nights. The campground is unstaffed but is patrolled daily by a park ranger. The campground is used for fishing, hiking, dog-walking, hunting in nearby areas, and camping. Both RV and tent camping are welcomed, though no hookups are provided for RV users. The campground appeared to be well-maintained and in good condition when visited in November 2005 (Figures 11.1-4 and -5).

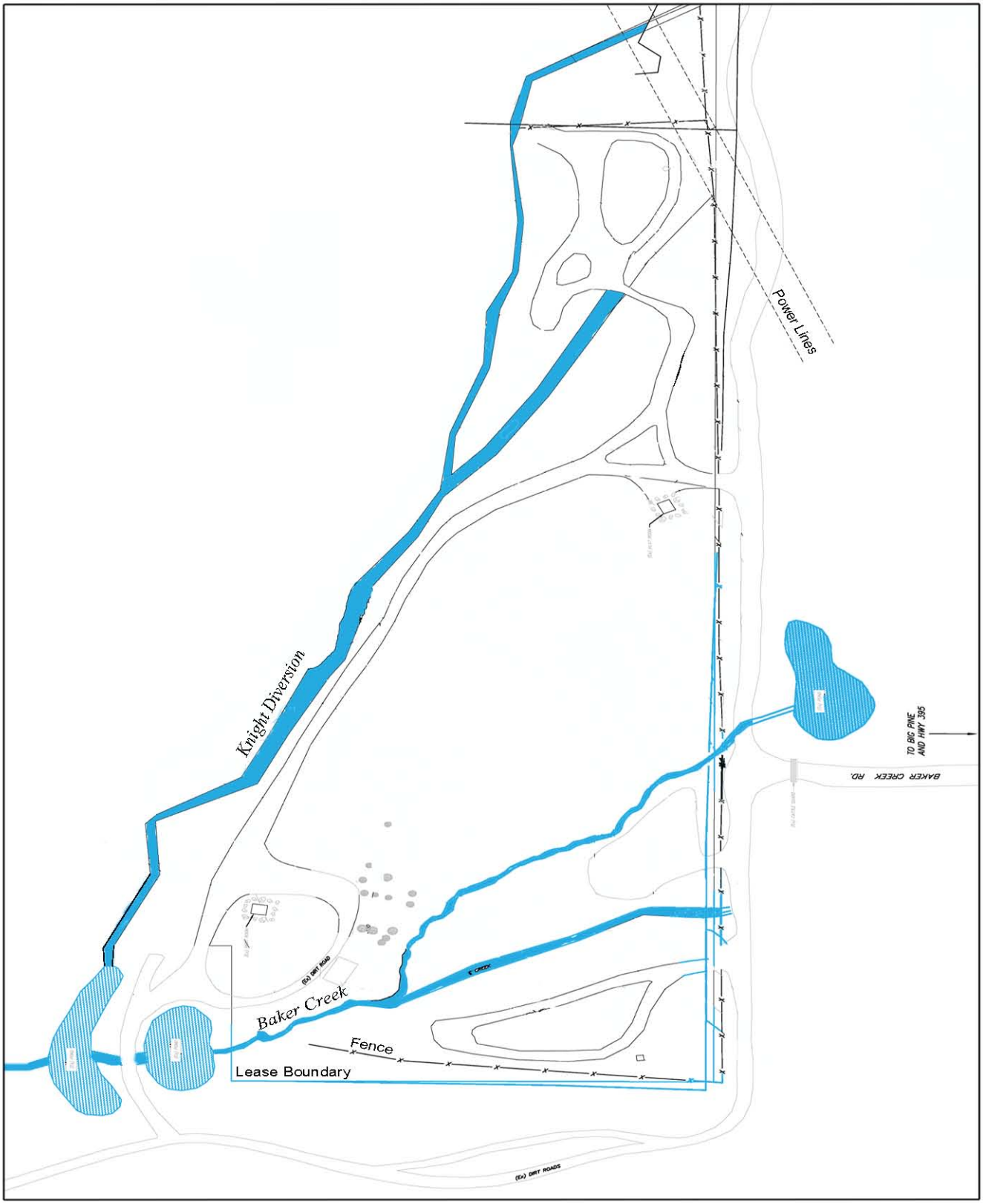
Data provided by Chuck Hamilton, Deputy County Administrator for Inyo County, indicated that the Baker Creek Campground received an average of 1,868 camping vehicles per year between summer 1999 and spring 2005. Visits varied by season, with as few as 10 to 20 vehicles per month in the winter, versus 200 to 300 per month in summer. In the 1999-2000 year, the busiest on record, as many as 500 vehicles per month used the site. Day use of the campground is not recorded. Nevertheless, the Baker Creek Campground was rarely full (Hamilton, pers. comm. 2005).

Hogback Creek Site. As with the Baker Creek site, local recreationists have used the Hogback Creek site for over half a century. Currently there is unrestricted recreational day use, except where posted, through nearly all of the Hogback Creek area. Recreational users typically follow a "good neighbor" policy of leaving gates open or closed as they find them, and not disturbing agricultural, grazing or water diversion areas (ESI 2005b).

The main recreational practices in the Hogback Creek are associated with hunting, hiking, bird watching, and ORV use. Use is lighter in this area than at Baker Creek, possibly due its greater distance from populated areas (ESI 2004). The Hogback Creek site is bordered by Moffat Ranch Road, which is part of a designated touring route identified in *Motor Touring in the Eastern Sierra including Death Valley* (ESIA 2005).

Many types of hunting occur in the area, but the primary hunting activities near Hogback Creek are quail and dove hunting (ESI 2005b). Hunting is subject to CDFG regulations, which prohibit discharge of firearms within 150 yards of occupied buildings, farms, livestock, public roads, and highways. The hunting season generally begins on September 1, and follows the same CDFC seasons as the Baker Creek site.

ORV tracks have been observed on the Hogback Creek site (see Figure 11.1-6). Overnight camping is allowed only in designated campgrounds, none of which exist within the Project boundaries or the direct vicinity. Fires are also prohibited outside of designated campgrounds



1in=approximately 300ft

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Figure 11.1-4
Baker Creek Campground Map

Data Source: Brown 2000

January 2006

Photo 5: Typical camp site along Baker Creek

Photo 6: Baker Creek campground facilities

Figure 11.1-5
Photos of Baker Creek Campground

January 2006

Photo 7: Photo of ORV use at Hogback Creek site

Photo 8: 4WD road at Hogback Creek site

Figure 11.1-6
Photos of ORV Use
at Hogback Creek

January 2006

11.2 IMPACTS AND MITIGATION

11.2.1 Thresholds of Significance

The following thresholds of significance were developed based on Appendix G of the CEQA guidelines. Project-related effects on recreation resources are considered significant if they:

- 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, or

- Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

11.2.2 Impact Assessment

Compliance with Guidance and Regulations Concerning Recreational Use. The Baker Creek and Hogback Creek project areas are designated as "open space" under the Inyo County General Plan, and include tracts zoned for natural resources. The Project will be consistent with maintenance of open space designations for recreational areas in Inyo County. Residents and visitors will be allowed a variety of continued recreational uses, including hiking, birdwatching, fishing, hunting, mountain-biking, and off-road vehicle use, and the Project will provide for improved recreational opportunities in wildlife-viewing through enhancement of riparian habitat for the benefit of yellow-billed cuckoo and other species. The Project will maintain existing recreational opportunities during, and subsequent to, implementation of the enhancement projects. It will make minimal alterations to recreational uses, most significantly the re-routing of a small segment of ORV track to maintain a loop trail for ORV users and mountain-bikers. The habitat enhancement plans are compatible with Inyo County General Plan goals, policies, and implementation measures for recreation.

Management of the Baker Creek and Hogback Creek areas with implementation of the proposed plans also complies with the recreational use guidelines for LADWP land management. Implementation of the proposed plan would result in less than significant impacts resulting from conflicts with applicable plans for recreation within Inyo County.

Potential Changes in Recreational Use. Recreational users are not expected to substantially change their habits from current use during habitat enhancement efforts for yellow-billed cuckoo. Currently, only light recreational impacts and pressures occur in the Baker Creek and Hogback Creek areas, thus recreation management is planned to remain relatively unchanged from current practices, unless increased demand requires more focused management. Foot traffic in the Baker Creek and Hogback Creek areas, such as for hiking and birdwatching, will continue during and subsequent to the enhancement plans. Fence walk-throughs will be constructed to allow for foot traffic to enter the exclosure areas. Mountain bikers in both areas use the ORV tracks, and will continue to do so as well as the new ORV route proposed at Baker Creek. ORV use,

hunting, paintball shooting and similar activities known to occur at Baker Creek will be controlled by signage to keep participants from affecting exclosures and areas of new plantings. Implementation of the proposed plans would not result in significant effects on recreational use or users at either site.

Potential Increase in Use of Recreational Facilities. Enhancement of cuckoo habitat may draw more individuals to the area that are interested in birdwatching and/or wildlife viewing. Consequently, implementation of the project could potentially result in a slight increase in use of the Baker Creek Campground. If this increase in use does occur, it would be compatible with the goals of the Inyo County General Plan Open Space Element. Increased use of campground facilities has the potential to degrade the existing facilities or require changes in management. However, the Baker Creek Campground currently experiences light to moderate use and is not expected to generate visitors beyond the current capacity. Chuck Hamilton, Inyo County Deputy Commissioner, noted that the Baker Creek campground was rarely full, and, in his opinion, could accommodate additional visitor capacity without substantial physical deterioration of campground facilities (Hamilton pers. comm. 2005). This impact is considered less than significant.

Re-routing of Off-Road Vehicle Tracks. The cuckoo enhancement project for the Baker Creek area calls for the construction of a small section of new ORV track in order to create a loop for users to replace the one disrupted by the construction of a Baker Creek Exclosure. This area currently serves as an informal pathway with limited vegetation. Other than the relocation of this section of loop trail, the installation of the remaining exclosures should have little impact on ORV users. ORV access will be maintained through the Baker Creek area much as it currently exists. The Baker Creek Exclosure will be divided into two segments that will allow an ORV trail through the area to be maintained. The current area used to park and unload ORVs will continue to be used for this purpose. The alteration of existing trails for ORV use is considered to be a less than significant impact.

Grazing and Hunting Conflicts. The Baker Creek and Hogback Creek sites are currently used for hunting. Many types of hunting occur in the area, but the primary activities in the Baker and Hogback areas are deer, quail and dove hunting. The start of hunting season varies from year to year, but begins around September 1.

The proposed grazing regime as presented in the plans (ESI 2005a, b) season would result in overlap with hunting seasons, creating a potential conflict between grazing operations and hunting. These potential conflicts could reduce the hunting success for deer and game birds. Hunting is subject to CDFC regulations, which prohibit discharge of firearms within 150 yards of occupied buildings, farms, livestock, public roads, and highways. On the Baker Creek site, livestock would be present in all of the pastures during the hunting season; however, hunters following the DFG code would be expected to utilize the exclosures to avoid shots within 150 yards of livestock. Hunting on the Hogback site would take place when packstock are grazing, which would not change from current practice. The distribution of 35 head of mules and horses over the 430 acre pasture is expected to allow hunters to utilize portions of the site away from livestock. While hunting opportunities would be somewhat limited at both sites, opportunities for

hunting deer and game birds would not be eliminated from either site. Therefore, impacts due to altered hunting opportunities are considered less than significant.

11.2.3 Significance After Mitigation

Implementation of the MOU Consultant Project will result in no or less than significant impacts in the area of recreation. There is no need for mitigation.

12.0 WATER RESOURCES

The following discussion provides a brief overview of the water resources related to the MOU Consultant Project. This section evaluates the impacts of site surface water and groundwater conditions on the MOU Consultant Project , and evaluates the impacts of the MOU Consultant Project on water resources and water supply. These issues are evaluated in the context of potential implementation of the proposed habitat enhancement plans at Baker Creek and Hogback Creek. A single significant unmitigated impact associated with water resources is expected from the MOU Consultant Project : water necessary to implement the MOU Consultant Project can only be fully supplied to downstream users in years that runoff is equal to or exceeds 90 percent of normal. In years that runoff is less than 90 percent of normal, other downstream water uses on Baker Creek would have to be reduced to meet the water requirements of the MOU Consultant Project. These downstream water uses that would be affected include riparian and fish flows in Baker Creek, LADWP irrigated pastures, LADWP water exports for municipal uses, stock water, Inyo County Farm, and the Knight Manor Housing area.

12.1 EXISTING CONDITIONS

12.1.1 Applicable Regulatory Considerations

Water resources are subject to regulation for both quantity and quality in California under the California Water Code. The lead regulating agency is the State Water Resources Control Board (SWRCB) and its regional arm, the Lahontan Regional Water Quality Control Board (LRWQCB). Water quantity is regulated through a combination of water rights-related regulation (California Water Code, Division 2) and adjudicated agreements.

Water Quantity. Surface water rights in California are primarily of two forms: riparian and appropriated (SWRCB 1990). Water reserved by such rights must be put to continuous "beneficial use." Since 1991, beneficial use includes use for instream habitat maintenance, and existing (but not new) water rights may be transferred to supply instream flows (BLM 2001). Groundwater use is generally not covered by a permit process in California, although groundwater must be put to reasonable use (DWR 2003).

Instream Conditions. Some aspects of instream habitat quality are regulated by the California Fish and Game (Fish and Game Code Sections 1600-1616). Specifically, "[a]n entity my not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream or lake" without notifying the California Department of Fish and Game (CDFG) and disclosing the nature of the activity (California Fish and Game Code Section 1602(a)). If the CDFG determines that an activity "may substantially adversely affect an existing fish and wildlife resource," the CDFG enters into a Streambed Alteration Agreement with the applicant for a period of five years (renewable or extendable for up to five years).

Water Quality. The Porter-Cologne Water Quality Control Act (California Water Code Division 7) is the primary vehicle by which California implements both the requirements of the Federal Clean Water Act, and additional water quality regulations at the state level that go beyond provisions of the federal law. This act, and related regulations, are

implemented through the SWRCB and regional boards. The LRWQCB developed the Water Quality Control Plan for the Lahontan Basin in 1993, and amended it multiple times through 2002. This plan sets out:

- Beneficial uses for waters within the jurisdiction of the Lahontan Board
- Surface water and groundwater quality objectives for various pollutants
- Implementation measures to meet the water quality objectives, including:
    - Stormwater permitting requirements; and
    - Policies and recommendations regarding groundwater protection and management, resources management and restoration, and agricultural practices.

Beneficial use designations for Baker Creek and Hogback Creek are shown in Table 12.1-1 (LRWQCB 2002b).

Table 12.1-1 Beneficial Uses of Project Area Streams

Use	Baker Creek	Hogback Creek
Municipal and Domestic Supply	♦	♦
Agricultural Supply	♦	♦
Industrial Supply	♦	♦
Groundwater Recharge	♦	♦
Freshwater Replenishment		♦
Contact and Non-contact Recreation	♦	♦
Commercial and Sportfishing	♦	♦
Cold Freshwater Habitat	♦	♦
Wild Fisheries Support	♦	♦
Preservation of Biological Habitats of Special Significance	♦	♦
Rare, Threatened, or Endangered Species		♦
Spawning	♦	♦
Water Quality Enhancement		♦

Basin-specific water quality objectives were set for Big Pine Creek and Hogback Creek in the Basin Plan (LRWQCB 2002b):

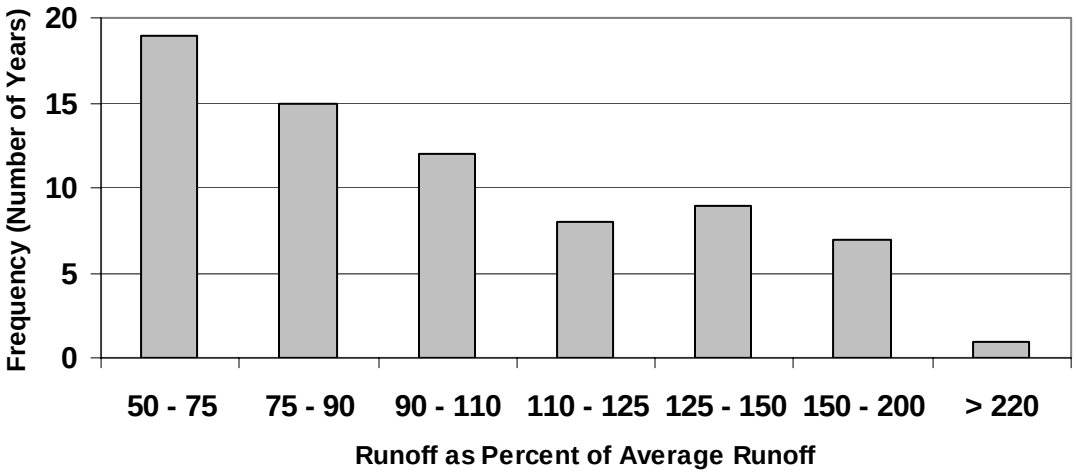
- Big Pine Creek:
  - TDS average 55 mg/L; 90th percentile value of 93 mg/L;
  - Chloride average 2.0 mg/L; 90th percentile value of 4.0 mg/L;
  - Sulfate average 6.0 mg/L; 90th percentile value of 10.0 mg/L;
  - Fluoride average 0.06 mg/L; 90th percentile value of 0.2 mg/L;
  - Boron average 0.03 mg/L; 90th percentile value of 0.07 mg/L;
  - Nitrate nitrogen average 0.6 mg/L; 90th percentile value of 0.9 mg/L;
  - Total nitrogen average 0.7 mg/L; 90th percentile value of 1.0 mg/L;
  - Dissolved orthophosphate average 0.03 mg/L; 90th percentile value of 0.04 mg/L.
- Hogback Creek:
  - TDS average concentration 45 mg/L; 90th percentile concentration 48 mg/L;
  - Chloride average concentration 2.5 mg/L; 90th percentile concentration 3.6 mg/L;
  - Fluoride average concentration 0.1 mg/L; 90th percentile concentration 0.1 mg/L;
  - Boron average concentration 0.03 mg/L; 90th percentile concentration 0.06 mg/L;
  - Nitrate nitrogen average concentration 0.2 mg/L; 90th percentile concentration 0.3 mg/L;
  - Total nitrogen average concentration 0.4 mg/L; 90th percentile 0.6 mg/L;
  - Dissolved orthophosphate average concentration 0.02 mg/L; 90th percentile concentration 0.04 mg/L.

Water Policies. Additional water policies—including those outlining development review responsibilities and pollution prevention strategies—are set out in the Inyo County General Plan. Policies related to surface and groundwater management in Inyo County on lands owned by the City of Los Angeles are found in the Inyo County/Los Angeles Water Agreement.

12.1.2 Regional Hydrology

The hydrologic system of the Owens Valley is sustained by the snowpack of the adjacent Sierra Nevada, and the snowmelt runoff that occurs each spring and early summer.

Surface water snowmelt drains from the crest of the Sierra Nevada east down to the floor of the Owens Valley through a number of tributaries, including Baker and Hogback Creeks. Once these creeks leave the mountain front, they flow over alluvial fans toward the Owens River. Throughout their length in the Owens Valley, these tributary creeks are primarily 'losing streams'—they are recharging the unconfined alluvial groundwater aquifer throughout most of their length (Figure 12.2-1; USGS 1998).

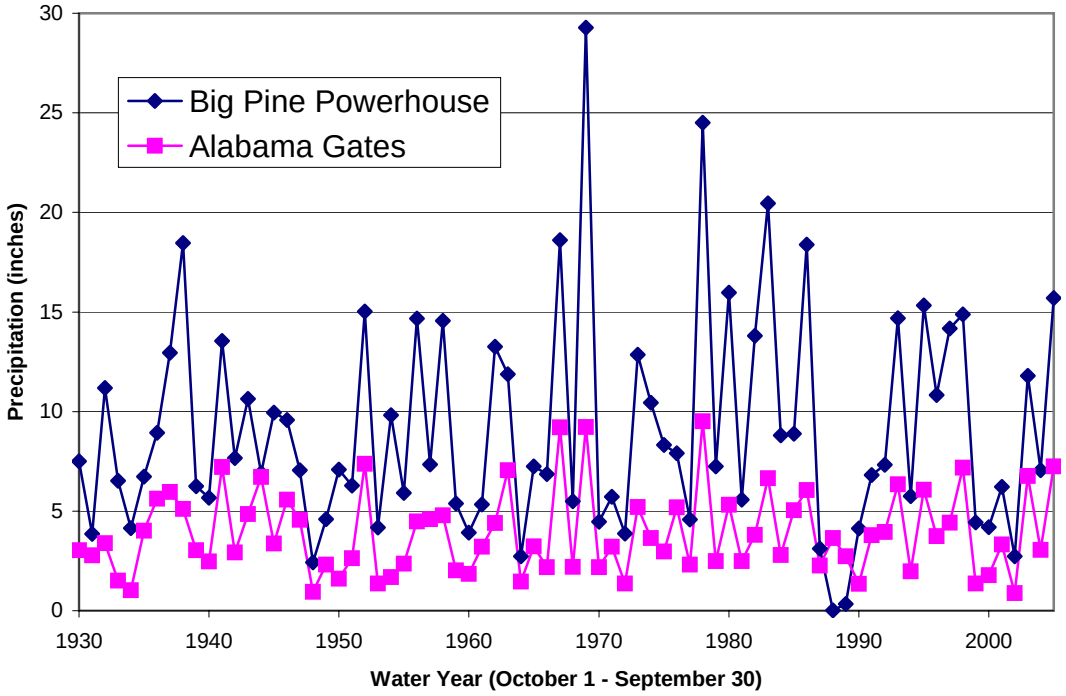


Source: USGS 1998; LADWP 2005c

Figure 12.1-1 Owens Valley Annual Runoff Frequency

Prior to Euroamerican settlement of the valley, both surface streams and groundwater from the unconfined aquifer reached the Owens River, where it drained to the south into Owens Lake. Irrigation ditches that diverted water flows from the creeks were constructed shortly after Euroamerican settlement in the early 1860s to support agricultural use of the valley (see Section 7 of this report).

LADWP measures precipitation at several sites within the Owens Valley, including the Big Pine Powerhouse southwest of the Baker Creek site and the Alabama Gates site east of Hogback Creek (Figure 12.1-2). For the period from 1985-2005 water years (i.e., October 1, 1985-September 30, 2005), rainfall averaged 8.4 inches per year at the Big Pine Powerhouse rain gauge, and 4.0 inches per year at the Alabama Gates rain gauge. Valley floor precipitation is predominantly rain. Most of this precipitation falls between October 1 and April 15; this pattern is more pronounced in wet years. Summers are generally hot and dry, with rainfall coming only locally associated with intense, short duration thunderstorms.



Source: LADWP 2006

Figure 12.1-2 Precipitation Near YBC Enhancement Project Sites

12.1.3 Surface Water

Baker Creek Area

Drainage Pattern. The Baker Creek Project Area is located at the margin of the Owens Valley, straddling Baker Creek and extending south past the Brown Spring (Figure 12.2-3). Baker Creek, Little Pine Creek, and Big Pine Creek are perennial channels. Springs and seeps are common at the base of the mountain front, and at other locations across the site (likely associated with existing faults; see Section 8). Historical maps of this site from 1930 show a dense and complex network of braided channels across the site but no distinction is generally made on these maps between constructed ditches and natural channels. Baker Creek is a high gradient stream. Based on site understanding by LADWP staff, the braided channels depicted on historic maps were most likely releases from ditches associated with homesteads, grazing and orchard irrigation.

Water is diverted in the Giroux Ditch from Big Pine Creek north to Baker Creek. This ditch is an historic feature (see Section 7). Some time following the mid-1940s, a more substantial ditch appears to have been constructed north of Baker Creek along the base of the Warren Bench, providing flood irrigation to the western margin of the Baker Pasture (Baker Ditch; WHA 2004a). Both Big Pine and Baker Creeks flow into the Big Pine Canal, which transports water south to the Owens River.

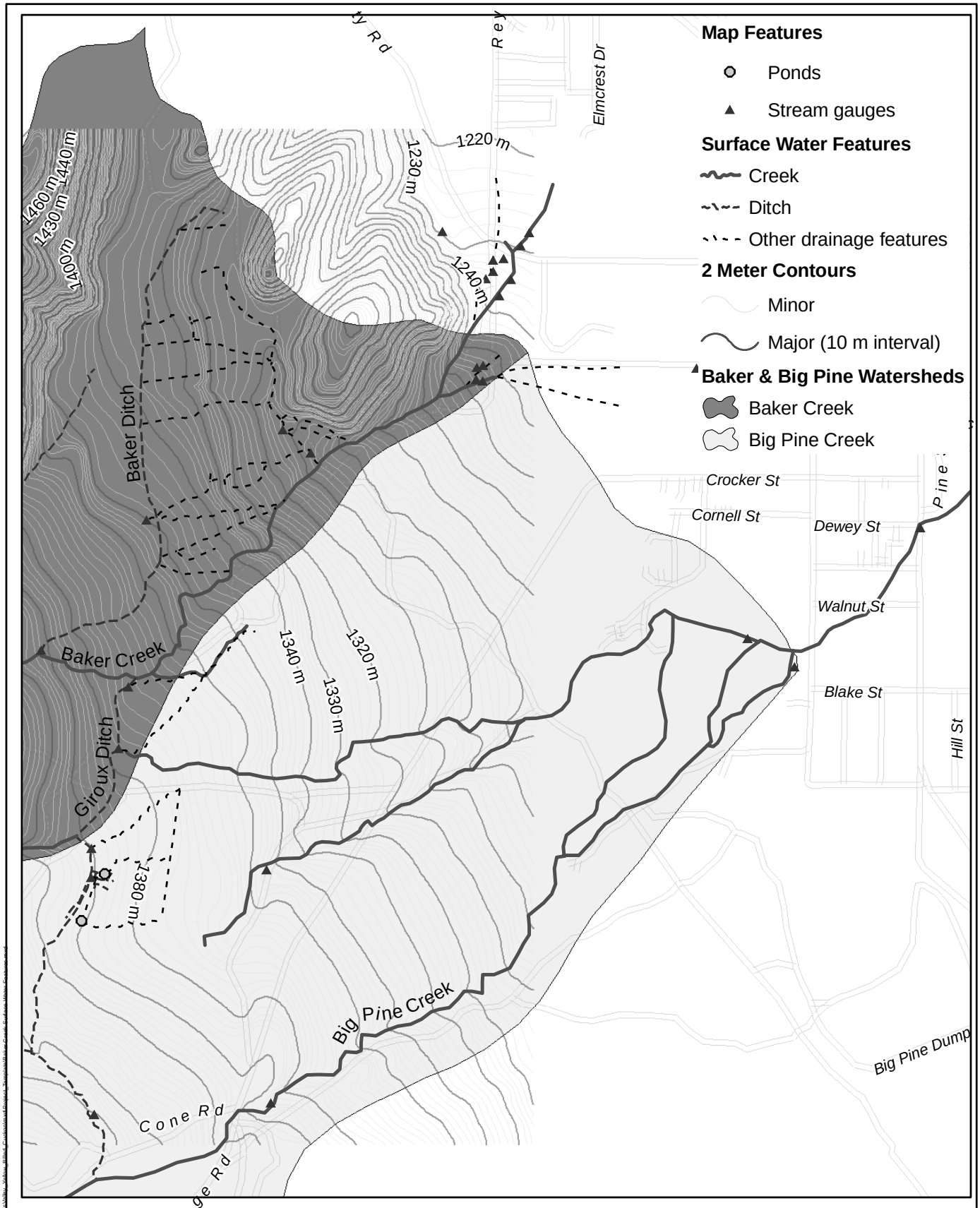


Figure 12.1-3
Baker Creek Surface Water Features
January 2006

Data Source: ESI 2005a

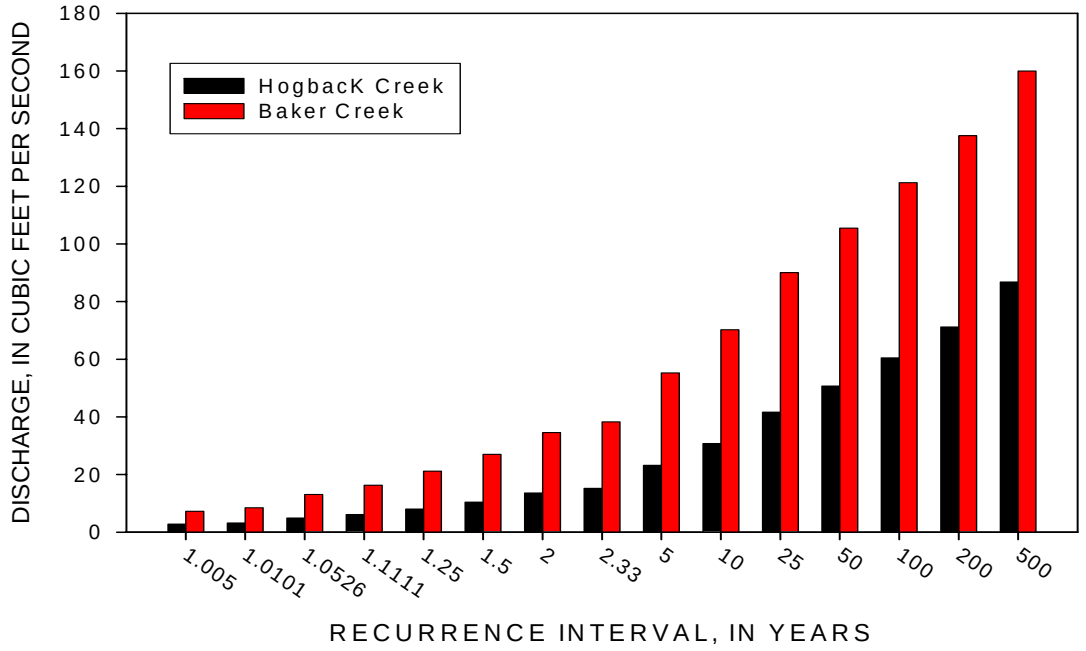
Hydrology. Flow is gauged by LADWP on Baker Creek approximately ¼ mile west of the Project site, and on Big Pine Creek immediately downstream of Glacier Lodge Road. Site hydrology is summarized by both Otis Bay Environmental Consultants (OBEC 2004) and WHA (WHA 2004a). Flow duration relationships developed by OBEC (2004) for daily discharges between April 1990 and August 2004 show that the median daily flow for Baker Creek is 5.9 cubic feet per second (cfs), while the mean flow for the period of record (1929-2003) is 8 cfs (Table 12.2-1). An average of 7 cfs is diverted from Big Pine Creek into Giroux Ditch, primarily in the summer season. Mean flow in Big Pine Creek for the 1920-2003 water years is 35 cfs in the vicinity of the project site (USGS Station 10276000, below the Giroux Ditch diversion). Additional detailed analysis of all LADWP gauges within the project area was performed by WHA (2004a). Transpiration averages 1.5 feet per year over the entire site, with higher rates (approximately 2 feet per year) adjacent to Baker Creek, and lower rates on the droughty eastern margin of the Project area (USGS 1998).

Table 12.1-2 Flow Duration Relation Results for Baker and Hogback Creek

	Daily Mean Discharge	
Creek	**Discharge (cfs)**	**Percent of Time Exceeded**
Baker	16.4	5
	5.9	50
	2.9	95
	8	Mean
Hogback	13.1	5
	2.1	50
	0.9	95

Source: OBEC 2004; WHA 2004a, b

Flooding and Floodplains. Flood discharges on Baker Creek were estimated by OBEC (2004) using a Log Pearson Type III analysis based on peak flow data (annual or partial duration series) from 1990-2003 (Figure 12.2-4). The 2-year recurrence discharge for Baker Creek is estimated to be 34.5 cfs, the 10-year recurrence interval flood is estimated to be 70.2 cfs, and the 50-year event is estimated to be slightly over 100 cfs. No estimate of flood flows or extent on Big Pine Creek was available, although FEMA did map a 100-year floodplain adjacent to the creek downstream of the USGS gauge and Glacier Lodge Road on the basis of site conditions rather than on the basis of a detailed hydraulic and hazard study (FEMA 1985). No 100-year floodplain has been delineated within the Baker Creek Project area.



Source: OBEC 2004

Figure 12.1-4 Estimated Flood Flows, Baker and Hogback Creeks

12.1.4 Water Quality

No water quality data were readily available for Baker Creek or Big Pine Creek. Neither water body was on the 2002 303(d) list of impaired water bodies, and no change in that status was recommended in 2005 (LRWQCB 2002a, 2005).

Hogback Creek Area

Drainage Pattern. The Hogback Creek Project Area is located approximately one mile beyond the margin of the Owens Valley, straddling Hogback Creek on the northwest side of the Alabama Hills (Figure 12.2-5). Moffatt Ranch Road follows the base of the Alabama Hills and acts as the eastern margin of the project area. As described above in Section 8, the Hogback Creek Project Area consists of alluvial fan materials of various ages. Multiple relict channels extend across the Project Area, but only the Hogback Creek channel is considered perennial. Remnants of several spreading diversions on the channel are still visible. An old ditch once conveyed water out of the creek, sending it to the east toward Moffatt Ranch Road just north of Hogback Road. Several springs are located to the north of this ditch, and support the existing riparian vegetation: bulrush/cattail wetlands, saltgrass meadow, and willow thickets. Channels from these springs converge with Hogback Creek near the north end of the Project area. All drainage from the Hogback Creek Project Area is captured downstream by the Los Angeles Aqueduct.

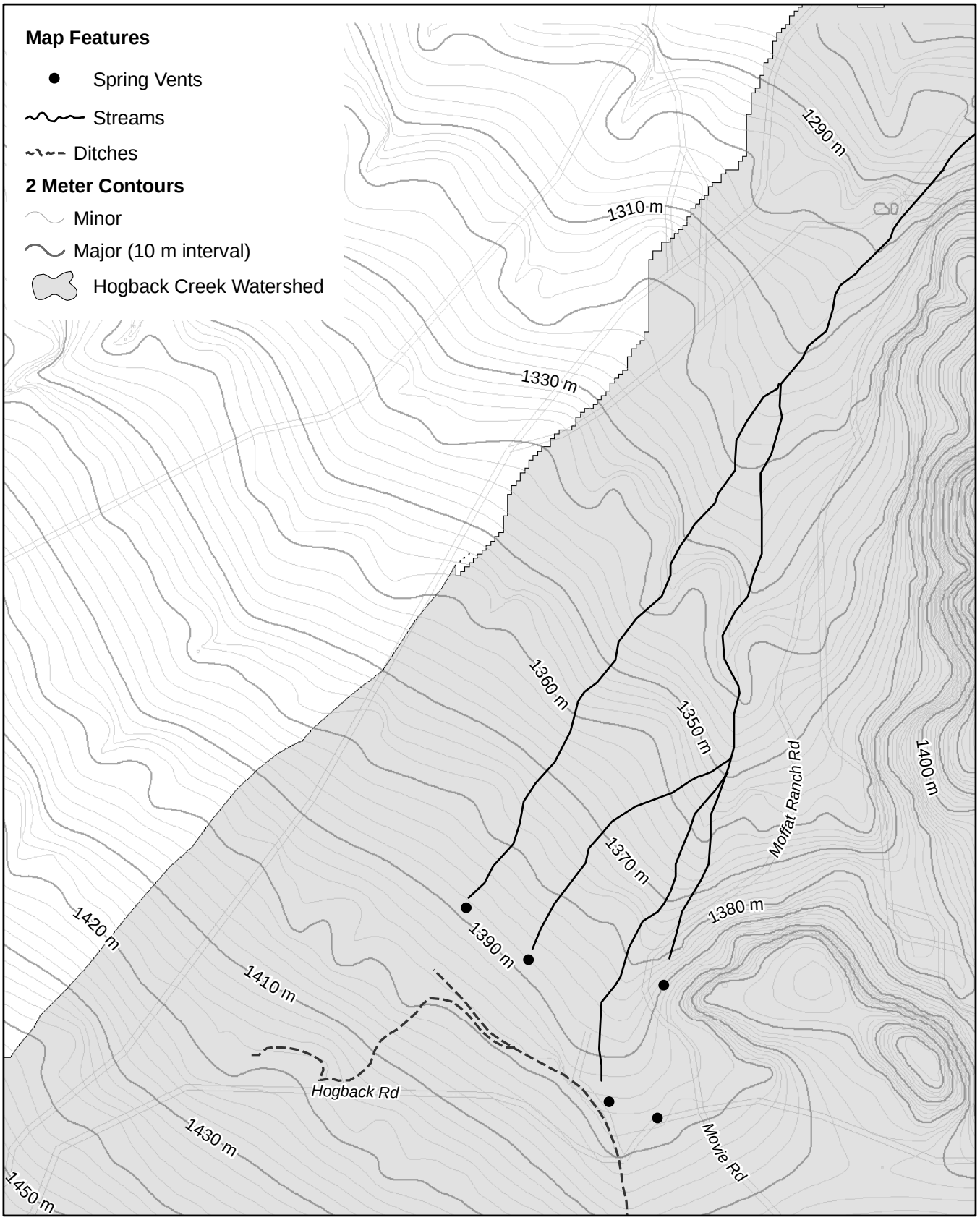


Figure 12.1-5
Hogback Creek Surface Water Features
January 2006

Data Source: ESI 2005b

Hydrology. Flow is gauged on Hogback Creek at the base of the Sierra Nevada and at the Los Angeles Aqueduct. Site hydrology is summarized by both OBEC (2004) and WHA (2004b). Flow duration relationships developed by OBEC (2004) for daily discharges between April 1990 and August 2004 show that low flows are typically less than 1 cfs, the median daily flow for Hogback Creek is 2.1 cfs, and measured flows have reached nearly 30 cfs during peak snowmelt from a year with high snowpack (Table 12.2-1 and OBEC 2004). Transpiration is in the 1.5 to 2 feet per year range over most of the site.

Flooding and Floodplains. Flood discharges on Hogback Creek were estimated by OBEC (2004) using a Log Pearson Type III analysis based on peak flow data (annual or partial duration series) from 1990-2003 (Figure 12.2-3). The 2-year recurrence discharge for Hogback Creek is estimated to be 13.6 cfs, the 10-year recurrence interval flood is estimated to be 30.7 cfs, and the 50-year event is estimated to be slightly over 50 cfs. No 100-year floodplain has been delineated within the Hogback Creek Project area (FEMA 1985).

Water Quality. No water quality data were readily available for Hogback Creek. The creek was not on the 2002 303(d) list of impaired water bodies, and no change in that status was recommended in 2005 (LRWQCB 2002a, 2005).

12.1.5 Groundwater

Baker Creek Area

Aerial photographs and historical maps indicate that groundwater discharges at springs at the base of the mountains west of the Baker Creek Project area or within a short distance from the mountain front (as described above and in Section 8). Groundwater is likely in part also recharged within the Project area by flow in Baker Creek and the Giroux Ditch.

Based on site investigations by WHA (2004a) that included hand auger sampling of site soils, groundwater is within 5 feet of the land surface on over 76 percent of the Project area. This condition is maintained by irrigation over 30 percent of the Project area (specifically, in Baker pasture). Soils are flooded or saturated year-round on approximately 9 percent of the Project area. LADWP performed additional subsurface investigations in the northern half of Brown Pasture. They located boreholes at the boundary between the seasonal high and seasonal low water table regimes, as mapped by WHA (2004a). They found that soil in two of 6 boreholes was at field capacity at less than 4 feet below ground surface (bgs), confirming the mapping of WHA (2004a). Finally, LADWP has recorded artesian conditions in piezometers installed in the Brown pasture and in the Apple Orchard pasture.

Hogback Creek Area

Groundwater discharges at the springs at the site down-valley from the fault trace (as described above and in Section 8), and is likely subsequently in part recharged by

Hogback Creek in the down-valley direction. Based on mapping by WHA (2004b), groundwater is within 5 feet of the land surface on 15 percent of the Project area, although soils are saturated year-round only on 0.1 percent of the Project area.

Groundwater flow is parallel to the course of Hogback Creek (USGS 1998). The groundwater gradient within the project area is expected to be close to the existing ground slope of 5 percent to the northeast, but appears to steepen downstream of the site across the northern end of the Alabama Hills (USGS 1998). The groundwater table is likely to be nearly horizontal in a transect perpendicular to the course of Hogback Creek.

12.2 IMPACTS AND MITIGATION

12.2.1 Thresholds of Significance

Thresholds of significance associated with the project for water resources were developed from the CEQA Guidelines Appendix G (CCR 2005) and include the following:

- From the Hydrology and Water Quality section of the CEQA Guidelines, the Project would have significant impacts if it would:
    - Violate any water quality standards or waste discharge requirements;
    - 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);
    - Substantially alter the existing drainage pattern of the site or 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;
    - 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;
    - Otherwise substantially degrade water quality;
    - Place structures within a 100-year flood hazard area, which would impede or redirect flood flows;
    - Result in inundation by . . . mudflow.

- From the Utilities Section of the CEQA Guidelines, significant impacts would occur if the Project does not have sufficient water supplies available to serve the project from existing entitlements and resources.

Other significance thresholds listed in the CEQA Guidelines, related to the following significance criteria, are not applicable to this Project as described in the Notice of Preparation (LADWP 2005b).

- 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;

- 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;

- Inundation by seiche or tsunami;

- All other significance criteria from the Utilities section (i.e., those related to wastewater, water treatment, stormwater utilities, and solid waste facilities).

12.2.2 Impact Assessment

It is the intent of LADWP to minimize disturbance to the land and limit soil erosion to the maximum extent practicable while enhancing revegetation of disturbed areas as much as possible. Refinement of the project footprint and implementation activities is expected to occur in the months ahead with this purpose in mind.

Water Quality Impacts at Baker and Hogback Creeks. The Lahontan Basin Water Quality Plan sets out narrative water quality objectives for sediment and turbidity as follows:

- Sediment: "The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect the water for beneficial uses."
- Turbidity: "Waters shall be free of changes in turbidity that cause nuisance or adversely affect the water for beneficial uses. Increases in turbidity shall not exceed natural levels by more than 10 percent" (LRWQCB 2002b).

The potential for soil erosion was described in Section 8 of this document. Specifically, approximately one acre of ground would be disturbed at Baker Creek to construct both 1) the water distribution system consisting of four diversions from Giroux ditch, excavation of two adjacent ponds, and a diversion from Baker Ditch; and 2) the new ORV trail. The diversions on the Giroux Ditch will be constructed under dry conditions to minimize the potential for soil erosion. A minor amount of channel bed and bank erosion could occur in Giroux Ditch once water is returned to this feature as the channel adjusts to new

hydrodynamic conditions and as bank materials re-adjust to flowing water. This could result in minor short-term and localized exceedances of turbidity criteria. These exceedances are expected to be within the range naturally experienced by aquatic organisms, and within design criteria for downstream man-made structures. As such, they would not exceed nuisance levels or adversely affect instream beneficial uses.

There would be no potential for delivery of sediment to surface water associated with the new ORV trail because the new trail segment does not cross any active drainages that could result in delivery of eroded soil to surface waters. The ponds are similarly downhill from active water courses, and any discharge from these ponds would infiltrate before reaching existing stream channels. Therefore, the project is not likely to violate any water quality standard or waste discharge requirement at the downstream Baker Creek project boundary.

Ground disturbance would be negligible at Hogback Creek (ESI 2005b). Because annual rainfall is low, soil infiltration capacity is high, and land surface slopes are relatively flat, only a small amount of soil erosion would be expected from these activities.

In the event that land clearing activities for the project still result in more than one acre of land cleared or graded between the Baker Creek and Hogback Creek Project areas, LADWP would have to obtain coverage from the SWRCB under the Construction General Stormwater Permit. Development of a Storm Water Pollution Prevention Plan (SWPPP) is required by the permit. Suitable adjustments to the specific Erosion and Sediment Control BMPs described in CSQA (2004) would be described in the SWPPP. These adjustments would be made to account for the rural and arid nature of the Project areas. The implementation of BMPs would render the project associated sediment delivery negligible, and would reduce turbidity to the maximum extent practicable while providing a net environmental improvement to the riparian habitat (and, by extension, to the instream habitat) in the Project areas.

Groundwater Impacts at Baker and Hogback Creeks. The MOU Consultant Project would not require groundwater extraction, and does not alter the soil surface in a way to impede infiltration. Therefore, the Project is not expected to significantly deplete groundwater supplies or interfere with groundwater recharge. However, surface water will be locally diverted to provide sufficient irrigation for plant establishment. Where this occurs, groundwater recharge will be locally enhanced.

Some of the diverted water may be used consumptively by the enlarged area of riparian vegetation proposed for the project. At Baker Creek, approximately 10 acres of meadow would be converted to cottonwood or willow forest. Some evapotranspirative losses would be expected with this conversion. Evaporation losses, though minor, would be expected from the 0.13 acres of new pond. Diverted water would be spread over the newly planted land areas (or into the two new ponds); diverted water is designed to provide increased subirrigation to the newly planted areas by locally raising the elevation of the water table. However, the volumes of these diversions are spread over a sufficiently large area such that it is unlikely to result in a detectable alteration of groundwater availability downgradient of the project site.

Surface Drainage, Floodplain, and Flood Hazard Impacts at Baker and Hogback Creeks. While the plantings at Hogback Creek will not require supplemental water, plantings in the Baker Creek project area will require supplemental water plus a continuation of current water supply and hydroperiod. Other localized modifications to water distribution over the site may occur as the site is adaptively managed in the future. Modifications to the riparian corridors at each site are not expected to modify the channel or floodplain or result in changes to flood flow peaks or the duration of those peaks. The new and existing diversions off of two ditches that will be used for the Baker Creek portion of this project will not be designed to impede or redirect flood flows.

Portions of the project are at risk for inundation by mudflows. Mudflows are rare events, are natural geomorphic processes on alluvial fans and washes, and native riparian habitats have evolved to recover following such events. Specifically, mudflows could originate in higher elevations in the Baker Creek drainage and move down either Baker Canyon or the unnamed tributary gulch north of Palisade Glacier High School. While mudflows can move across the alluvial valley fill away from the mountain front the distance to the Hogback Creek site, they would likely be substantially dissipated and constrained by channels by the time they reached the Hogback Creek Project area. The Inyo County General Plan requires that "[n]atural washes . . .be kept free from development that would adversely impact floodway capacity or characteristics, natural/riparian areas, or natural groundwater recharge areas" (Implementation Measure 3, Section 9.3; Inyo County 2001.) Though it is unlikely, the four southern diversions and the ponds at the Baker Creek area, and the fences and plantings at both sites, could be damaged by mudflows. However, while the financial investment in this project is substantial, it is not so great that LADWP would be unable to repair any damages with minimal effort and expenditure of resources.

Water Supply Impacts at Baker Creek Project Area. Water for the project would be removed from Giroux ditch. Such a diversion would reduce supplemental water downstream in Baker Creek. Flows in Big Pine Creek would remain unaltered by this component of the project. The sole significant impact from water resources would occur as a result of the proposed diversion of 1.25 cfs during the irrigation season, and 0.5 cfs for the remainder of the year. This volume represents 8 to 11 percent of the water in the Giroux ditch during the height of irrigation season (June – September), and 17 percent of the water diverted in winter. The project will most likely result in a reduction of downstream deliveries of water when runoff is below 90 percent of normal. These downstream water uses that would be affected include riparian and fish flows in Baker Creek, LADWP irrigated pastures, LADWP exports for municipal uses, stock water, Inyo County Farm, and the Knight Manor Housing area (ESI 2004; ESI 2005a; LADWP 2005a).

The plan anticipates that this water would come from the Inyo County Farm's water allocation; however, no agreement has yet been reached. The Big Pine Regreening Project is an Enhancement/Mitigation Project identified in the 1990 DEIR for the second Los Angeles aqueduct as a mitigation measure. The water supply for the proposed action may also conflict with the water needs of the Regreening project. No mitigation for surface water diversions was proposed by the plan.

12.2.3 Significance After Mitigation

The Project impacts to groundwater, water quality, and to surface drainage and flooding are less than significant. Water supply impacts are significant and unavoidable.

13.0 ALTERNATIVES

13.1 DEVELOPMENT OF ALTERNATIVES

Alternatives to the MOU Consultant Project were developed within the program established by the 1997 MOU and amended by the 2004 Stipulation and Order (S&O). The *Consultant's* recommendations are included within the MOU Consultant Project , and not described further in this discussion. Two alternatives are described below including the "no project" alternative required by CEQA. The following is a brief description of each alternative, followed by a comparison of each alternative and the project objectives, and an evaluation of the project alternatives.

13.1.1 No Project Alternative

Under the No Project Alternative, the proposed enhancement plans would not be implemented and the existing practices and trends on the Baker Creek and Hogback Creek sites would continue. The following practices and trends, relative to the Ecosystem Sciences, Incorporated (ESI) Proposed Project, include the following:

Habitat Enhancements

The No Project Alternative would likely maintain existing yellow-billed cuckoo habitat in the Hogback and Baker Creek sites. Fires and increasing recreational impacts may further reduce the habitat quantity or quality for yellow-billed cuckoos.

Plantings. Under the No Project Alternative, no plantings would take place.

Irrigation. Under the No Project Alternative, irrigation in the Baker Creek area would continue as practiced currently. There is currently no irrigation in the Hogback Creek Project area.

Black Locust Control. Under the No Project Alternative, black locust trees would not be removed. The cover of black locust may increase at the Baker Creek site as seedlings and sucker sprouts mature. At the Hogback site, the black locust cover may increase from the few scattered trees on site. As with riparian cover, black locust density and distribution may be shaped by occasional fires.

Grazing Exclosures. Under the No Project Alternative, no grazing exclosures would be established.

Trail Relocation. Under the No Project Alternative, no recreational trails would be relocated, since grazing exclosures would not be established.

Grazing Management

Under the No Project Alternative, grazing at each site, including stocking and season of use, would not change from current practices. Current grazing practices are described under "Present Grazing Management" in each respective habitat enhancement plan (ESI 2005a, b).

Fuels Management

Under the No Project Alternative, a firebreak will not be created between the project area and the community of Big Pine. Livestock grazing would continue to serve to reduce fuel loading.

Monitoring and Adaptive Management

Under the No Project Alternative, no project associated monitoring will occur. In addition, adaptive management for yellow-billed cuckoo habitat enhancement would not occur.

Recreation Use

Recreational uses of the sites may increase over time, as population growth creates a higher demand for outdoor leisure activities that are supported on both sites, including fishing, ORV use, hunting, biking, bird watching, and hiking.

Project Associated Costs

There are no project associated costs with the No Project Alternative.

13.1.2 Impact Assessment of the No Project Alternative

There are no impacts associated with the No Project Alternative.

13.1.3 Drip Irrigation Alternative

In keeping with Exhibit B (Work Plan) of the 2004 S&O, LADWP has reviewed the MOU Consultant Project as described in the yellow-billed cuckoo habitat enhancement plans and developed a set of recommendations that would modify the MOU Consultant Project. The Drip Irrigation Alternative includes general changes to the monitoring plan for both sites as well as management modifications to the water allocations, the addition of a drip irrigation system and a deferment of grazing in the Brown Exclosure (rather than a permanent exclusion of cattle grazing) at the Baker Creek site. Table 13.1-1 provides a summary of the proposed actions associated with the Drip Irrigation Alternative as compared to the MOU Consultant Project at the Baker Creek site. There are no differences in actions at the Hogback site between the MOU Consultant and LADWP proposed alternatives. In addition, the Drip Irrigation Alternative notes that LADWP will not be responsible for unforeseen circumstances that could negatively impact the project at either site. Project responsibility endpoints are also added. Table 13.1-2 provides a comparison of the ability of the three alternatives to meet the project objectives as identified in the MOU.

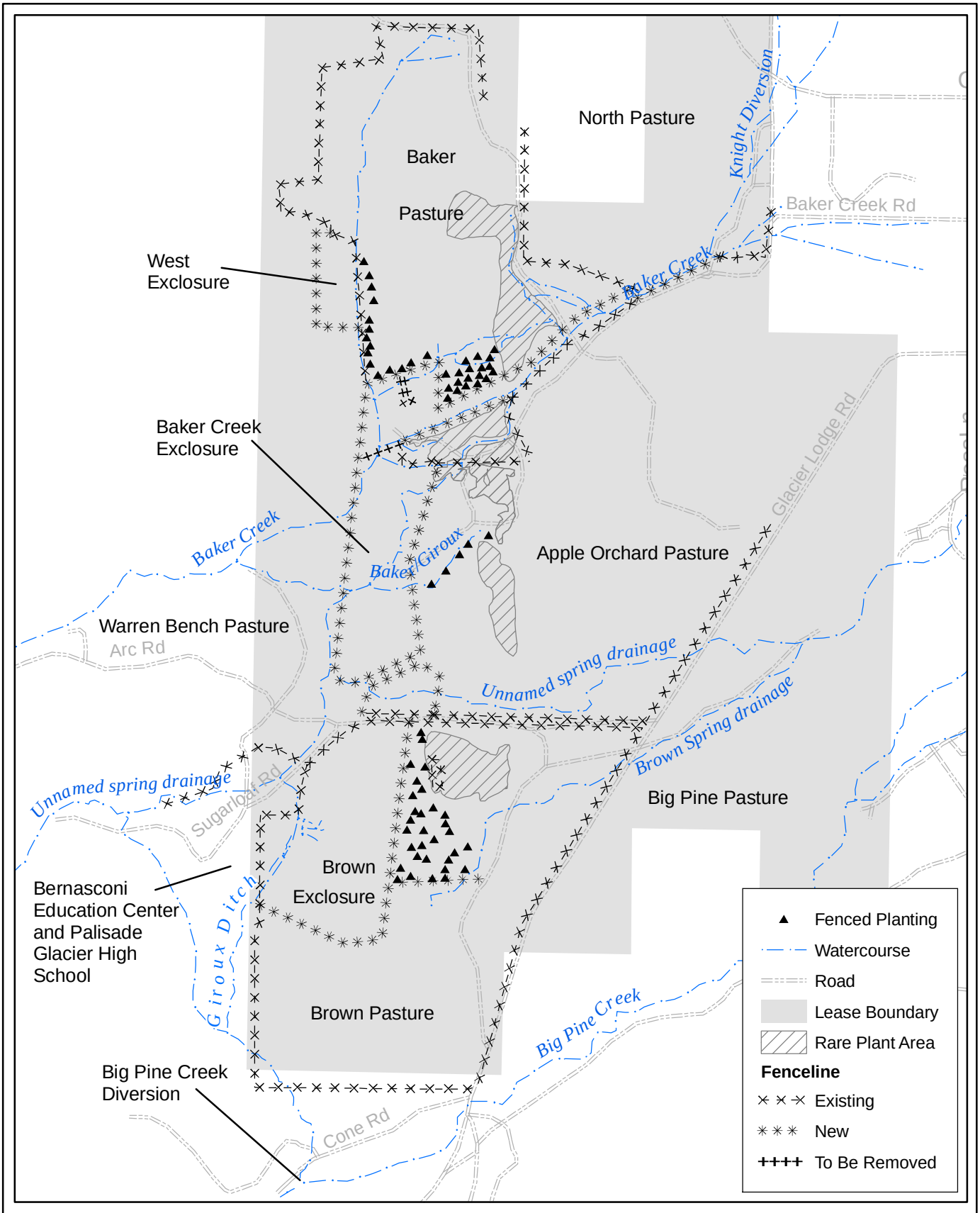


Figure 13.1-1
Drip Irrigation Alternative

January 2006

Data Source: ESI 2005a

Table 13.1-1 Comparison of MOU Consultant Project at Baker Creek and the Drip Irrigation Alternative at Baker Creek

ACTIONS PROPOSED	MOU CONSULTANT PROJECT	DRIP IRRIGATION ALTERNATIVE
Riparian Plantings	22.9 acres to be planted in 30 patches	Same as MOU Consultant Project
Irrigation of plantings	Irrigate from constructed ponds/new diversions Irrigation in Brown/Apple Orchard pastures in perpetuity 635 acre-feet/year in perpetuity	No constructed ponds; use of drip irrigation instead Irrigate up to three years in Brown/Apple Orchard 180 acre-feet for three years
Black Locust Removal	Removal/treatment of 13 acres over 8 years	Same as MOU Consultant Project
Grazing Exclosures	Create three grazing exclosures 3 permanent exclosures (total 141 acres) Permanent loss of 141 acres grazing lands	Same as MOU Consultant Project 2 permanent (82 acres)/1 temporary exclosure (59 acre) Permanent loss of 82 acres grazing land
Grazing Management	Remove grazing in cuckoo habitat during breeding season Eliminate grazing in Brown Exclosure Establish utilization standards	Same as MOU Consultant Project Winter grazing of Brown exclosure after 3-4 years Same as MOU Consultant Project
Trail Relocation	Install approx. 0.10 miles of new ORV trail	Same as MOU Consultant Project
Fuels Management	Remove 15' of brush on both sides of 1.6 miles of road and trim trees to a height of 10' in firebreak area	Same as MOU Consultant Project
Monitoring		
Grazing Monitoring	Utilization, Range Trend, Pasture Condition/Numbers and on-off	Same as MOU Consultant Project
Aerial Photos	Scale of 1:6,000; every 5 years	Scale of 1:2,400; approx every 5 yrs
Vegetation Mapping	Every 5 five years	Approximately every 5 years as imagery available
YBC habitat suitability		Repeated at 5, 10, and 20 years
Greenline Recruitment	Every 5 years	Not proposed
Survival of plantings	Subsampling/qualitative analysis yearly for 5 yrs	Quantitative/qualitative analysis all plantings for 4 yrs
YBC Survey	Annual YBC surveys for 20 years minimum	No YBC surveys
Riparian Bird Surveys	Annual riparian bird surveys for 20 years minimum	No riparian bird surveys

Table 13.1-2 Comparison of the MOU Consultant Project and the Two Alternatives Relative to the 1997 MOU

Measure	Does the Alternative Meet the Requirements of the Measure?		
	MOU Consultant Project	Drip Irrigation Alternative	No Project Alternative
MOU			
Maintain YBC Habitat	Yes	Yes	Yes
Improve YBC Habitat	Yes	Yes	No
Management Recommendations			
Laymon and Williams, 1994			
Hogback Creek			
Additional planting of willow	Cottonwoods	Cottonwoods	No
and cottonwood trees			
Reduce/elimin. spring and	Yes	Yes	No
summer grazing			
Baker Creek			
Additional planting of willow	Yes	Yes	No
and cottonwood trees			
Replace black locust with	Yes	Yes	No
native vegetation			
Eliminate spring and			
summer grazing			
Brown/Exclosure	Yes/Yes	Yes/Yes	No
Apple Orchard	Yes	Yes	No
Baker Creek/Exclosure	No/Yes	No/Yes	No
Amended Stipulation and Order			
Schedule	Yes~	Yes~	No

~A tentative schedule was delineated in the MOU Consultant Project and the Drip Irrigation Alternative does not recommend changing this schedule but the EIR process has shifted the implementation schedule to a later date.

Habitat Enhancements

The Drip Irrigation Alternative would maintain and/or improve yellow-billed cuckoo habitat in the Hogback and Baker Creek areas.

Planting. Under the Drip Irrigation Alternative, plantings will occur at both sites as proposed in the MOU Consultant Project. Pole cuttings will be planted in locations where soil moisture appears adequate for survival of cuttings. Each cutting will be marked with a plastic label and identifying code in order to monitor individual plantings. A five-foot auger will be used to plant the pole cuttings. During the augering process, the depth-to-groundwater will be recorded.

Irrigation. In place of creating ponds that require a water supply of approximately 635 acre-feet per year from LADWP's supply in perpetuity, a drip irrigation system would be established to provide temporary supplemental water to plantings in the Brown Pasture in

order to aid in establishment. Under historical conditions the area supported woodlands with the existing water table conditions without augmentation. LADWP proposes that habitat improvements can be achieved by taking advantage of existing high water tables and supplementing with drip irrigation. The drip system would require approximately one acre-foot of water per year and approximately three years of supplemental water will be required in order for the plantings to become established. The drip irrigation system would use water from a testhole or the Giroux Ditch. Drip line would be installed to irrigate each tree or shrub. The drip system would be operated during the irrigation season by LADWP, and may be moved as needed to promote plant growth.

Providing supplemental water to plantings in the Apple Orchard and Baker Exclosure would be accomplished by releasing water from the ditch and directing it along existing old ditch systems or natural drainages in the pastures. Plantings in the Apple Orchard and Baker Exclosure would be provided with supplemental water in this manner for up to three years, or until the plantings are well-established. There would be no changes to irrigation in the Baker Pasture from those discussed in the MOU Consultant Project.

The MOU Consultant Project would require approximately 635 acre-feet of water annually for perpetuity. In comparison, the Drip Irrigation Alternative would reduce the amount of water required to approximately 180 acre-feet per year with a commitment to provide the irrigation for three years or until the plantings are well-established.

Black Locust Control. Under the Drip Irrigation Alternative, black locust control will take place at both sites as described in the MOU Consultant Project.

Grazing Exclosures. Under the Drip Irrigation Alternative, the 72-acre Baker Exclosure, the 10-acre West Exclosure, the drift fence in the Brown Pasture, and the exclosures around individual group plantings will be installed as described in the MOU Consultant Project.

The Drip Irrigation Alternative for grazing exclosures differs from the MOU Consultant Project with regard to the Brown Pasture. The 59-acre Brown Exclosure would not be permanent as described in the MOU Consultant Project. The Drip Irrigation Alternative is a three to four year deferment of grazing in the Brown Exclosure, followed by an evaluation for potential winter grazing under a riparian prescription. Deferment of grazing would facilitate habitat development and survival of plantings, and reduce grazing impacts. This riparian prescription of 40 percent use of herbaceous vegetation, combined with winter use will avoid impacts to riparian vegetation and the understory by livestock. Winter grazing, if implemented, would be monitored and cattle would be removed when utilization criteria are met or if trees/shrubs were being impacted. This approach would facilitate habitat improvements, reduce grazing impacts, and reduce fire hazard while decreasing impacts to the grazing lessee as compared to the MOU Consultant Project.

Trail Relocation. Under the Drip Irrigation Alternative, trail relocation would take place as specified in the MOU Consultant Project.

Grazing Management

Hogback Lease. Grazing practices prescribed by the enhancement plans would be implemented on the Hogback Lease as specified in the MOU Consultant Project.

Baker Creek Lease. Grazing practices at the Baker Creek lease would be implemented as noted in the MOU Consultant Project description with the exception of the grazing management of the Brown Pasture and Exclosure and the timing of grazing use of the Apple Orchard Pasture.

The Brown Pasture is exterior-fenced and not grazed in conjunction with any other pasture. The livestock in the Brown Pasture are a Registered Beefmaster herd. Registered Beefmaster cattle are a unique part of the lessee's operation since all other grazing consists of a commercial cattle herd. Beefmaster cattle demand a premium price in the cattle market, allowing the producer to earn more from each individual animal. The lessee maintains a registered status by not allowing any breeding with the commercial cattle herd. If the registered herd of cattle was to breed with the commercial cattle herd, it would remove the premium that the lessee can charge for pure genetics and eliminate his registered herd status. The lessee's management practices have allowed for this registered herd to function as a viable part of the ranch operations. By changing grazing management, the lessee will no longer have a location to graze the registered herd due to the fact that all other pastures on the lease are used for commercial operations. This would result in the removal of the herd from the lessee's operations and would reduce the operation's annual revenues. It is thus the desire of the lessee to maintain use of this pasture in order to avoid this financial loss.

The Drip Irrigation Alternative would make the permanent removal of 59 acres of the Brown Pasture (the Brown Exclosure as described in the MOU Consultant Project) unnecessary, while still improving habitat conditions for yellow-billed cuckoos. The Drip Irrigation Alternative is a three to four year deferment of grazing in the Brown Exclosure, followed by an evaluation for potential winter grazing under a riparian prescription. This grazing deferment would facilitate habitat development and survival of plantings, and reduce grazing impacts. Winter grazing, if implemented, would be monitored and cattle would be removed when utilization criteria are met or if trees/shrubs were being impacted. This approach would facilitate habitat improvements, reduce grazing impacts, and reduce fire hazard while decreasing impacts to the grazing lessee as compared to the MOU Consultant Project.

Late fall grazing of the Apple Orchard Pasture, as described in the MOU Consultant Project, is not practical because forage in the pasture is predominantly spring annuals that are either not palatable or have lost nutritional quality by the fall. In the Drip Irrigation Alternative there would be a change in season of use for the Apple Orchard Pasture to March 1 to May 15. This change of grazing use will still eliminate grazing during the yellow-billed cuckoo breeding period in the Baker Creek area. All grazing utilization criteria for upland and riparian areas would be abided by as described in the MOU Consultant Project. The riparian utilization criteria should assure that the riparian understory is maintained or improved. Livestock would be removed from the pasture if

grazing-related impacts to cuckoo habitat are noted. Management of the Baker Pasture would not change from the MOU Consultant Project.

Fuels Management

Under the Drip Irrigation Alternative, fuels management would be as described in the MOU Consultant Project.

Monitoring and Adaptive Management

The level of vegetation monitoring would be less than described in the MOU Consultant Project, but would satisfy conditions of the MOU, be adequate to determine the success of yellow-billed cuckoo habitat enhancement efforts, and determine compliance with the established grazing standards. The monitoring that will be conducted includes annual grazing utilization monitoring, range trend monitoring, and mapping and sub sampling of riparian woodland areas in order to track trends in acres of low, medium, and high-suitability habitats for yellow-billed cuckoos.

Grazing Management Monitoring. Grazing utilization monitoring will be conducted annually in all grazed, non-irrigated pastures, following standard protocols developed by LADWP for the monitoring of grazing on all LADWP-owned lands. Utilization monitoring will be conducted on key forage species using locally-developed height-weight curves.

The monitoring of grazing management on irrigated pastures (the Baker Pasture) will consist of determining pasture condition using the Natural Resource Conservation Service Pasture Condition Assessment (Cosgrove et al. 1991). This rating system evaluates pasture productivity, stability of the plant community, and condition of soil and water resources. The system also helps identify management options needed to improve pasture condition and productivity. If the irrigated portion of the Baker pasture scores 80 percent or greater, the pasture will be considered to be in good to excellent condition and the pasture will not be subject to any changes in grazing management. If the pasture scores less than 80 percent, a management prescription change will be applied (i.e., changes in utilization, livestock numbers, and season, or duration of use).

Range condition monitoring in nonirrigated upland habitats will be conducted at permanent transect locations. Transect monitoring will consist of nested frequency sampling, vegetative cover sampling, shrub age classification, visual obstruction readings, and photo documentation. Sampling protocols will follow procedures outlined in the Interagency Technical Reference "Sampling Vegetation Attributes" in the *Rangeland Analysis and Planning Guide* (BLM 1996). This monitoring data will be evaluated in terms of the "trend" in plant cover, plant frequency, and shrub age structure of the vegetation community. Trend results will be compared to "Desired Future Condition."

In addition, in the Brown Exclosure, after three or four years of grazing deferment an evaluation for potential winter grazing will be conducted. When grazing is implemented,

utilization monitoring of forage species will be conducted, and trees and shrubs will be monitored for grazing impacts.

Vegetation Mapping. Aerial or satellite imagery of the sites will be obtained in conjunction with imagery obtained for all LADWP lands at intervals of approximately every 5 years. Vegetation mapping will be repeated as conducted by Whitehorse Associates (Whitehorse Associates 2004). This will allow for the tracking of trends in the total acreage of the various plant communities including riparian woodland and riparian shrub willow.

Yellow-billed Cuckoo Microhabitat Suitability Analysis. Following vegetation mapping, further sampling will occur in areas mapped as riparian shrub willow or riparian woodland. Sampling will be conducted as to provide input data for the yellow-billed cuckoo suitability analysis as described in ESI and Laymon (2004). The initial step will be to further refine the vegetation mapping. During ground-truthing, polygons will be delineated for riparian areas denoting the dominant canopy species association (tree willow, cottonwood, or shrub willows). Dominant canopy species is Criterion 1 in the yellow-billed cuckoo habitat suitability analysis, and the most significant contributor to habitat suitability. Further sub sampling will be conducted within species association polygons with regard to Criterion 2 (Canopy Cover), Criterion 3 (Canopy Height), and Criterion 4 (Foliage Volume). Sampling will follow "Methodology for yellow-billed Cuckoo Microhabitat Suitability" (Ecosystems and Laymon 2004). Output will be acreage of low, medium and high suitability habitat for yellow-billed cuckoos. Yellow-billed cuckoo suitability analysis will be conducted when new aerial photos or satellite imagery is available at approximately year five, year 10 and year 20 post-implementation. This will allow for the tracking of trends in the total acreage of low, medium, and high suitability habitat for yellow-billed cuckoo.

Planting Survival. Quantitative and qualitative monitoring of planting survival will be conducted at both sites to determine the survival rates and vigor of plantings relative to planting method and local conditions. At both the Baker and Hogback sites, monitoring of the success of plantings will be conducted annually for four years. Instead of establishing sampling plots in the planting areas, LADWP will conduct an assessment of the survival of all plantings. A total count of live and dead plantings will be done annually for four years beginning the growing season following completion of planting. The identifier of all surviving plantings will be recorded. A qualitative assessment of the vigor and health of surviving plantings will be conducted as described in the MOU Consultant Project.

Bird Monitoring. Monitoring for yellow-billed cuckoo and other birds would not be conducted under the Drip Irrigation Alternative. The requirement of the MOU is to maintain and/or improve habitat conditions for the yellow-billed cuckoo and is not tied to yellow-billed cuckoo or other riparian bird numbers. The vegetation monitoring described above will be able to track trends in habitat conditions for yellow-billed cuckoos and thus satisfy requirements of the MOU.

Adaptive Management. Adaptive management will be as described in the MOU Consultant Project.

Recreation Use. Recreation use would occur as described under the MOU Consultant Project.

Unforeseen Circumstances

The MOU Consultant Project does not discuss the responsibilities of LADWP in conjunction with unforeseen circumstances. As a consequence, the Drip Irrigation Alternative adds that LADWP will not be held accountable for circumstances beyond its control. If a fire destroys the project, when it is acknowledged that the MOU Consultant Project will increase fuel loads, LADWP will not be responsible for replacing any damaged portions of the projects that were impacted. However, in the event of fire, livestock grazing will be managed in order to assist in post-fire recovery of affected areas. Thus, in the event of fire, an area may be temporarily closed to grazing in order to prevent livestock from foraging on riparian vegetation that is recovering from fire. Before allowing livestock to graze fire-affected areas, LADWP staff will perform field evaluations to determine if grazing the fire-affected area will impede the recovery of riparian vegetation and cuckoo habitat.

Implementation of Drip Irrigation Alternative as presented will meet the requirements of the MOU and the S&O of enhancing and maintaining YBC habitat. Under the Drip Irrigation Alternative, no further actions other than those described above will be undertaken with regard to YBC habitat enhancement.

Project Endpoint

In the Drip Irrigation Alternative, project-associated actions will not continue indefinitely. LADWP's responsibilities for locust removal will not extend beyond the 10 years of implementation noted in the MOU Consultant Project description. All responsibilities for planting and replacement planting will be concluded following the completion of planting and two years of replacement planting. Monitoring of planting survival will be conducted annually for four years beginning the growing season following the completion of planting. Monitoring of yellow-billed cuckoo microhabitat suitability analysis will be conducted at approximately year five, year 10 and year 20 post implementation.

13.1.4 Impact Assessment of Drip Irrigation Alternative

The impacts associated with the Drip Irrigation Alternative are presented in Table 13.3-1. This table also presents the resource specific impacts for the No Project Alternative and the MOU Consultant Project.

13.2 ALTERNATIVES COMPARISON WITH PROJECT OBJECTIVES

Two criteria were applied to the two alternatives developed under the yellow-billed cuckoo habitat enhancement program directed by the 1997 MOU and the 2004 S&O. These criteria include: 1) the mandate for CEQA review of the project which includes consideration of the "No Project Alternative" (Public Resource Code 15126.6(e)); and 2) the requirements of the 1997 MOU and 2004 S&O. Exhibit B, Phase III of the S&O requires LADWP Board of Water and Power Commissioners to consider the final plans (the MOU Consultant Project /*Consultant's* Recommendations), and the LADWP Recommendations. The two alternatives meet the criteria noted above.

13.3 ALTERNATIVE EVALUATION

The alternatives that meet the screening criteria are the no project alternative, the MOU Consultant Project, and the Drip Irrigation Alternative. This section describes the potential environmental impacts of the no project alternative and the Drip Irrigation Alternative, as described above. Table 13.3-1 compares the impacts of the MOU Consultant Project with the No Project Alternative and the Drip Irrigation Alternative.

Table 13.3-1 Potential Environmental Impacts of the MOU Consultant Project and Alternatives

No Project Alternative	MOU Consultant Project	Drip Irrigation Alternative
Aesthetics		
Under the no project alternative, the existing viewshed would be unaltered. This would be an area of no effect.	Any negative visual impacts that could be created by removing black locust trees will be avoided by removal over a period of 8 to 10 years, with native vegetation planted in cleared areas. As a consequence, the visual changes in the vicinity would be short-lived as native riparian cover will be increasing during the black locust removal program. The black locust snags that will be left in place are an important component of wildlife habitat and a natural visual component of wooded areas and therefore should not cause an unnatural visual impact to the view from the roads. As a result, no significant impact to aesthetics is anticipated.	Any negative visual impacts that could be created by removing black locust trees will be avoided by removal over a period of 8 to 10 years, with native vegetation planted in cleared areas. As a consequence, the visual changes in the vicinity would be short-lived as native riparian cover will be increasing during the black locust removal program. The black locust snags that will be left in place are an important component of wildlife habitat and a natural visual component of wooded areas and therefore should not cause an unnatural visual impact to the view from the roads. As a result, no significant impact to aesthetics is anticipated.
Agricultural Resources		
With the no project alternative there would be no changes to agricultural operations and grazing lands would be unchanged. This is an area of no effect.	The MOU Consultant Project would result in significant impacts due to the loss of economically viable farming operations resulting from conversion of 141 acres of grazing land to non-agricultural use. The loss of grazing land is considered a significant impact. There are no other vacant LADWP lands available for grazing. Because feasible mitigation to reduce the impact of the loss of agricultural lands is not possible, this impact is considered significant and unavoidable.	The Drip Irrigation Alternative would result in a reduced economic impact due to the loss of economically viable farming operations by allowing the grazing of the Brown Exclosure after 3 to 4 years of deferment and changing the season of use for the Apple Orchard Pasture. The alternative would result in the conversion of 82 acres of grazing land to non-agricultural use. The loss of grazing land is considered a significant impact. There are no other vacant LADWP lands available for grazing. Because feasible mitigation to reduce the impact of the loss of agricultural lands is not possible, this impact is considered significant and unavoidable

No Project Alternative	MOU Consultant Project	Drip Irrigation Alternative
Air Quality		
The No Project Alternative would not generate additional emission or fugitive dust. This is an area of no effect.	The contribution of emissions from construction activities at both sites would be temporary and of short duration, and would not significantly degrade the current air quality. Construction operations will produce minor odors associated with equipment and materials, including diesel fuel, but these odors are not normally considered offensive and will be significantly diluted before reaching residences or congregation areas. Mitigation for fugitive dust emissions controls will be implemented if necessary.	The contribution of emissions from construction activities at both sites would be temporary and of short duration, and would not significantly degrade the current air quality. Construction operations will produce minor odors associated with equipment and materials, including diesel fuel, but these odors are not normally considered offensive and will be significantly diluted before reaching residences or congregation areas. Mitigation for fugitive dust emissions controls will be implemented if necessary.
Biological Resources		
Under the No Project Alternative, there would be no negative or beneficial impacts to biological resources. Biological resources will be maintained. Enhancement of habitat for wildlife species and special status wildlife, including the yellow-billed cuckoo will not occur. Disturbance and habitat loss associated with construction of the project elements would not take place.	Project construction elements would lead to temporary and permanent loss of upland scrub habitat and alteration of riparian cover; these impacts are considered less than significant. Impacts to upland scrub are less than significant due to the abundance of upland scrub in the area. Impacts to riparian cover include limited trimming; this impact is also considered less than significant because the vegetation will resprout, and also because the project will result in an overall increase in, and enhancement of, riparian habitat. Potential impacts to aquatic and riparian communities Baker Creek include reduced water flows in and alterations in water quality.	Project construction elements would lead to temporary and permanent loss of upland scrub habitat and alteration of riparian cover; these impacts are considered less than significant. Impacts to upland and riparian scrub habitats would be less in the Drip Irrigation Alternative since pond construction would not take place. Impacts to upland scrub are less than significant due to the abundance of upland scrub in the area. Impacts to riparian cover include limited trimming; this impact is also considered less than significant because the vegetation will resprout, and also because the project will result in overall an increase in, and enhancement of, riparian habitat. Potential impacts to aquatic communities include temporary reduction of water flow and alterations in water quality.

No Project Alternative	MOU Consultant Project	Drip Irrigation Alternative
	Baker Creek will continue to receive its natural flows. The reduction in supplemental flows is not expected to result in reductions in habitat or habitat quality for aquatic species or result in changes in the composition and recruitment of associated riparian and wetland habitats downstream of the diversion. Therefore no significant impacts to the aquatic or riparian communities of Baker Creek are expected. In years when runoff is less than 90 percent of normal, other downstream water users on Baker Creek would have to be reduced to meet the water requirements of the MOU Consultant Project. Construction of a new diversion and repairs to existing diversions, as well as removal of non-native trees using heavy equipment, may result in temporary increases in sediment discharges or turbidity and the potential for release of hazardous materials such as fuel or hydraulic fluid into adjacent waterways, and could cause potentially significant population losses of aquatic species. Implementation of BMP measures, including conducting construction activities during in the dry, would reduce these impacts to levels that are less than significant.	Baker Creek will continue to receive its natural flows. The reduction in supplemental flows is not expected to result in reductions in habitat or habitat quality for aquatic species or result in changes in the composition and recruitment of associated riparian and wetland habitats downstream of the diversion. Therefore no significant impacts to the aquatic or riparian communities of Baker Creek are expected. The Drip Irrigation Alternative would reduce to approximately 180 acre-feet per year with a commitment to provide the irrigation for three years or until the plantings are well-established, therefore there would be no long term downstream impacts. Construction of a new diversion and repairs to existing diversions, as well as removal of non-native trees using heavy equipment, may result in temporary increases in sediment discharges or turbidity and the potential for release of hazardous materials such as fuel or hydraulic fluid into adjacent waterways, and could cause potentially significant population losses of aquatic species. Implementation of BMP measures, including conducting construction activities in the dry, would reduce these impacts to levels that are less than significant.
	The MOU Consultant Project would not impact wetland habitat.	The Drip Irrigation Alternative would not impact wetland habitat.

No Project Alternative	MOU Consultant Project	Drip Irrigation Alternative
	Under the MOU Consultant Project, construction activities such as vehicle traffic outside of established roads, trail and fuel break construction, fence installation, and non-native tree removal will cause the temporary disturbance to wildlife populations. Implementation of BMPs, including avoidance, construction outside of sensitive habitats, and conducting construction activities in the fall and winter outside of wildlife breeding season, will reduce impacts to general wildlife, special status plant species, and special status wildlife species, to levels that are less than significant.	Under the Drip Irrigation Alternative, construction activities such as vehicle traffic outside of established roads, trail and fuel break construction, fence installation, and non-native tree removal will cause the temporary disturbance to wildlife populations. Implementation of BMPs, including avoidance, construction outside of sensitive habitats, and conducting construction activities in the fall and winter outside of wildlife breeding season, will reduce impacts to general wildlife, special status plant species, and special status wildlife species, to levels that are less than significant.
	Impacts to special status plant populations will be avoided by conducting project activities outside the growing season and avoidance of known habitat locations. These impacts are considered less than significant.	Impacts to special status plant populations will be avoided by conducting project activities outside the growing season and avoidance of known habitat locations. These impacts are considered less than significant.
	Construction-related impacts on special status wildlife populations will be reduced by conducting activities during the fall and winter months. Under these conditions, no impacts to nesting birds, bats, or the Owens Valley vole are expected	Construction-related impacts on special status wildlife populations will be reduced by conducting activities during the fall and winter months. Under these conditions, no impacts to nesting birds, bats, or the Owens Valley vole are expected.
	Wildlife movement corridors will be identified during fence construction, and wildlife movement crossing elements will be incorporated into the fencing. These impacts are considered less than significant.	Wildlife movement corridors will be identified during fence construction, and wildlife movement crossing elements will be incorporated into the fencing. These impacts are considered less than significant.

No Project Alternative	MOU Consultant Project	Drip Irrigation Alternative
Cultural Resources		
Cultural resource elements on the MOU Consultant Project sites would remain unchanged with the No Project Alternative. This is an area of no effect.	Construction activities, relocation of the ORV trail, fuels management activities, vegetation control, and planting activities associated with the MOU Consultant Project have the potential to disturb cultural resources. The project will be designed to avoid impacts to documented cultural resources. This includes placing fencelines, the ORV trail, and plantings away from recorded cultural resources. If necessary, a qualified archaeologist may flag or stake site boundaries prior to planting or installing fence or trail when the location of such resources are in question. In addition, black locust trees that represent a cultural landscape element will be treated with herbicide and left in-situ as standing snags in order to avoid the disturbance of cultural deposits. Using these precautionary measures, the MOU Consultant Project will result in less than significant impacts to cultural resources.	Construction activities, relocation of the ORV trail, fuels management activities, vegetation control, and planting activities associated with the MOU Consultant Project have the potential to disturb cultural resources. This alternative would be designed to avoid impacts to documented cultural resources. This includes placing fencelines, the ORV trail, and plantings away from recorded cultural resources. If necessary, a qualified archaeologist may flag or stake site boundaries prior to planting or installing fence or trail when the location of such resources are in question. In addition, black locust trees that represent a cultural landscape element will be treated with herbicide and left in-situ as standing snags in order to avoid the disturbance of cultural deposits. Using these precautionary measures, the Drip Irrigation Alternative will result in less than significant impacts to cultural resources.
Geology/Soils		
The No Project Alternative would result in no impacts from geology and soils. This is an area of no effect.	Impacts from the MOU Consultant Project would have no impacts to geology or cause the risk of loss, injury or death due to seismic activity. BMPs would be implemented at the limited areas of ground disturbance, resulting in no significant impacts from soil erosion.	The Drip Irrigation Alternative would have no impacts to geology or cause the risk of loss, injury or death due to seismic activity. BMPs would be implemented at the limited areas of ground disturbance, resulting in no significant impacts from soil erosion.

No Project Alternative	MOU Consultant Project	Drip Irrigation Alternative
Hazards & Hazardous Materials		
The No Project Alternative would not result in the release of hazardous materials, or an increase in fuel loads on wildland. This is an area of no effect.	The MOU Consultant Project would incorporate BMPs associated with handling and use of fuels, lubricants, and pesticides, reducing potential impacts to a level of less than significant. The MOU Consultant Project at Baker Creek would increase fuel loads in the vicinity of the community of Big Pine. A fuel break would be installed to allow for control of wildland fires should they occur. These impacts are considered less than significant.	The Drip Irrigation Alternative would incorporate BMPs associated with handling and use of fuels, lubricants, and pesticides, reducing potential impacts to a level of less than significant. The Drip Irrigation Alternative at Baker Creek would increase fuel loads in the vicinity of the community of Big Pine. However, this alternative would reduce fire hazards associated with the Brown Exclosure by returning grazing after a three to four year deferment. A fuel break would be installed to allow for control of wildland fires should they occur. These impacts are considered less than significant.
Noise		
The No Project Alternative would not alter the existing noise generated on the sites. This is an area of no effect.	Construction activities at the proposed sites would result in a short-term, temporary increase in the ambient noise level as a result of the operation of construction equipment; this temporary increase in noise level would be primarily experienced close to the noise source. Noise from these activities would be below the Inyo County land use compatibility requirement and would only take place in daylight hours. Impacts from noise under the MOU Consultant Project Alternative would be less than significant.	Construction activities at the proposed sites would result in a short-term, temporary increase in the ambient noise level as a result of the operation of construction equipment; this temporary increase in noise level would be primarily experienced close to the noise source. Noise from these activities would be below the Inyo County land use compatibility requirement and would only take place in daylight hours. Impacts from noise under the Drip Irrigation Alternative would be less than significant.

No Project Alternative	MOU Consultant Project	Drip Irrigation Alternative
Recreation		
The No Project Alternative would not alter the existing recreational use patterns on the sites. This is an area of no effect.	The MOU Consultant Project will maintain existing recreational opportunities during, and subsequent to, implementation of the enhancement projects; there would be minimal alterations to recreational uses, including re-routing of a small segment of ORV track to maintain a loop trail for ORV users and mountain-bikers, as well as limiting hunting activities somewhat at both sites. Impacts to recreation under the Proposed Project Alternative would be less than significant.	The Drip Irrigation Alternative will maintain existing recreational opportunities during, and subsequent to, implementation of the enhancement projects; there would be minimal alterations to recreational uses, including re-routing of a small segment of ORV track to maintain a loop trail for ORV users and mountain-bikers, as well as limiting hunting activities somewhat at both sites. Impacts to recreation under the Drip Irrigation Alternative would be less than significant.

No Project Alternative	MOU Consultant Project	Drip Irrigation Alternative
Water Resources		
The No Project Alternative would result in no impacts to hydrology or water quality.	Construction-related elements of the MOU Consultant Project have the potential for soil erosion covering approximately one acre of ground that would be disturbed at Baker Creek and Hogback Creek. BMPs would be implemented to mitigate for these impacts. The MOU project would utilize 635 acre-feet per year of water from Baker Creek; water efficiency measures would be implemented to mitigate for potential impacts to downstream beneficial uses that may occur in years with less than 90 percent of normal precipitation. The use of ponds on the Brown Exclosure would create some local alteration of the groundwater conditions. Therefore, the Project is not expected to significantly deplete groundwater supplies or interfere with groundwater recharge. Localized modifications to water distribution over the Baker Creek site would occur, and could continue or be slightly modified as the site is adaptively managed in the future. The new and existing diversions off of two ditches that will be used for the Baker Creek portion of this project will be designed to not impede or redirect flood flows. Portions of the project are at risk of inundation by mudflows. While the financial investment in this project is substantial, it is not so great that LADWP would be unable to repair any damages due to mud flows with minimal effort and expenditure of resources.	Construction-related elements of the Drip Irrigation Alternative have the potential for soil erosion covering less than one acre of ground that would be disturbed at Baker Creek and Hogback Creek. BMPs would be implemented to mitigate for these impacts. The Drip Irrigation Alternative would utilize 180 acre-feet per year of water from Baker Creek for a period of three years. Drip irritation associated with his Alternative would have a negligible effect on groundwater. Localized and temporary modifications to water distribution over the Baker Creek site would occur, and could continue or be slightly modified as the site is adaptively managed in the future. This Alternative would not change the current conditions for flood flows. Portions of the project are at risk of inundation by mudflows. While the financial investment in this project is substantial, it is not so great that LADWP would be unable to repair any damages due to mud flows with minimal effort and expenditure of resources.

13.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

While required for review under CEQA, selection of the No Project Alternative would avoid impacts related to construction and implementation (i.e. water supply, agricultural lands and grazing), but would not meet the basic habitat goals identified in the MOU and S&O. As, such, the no project alternative cannot reasonably be considered to be the environmentally superior alternative.

Both the MOU Consultant Projects and the Drip Irrigation Alternative would meet the basic habitat goals of the MOU and S&O. Implementation of either the MOU Consultant Project or the Drip Irrigation Alternative would result in similar construction and implementation impacts. The Drip Irrigation Alternative would avoid impacts arising from the construction of diversions and ponds in Brown Exclosure. The magnitude of impacts on grazing, agricultural lands, and downstream water supply would be lower under the Drip Irrigation Alternative. The Drip Irrigation Alternative is considered the environmentally superior alternative, because the construction related impacts would be fewer, and the magnitude of impacts on grazing, agricultural lands, and water supply would be less.

14.0 CUMULATIVE IMPACTS

In keeping with Section 15130 of the CEQA Guidelines, the following discussion evaluates potential cumulative impacts that could arise with the implementation of the proposed enhancement plans in conjunction with other actions.

For the purposes of this analysis, cumulative impacts on project-related resources result from the combination of the MOU Consultant Project and other projects which affect the same resources. Other projects include past, present and reasonably foreseeable projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency. The following cumulative impact assessment focuses on the project-affected resources on the Hogback Creek and Baker Creek sites, and the resources downstream of Baker Creek.

14.1 CONTRIBUTING PROJECTS

The proposed enhancement plans would take place on relatively large tracts of land, surrounded by expanses of federal lands with dispersed land uses. Projects considered in this assessment include the MOU Consultant Project , and projects identified in consultation with local land management agencies, including BLM, INF, and Inyo County Planning Department. Due to the localized nature of the impacts of the proposed enhancement plans, this analysis considers related projects in close proximity to the affected resources, with a focus on projects that would take place simultaneously. These projects are discussed below.

14.1.1 The Proposed Enhancement Plans

The Initial Study (CEQA Checklist) (Appendix A) for the MOU Consultant Project concluded that the MOU Consultant Project would not affect the following environmental resource areas: land use/planning, mineral resources, population/housing, public services, and transportation/traffic. This document evaluates the potential impacts of the proposed enhancement plans on aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards, hydrology/water quality, noise, and recreation. Table 15.1-1 summarizes the impacts expected with implementation of the proposed plans.

Table 14.1-1 Summary of Impacts for the MOU Consultant Project

MOU Consultant Project
Aesthetics
Any negative visual impacts that could be created by removing black locust trees will be avoided by removal over a period of 8 to 10 years, with native vegetation planted in cleared areas. As a consequence, the visual changes in the vicinity would be short-lived as native riparian cover will be increasing during the black locust removal program. The black locust snags that will be left in place are an important component of wildlife habitat and a natural visual component of wooded areas and therefore should not cause an unnatural visual impact to the view from the roads. As a result, no significant impact to aesthetics is anticipated.

MOU Consultant Project
Agricultural Resources
The MOU Consultant Project would result in significant impacts due to the loss of economically viable farming operations and the conversion of farmland to non-agricultural use. The loss of grazing land is considered a significant impact. There are no other vacant LADWP lands available for grazing. Because feasible mitigation to reduce the impact of the loss of agricultural lands is not possible, this impact is considered significant and unavoidable.
Air Quality
The contribution of emissions from construction activities at both sites would be temporary and of short duration, and would not significantly degrade the current air quality. Construction operations will produce minor odors associated with equipment and materials, including diesel fuel, but these odors are not normally considered offensive and will be significantly diluted before reaching residences or congregation areas. Mitigation for fugitive dust emissions controls will be implemented if necessary.
Biological Resources
Project construction elements would lead to temporary and permanent loss of upland scrub habitat and alteration of riparian cover; these impacts are considered less than significant. Impacts to upland scrub are less than significant due to the abundance of upland scrub in the area. Impacts to riparian cover include limited trimming; this impact is also considered less than significant because the vegetation will resprout, and also because the project will result in an overall increase in, and enhancement of, riparian habitat.
Potential impacts to aquatic and riparian communities Baker Creek include reduced water flows in and alterations in water quality.
Baker Creek will continue to receive its natural flows. The reduction in supplemental flows is not expected to result in reductions in habitat or habitat quality for aquatic species or result in changes in the composition and recruitment of associated riparian and wetland habitats downstream of the diversion. Therefore no significant impacts to the aquatic or riparian communities of Baker Creek are expected. In years when runoff is less than 90 percent of normal, other downstream water users on Baker Creek would have to be reduced to meet the water requirements of the MOU Consultant Project. Construction of a new diversion and repairs to existing diversions, as well as removal of non-native trees using heavy equipment, may result in temporary increases in sediment discharges or turbidity and the potential for release of hazardous materials such as fuel or hydraulic fluid into adjacent waterways, and could cause potentially significant population losses of aquatic species. Implementation of BMP measures, including conducting construction activities during in the dry, would reduce these impacts to levels that are less than significant.
The MOU Consultant Project would not impact wetland habitat.
Under the MOU Consultant Project, construction activities such as vehicle traffic outside of established roads, trail and fuel break construction, fence installation, and non-native tree removal will cause the temporary disturbance to wildlife populations. Implementation of BMPs, including avoidance, construction outside of sensitive habitats, and conducting construction activities in the fall and winter outside of wildlife breeding season, will reduce impacts to general wildlife, special status plant species, and special status wildlife species, to levels that are less than significant.
Impacts to special status plant populations will be avoided by conducting project activities outside the growing season and avoidance of known habitat locations. These impacts are considered less than significant.
Construction-related impacts on special status wildlife populations will be reduced by conducting activities during the fall and winter months. Under these conditions, no impacts to nesting birds, bats, or the Owens Valley vole are expected
Wildlife movement corridors will be identified during fence construction, and wildlife movement crossing elements will be incorporated into the fencing. These impacts are considered less than significant.

MOU Consultant Project
Cultural Resources
Construction activities, relocation of the ORV trail, fuels management activities, vegetation control, and planting activities associated with the MOU Consultant Project have the potential to disturb cultural resources. However, caution will be taken in implementing the project to avoid impacts to documented cultural resources. This includes placing fencelines, the ORV trail, and plantings around recorded cultural resources. If necessary, a qualified archaeologist may flag or stake site boundaries prior to planting or installing fence or trail when the location of such resources are in question. In addition, black locust trees that represent a cultural landscape element will be treated with herbicide and left in-situ as standing snags in order to avoid the disturbance of cultural deposits. Using these precautionary measures, the MOU Consultant Project will result in less than significant impacts to cultural resources.
Geology/Soils
Impacts from the MOU Consultant Project would have no impacts to geology or cause the risk of loss, injury or death due to seismic activity. BMPs would be implemented at the limited areas of ground disturbance, resulting in no significant impacts from soil erosion.
Hazards & Hazardous Materials
The MOU Consultant Project would incorporate BMPs associated with handling and use of fuels, lubricants, and pesticides, reducing potential impacts to a level of less than significant.
The MOU Consultant Project at Baker Creek would increase fuel loads in the vicinity of the community of Big Pine. A fuel break would be installed to allow for control of wildland fires should they occur. These impacts are considered less than significant.
Noise
Construction activities at the proposed sites would result in a short-term, temporary increase in the ambient noise level as a result of the operation of construction equipment; this temporary increase in noise level would be primarily experienced close to the noise source. Noise from these activities would be below the Inyo County land use compatibility requirement and would only take place in daylight hours. Impacts from noise under the MOU Consultant Project Alternative would be less than significant.
Recreation
The MOU Consultant Project will maintain existing recreational opportunities during, and subsequent to, implementation of the enhancement projects; there would be minimal alterations to recreational uses, including re-routing of a small segment of ORV track to maintain a loop trail for ORV users and mountain-bikers, as well as limiting hunting activities somewhat at both sites. Impacts to recreation under the Proposed Project Alternative would be less than significant.
Water Resources
Construction-related elements of the MOU Consultant Project have the potential for soil erosion covering approximately one acre of ground that would be disturbed at Baker Creek and Hogback Creek. BMPs would be implemented to mitigate for these impacts. The MOU Consultant Project would utilize 635 acre-feet per year of water from Baker Creek; water efficiency measures would be implemented to mitigate for potential impacts to downstream beneficial uses that may occur in years with less than 90 percent of normal precipitation. The use of ponds on the Brown Exclosure would create some local alteration of the groundwater conditions. Therefore, the Project is not expected to significantly deplete groundwater supplies or interfere with groundwater recharge. Localized modifications to water distribution over the Baker Creek site would occur, and could continue or be slightly modified as the site is adaptively managed in the future. The new and existing diversions off of two ditches that will be used for the Baker Creek portion of this project will be designed to not impede or redirect flood flows. Portions of the project are at risk of inundation by mudflows. While the financial investment in this project is substantial, it is not so great that LADWP would be unable to repair any damages due to mud flows with minimal effort and expenditure of resources.

14.1.2 Reasonably Foreseeable Projects

Three projects in close proximity to the locations of the MOU Consultant Project sites were identified for this evaluation, including the Big Pine Regreening Project, Big Pine Ditch Project, and the grazing operations on the adjoining BLM grazing allotments.

Northeast Big Pine Regreening Project

The Big Pine Northeast Regreening Project is located northeast of Big Pine, east of U.S. Highway 395, south of the Triangle Campground and west of the Big Pine Canal. The Standing Committee approved this 30-acre project in 1988 as an enhancement/mitigation project.

One of the potential sources of water for the Project is Baker Creek. New ditches and check structures, designed by the Department and installed by the lessee, will be used to flood irrigate up to 30 acres of new pasture. This project is in the planning stage and CEQA analysis is not available.

The Improved Big Pine Ditch System Project

Since approximately 1942, some Big Pine residents have had small ditches through their properties. However, about 30 percent of the original ditch system has been abandoned. As part of the Inyo/Los Angeles Agreement, the Improved Big Pine Ditch System project was developed to reestablish a ditch system in Big Pine. The project goal is to reestablish a ditch system within the town so that all of the residents in the town could have a surface water supply through their properties if desired. The project calls for up to six cubic feet per second of water from April to late September. Water for the ditch system is diverted from Big Pine Creek or could be supplied from the new well west of town. Replacement water for the six cubic feet per second will come from a new well west of town or from the town domestic well.

The MOU Consultant Project was evaluated under CEQA, and a Mitigated Negative Declaration (MND) was prepared. The MND identified less than significant impacts on air quality due to the potential for fugitive dust during construction. These impacts would be controlled by implementation of the dust control measures during construction. The MND also identified potentially significant impacts associated with groundwater pumping. These impacts would be addressed by the terms and conditions of the Water Agreement and the Green Book. These documents provide a protocol for assessment, evaluation, and mitigation of impact on groundwater including dependent vegetation and existing wells. The MOU Consultant Project would have no effect on other resources (LADWP 2003).

BLM Grazing Allotments

BLM administers grazing allotments on lands adjacent to both the Baker Creek and Hogback Creek sites. These include the following allotments near the Baker Creek site: Shannon Canyon/Baker Creek, Black Mine, Red Mountain, and East Crater Mountain; and the Alabama Hills allotment adjacent to Hogback Creek. Grazing on these BLM

allotments, under the terms and conditions of the Bishop Resource Management Plan (BLM 1993), was evaluated and an Environmental Assessment (EA) was prepared in keeping with NEPA in 2003. The EA identified limited to negligible impacts due to grazing on these allotments on the following resources: air, noxious weeds, cultural resources, soils, water quality, riparian and wetland areas, and vegetation. Grazing is expected to benefit wildlife populations and social and economic values. Native American concerns were still understudy (BLM 2003).

14.2 THRESHOLDS OF SIGNIFICANCE

For the purposes of this analysis, cumulative impacts were considered significant when the impact of the MOU Consultant Project combined with the impacts of the related projects exceeds the threshold of significance for the environmental resource area, as described in Sections 3 through 12 of this document. No additional thresholds were used to evaluate cumulative impacts.

14.3 POTENTIAL CUMULATIVE IMPACTS

The MOU Consultant Project is likely to result in short-term impacts associated with the construction elements of the project (fencing, trail creation, ponds, non-native tree removal etc), and long-term permanent alteration of the site. The following is an assessment of the potential for short-term and long-term cumulative impacts.

Potential for Short-term Cumulative Impacts. During the course of the implementation phase of the Project, construction related activities are expected to take place on the sites including the construction of new fences, trail construction, pond construction, construction and replacement of new diversions, planting of native trees and shrubs, and removal of non-native trees. These activities are expected to generate emissions of air pollutants and noise, disturb soil, and potentially increase the risk to the environment for exposure of hazardous materials. These activities may disrupt wildlife and recreational users. These conditions could lead to erosion of unstable soils and localized turbidity in waterways within the project footprint, although any such effect would be very temporary and local in nature.

The continued grazing of the BLM allotments adjacent to the Hogback project site is not likely to coincide with the proposed construction elements of the proposed Hogback enhancement plan. Grazing activities on this allotment would take place from February to the end of June (BLM 2003). The proposed construction element on the Hogback Creek site would likely take place in the fall or winter. Construction related activities at the Hogback Creek site are not expected to coincide with nearby activities related to grazing, Therefore cumulative short-term impacts at Hogback Creek are not expected.

At Baker Creek, grazing on the Shannon Canyon/Baker Creek allotment would take place between March and May. Continued grazing of the remaining allotments would likely take place from June until December. The EA for these activities identified negligible air emission, potential for limited soil erosion, and limited water quality degradation (BLM 2003).

It is likely that the Improved Big Pine Ditch System project and Big Pine Regreening project would also be implemented during the construction phase of the project. The Big Pine Regreening project could generate similar types of impacts as the proposed enhancement plan at Baker Creek. The Improved Big Pine Ditch Project could generate impacts related to fugitive dust during construction, which would be mitigated.

Activities related to the grazing allotments are expected to take place throughout the allotments, covering 13,053 acres. While the Improved Big Pine Ditch System project and Big Pine Regreening project are located near Big Pine, they are well removed from the Baker Creek site by topography and approximately one mile in distance. These projects are likely to generate short-term construction related disturbances on a limited period basis, over a broad geographic area, therefore, the potential for short-term cumulative impacts due to construction related activities is expected to be less than significant.

Potential for Long-term Cumulative Impacts. Onsite conditions persisting after construction of the MOU Consultant Project include alterations of the site and alterations of activities on the site. Following the construction phase of the Project, altered vegetation conditions are expected on the site. These are expected to be gradual over a ten year period, as black locust trees are removed and native vegetation increases in cover and stature. Following construction of the diversions on the Giroux and Baker Creek ditches and implementation of project related water releases, flows downstream of the project in Baker Creek may be reduced. The timing of onsite grazing activities would be altered, and stocking reduced. There is a remote chance that the project related construction could disrupt onsite subsurface historic and prehistoric sites.

Continued grazing of the Alabama Hills allotment is not expected to contribute to visible alterations of the landscape, reduction or alteration of the packstock grazing operations, or increases in fuels on the Hogback Creek site.

Similarly, projects in the vicinity are not expected to create visible alterations of the landscape, alteration of the cattle grazing operations or increases in fuels on the Baker Creek site.

Grazing on BLM lands adjacent to the site is expected to control fuel buildup on adjacent lands. Therefore, long-term cumulative impacts on aesthetics, agricultural resources and fuels, are not expected to result from project implementation at the Baker Creek and Hogback Creek sites.

Flows in Baker Creek would not be altered by the Improved Big Pine Ditch project or continued grazing on the adjacent BLM allotments. The amount of water necessary to implement the MOU Consultant Project can only be supplied in years that runoff is equal to or exceeds 90 percent of normal. In years that runoff is less than 90 percent of normal; other downstream water uses on Baker Creek would have to be reduced to meet the water requirements of the MOU Consultant Project. These downstream water uses include riparian and fish flows in Baker Creek, LADWP municipal water exports, LADWP irrigated pasture, stockwater, Inyo County Farm, the Knight Manor Housing area and

potentially the Northeast Big Pine Regreening Project that will be implemented in the near future. The project components associated with the Baker Creek site would use 635 acre-feet of water per year, and result in significant unavoidable impacts. Cumulative impacts on downstream water uses are also considered significant and unavoidable.

15.0 PERSONS CONSULTED AND PREPARERS

15.1 PERSONS CONSULTED

Mark Hill, Ecosystem Sciences
Sherman Jensen, White Horse Associates

15.2 PREPARERS

Brian Tillemans, LADWP Watershed Resources
Paula Hubbard, LADWP Watershed Resources
David Martin, LADWP Watershed Resources
Dale Schmidt, LADWP Watershed Resources
Debbie House, LADWP Watershed Resources
Lori Dermody, LADWP Watershed Resources
Charles Holloway, LADWP Environmental Services
Thomas Dailor, LADWP Environmental Services
George Carlson, Project Manager, URS Corporation
Jim Sherar, Project Coordinator, Garcia and Associates
Russ Bevill, Cultural Resources, URS Corporation
Cristina Ferrari, Air Quality, URS Corporation
Jacqueline Finck, Environmental Specialist, Garcia and Associates
Brian Galey, GIS, Garcia and Associates
Carole Garcia, Editor, Garcia and Associates
Heather Johnson, Biology, Garcia and Associates
Cynthia Kayser, Recreation, Garcia and Associates
David Kelly, Editor, Garcia and Associates
John Lague, Air Quality, URS Corporation
Anne MacDonald, Geology/Soil, Hazards, and Water Resources, URS Corporation
Emily Moshofsky, Environmental Planning, URS Corporation
Liza Ryan, Environmental Specialist, Garcia and Associates
Chris Watson, GIS, GeoDatascape
Sheyna Wisdom, Noise, URS Corporation
Chris Wright, GIS, GeoDatascape

16.0 ACRONYMS & REFERENCES

16.1 ACRONYMS

Acronyms, Units of Measurement or Symbols or Abbreviations

ACOE	U.S. Army Corps of Engineers
AQMP	Air Quality Management Plan
AQS	Air Quality Standard
ASTM	American Society for Testing and Materials
ATV	All Terrain Vehicle
AUM	Animal Unit Month
BC	Baker Creek
bgs	below ground surface
BLM	Bureau of Land Management
BMP	Best Management Practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CSQA	California Stormwater Quality Association
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDF	California Department of Forestry and Fire Protection
CFGC	California Fish and Game Commission
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Commission
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CORP	California Outdoor Recreation Plan
CRHR	California Register of Historical Resources
CWA	Clean Water Act
DPA	Direct Protection Area
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESI	Ecosystem Sciences Incorporated
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
GIS	Global Information System
GPS	Global Positioning System
GBUAPCD	Great Basin Unified Air Pollution Control District
HC	Hogback Creek

Acronyms, Units of Measurement or Symbols or Abbreviations

HUD	U.S. Department of Housing and Urban Development
ICWD	Inyo County Water Department
LADWP	Los Angeles Department of Water and Power
LRWQCB	Lahontan Regional Water Quality Control Board
MVZ	University of California Berkeley Museum of Vertebrate Zoology
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NRCS	National Resource Conservation Service
OBEC	Otis Bay Environmental Consultants
OHWM	Ordinary High Water Mark
ORV	Off Road Vehicle
PRC	Public Resources Code
RV	Recreational Vehicle
SEA	Significant Ecological Area
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SNA	Significant Natural Area
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
UCD	University of California Davis
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WEPP	Water Erosion Pilot Project
WRCC	Western Regional Climate Center
ac-ft	acre-foot
cfs	cubic feet per second
cm/day	centimeters per day
CO	carbon monoxide
dB	decibels
dBA	A-weighted sound level
E	East
Ft	feet
ft/year	feet per year
ft^2/year	square feet/year
g/cm^3	grams per centimeter cubed
Hz	Hertz
in	inches
L10	noise level equals or exceeds during 10 percent of a stated time
L50	noise level equals or exceeds during 50 percent of a stated time
L90	noise level equals or exceeds during 90 percent of a stated time
lbs/day	pounds per day
Ldn	Day-Night Average Noise Level
Leq	equivalent sound level

Acronyms, Units of Measurement or Symbols or Abbreviations

Lmax	maximum sound level indicator
Lmin	minimum sound level indicator
M	Magnitude
m	meter
mg/L	milligram per liter
mg/m^3	milligram per meter cubed
NE	northeast
NO_2	nitrogen dioxide
NW	northwest
O_3	ozone
ppm	parts per million
Pb	lead
PM_{10}	particulate matter equal to or smaller than 10 microns in diameter
$PM_{2.5}$	particulate matter equal to or smaller than 2.5 microns in diameter
R	Range
RMS	root-mean-square
ROG	reactive organic gas
S	South
SE	southeast
Sec.	Section
SO_2	sulfur dioxide
SW	southwest
T	Township
TDS	total dissolved solids
$\mu g/m^3$	microgram per meter cubed

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