

Comment Set B0018, cont.
 The Nevada Hydro Company Inc

REVISED "ADDITIONAL MITIGATION MEASURES"
 LEAPS GENERATION AND TRANSMISSION ALTERNATIVE
 (Continued)

B0018-38 cont.

Number	Mitigation Measure
B-5a(LE) (Cont.)	<p>A Habitat Management Plan for any required, off-site mitigation shall be prepared by a biologist approved by the Lead Agencies and other agencies with jurisdiction over the project. The Habitat Management Plan must be approved in writing by the Lead Agencies and other agencies with jurisdiction over the project prior to the initiation of any activities which may impact special status plant resources. The Applicant shall work with the Lead Agencies and other agencies with jurisdiction over the project until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired off-site mitigation parcels. The Habitat Management Plan shall include, but shall not be limited to: [1] Legal descriptions of all off-site mitigation parcels approved by the Lead Agencies and other agencies with jurisdiction over the project. [2] Baseline biological data for all mitigation parcels. [3] Designation of a land management entity approved by the Lead Agencies and other agencies with jurisdiction over the project to provide in-perpetuity management. [4] A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan. [5] Designation of responsible parties and their roles (e.g., provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity). [6] Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to the Lead Agencies and other agencies with jurisdiction over the project.</p>
B-7a(LE)	<p>Cover all steep-walled trenches or excavations used during construction to prevent the entrapment of wildlife (e.g., reptiles and small mammals). BIO-APM-14 <u>BIO-APM-24(B-6c)</u> shall be modified to ensure that all steep-walled trenches or excavations used during construction shall be covered at all times except when being actively utilized. If the trenches or excavations cannot be covered, exclusion fencing (i.e., silt fencing) shall be installed around the trench or excavation, or it shall be covered to prevent entrapment of wildlife. Open trenches, or other excavations that could entrap wildlife shall be inspected by the qualified biologist (see Mitigation Measure B-1c(LE)) a minimum of three <u>two</u> times per day and immediately before backfilling. Furthermore, employees and contractors shall look under vehicles and equipment for the presence of wildlife before movement. If wildlife is observed, no vehicles or equipment would be moved until the animal has left voluntarily or is removed by the qualified biologist. Should a dead or injured listed species be found in a trench or excavation or anywhere in the construction zone or along an access road, the qualified biologist shall contact the Lead Agencies and other agencies with jurisdiction over the project within 48 hours of the finding. The qualified biologist shall report the species found, the location of the finding, the cause of death (if known), and shall submit a photograph and any other pertinent information.</p>
B-7e(LE)	<p>Conduct least Bell's vireo and southwestern willow flycatcher surveys, and implement appropriate avoidance/minimization/compensation strategies. All grading or brushing taking place within riparian habitats of the least Bell's vireo or southwestern willow flycatcher during construction shall be conducted from September 16 through March 14, which is outside the least Bell's vireo and southwestern willow flycatcher breeding seasons.</p> <p>When conducting all other construction activities during the breeding season of March 15 through September 15 within 500 feet of habitat in which least Bell's vireos and/or southwestern willow flycatchers are known to occur or have potential to occur, a biologist permitted by the USFWS shall survey for least Bell's vireos and southwestern willow flycatchers within one week prior to initiating activities in an area.</p> <p>If least Bell's vireos or southwestern willow flycatchers are present, a permitted biologist shall survey for nesting vireos and flycatchers approximately once per week within 500 feet of the construction area, for the duration of the activity in that area during the breeding season.</p> <p>If/when an active nest is located, a 300-foot no-construction buffer zone shall be established around each nest site. No construction shall take place within this buffer until the nest is no longer active unless there are physical or safety constraints. If construction must take place within the buffer, a qualified acoustician shall monitor noise as construction approaches the edge of the occupied vireo/flycatcher habitat as directed by the permitted biologist. If the noise meets or exceeds the 60 dB(A) Leq threshold, or if the biologist determines that the activities in general are disturbing the nesting activities, the biologist shall have the authority to halt construction [or redirect] and shall consult with the agencies with jurisdiction over the project to devise methods to reduce the noise and/or disturbance. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nesting birds and the activities, and working in other areas until the young have fledged. The permitted biologist shall monitor the nest daily until either activities are no longer within 300 feet of the nest, or the fledglings become independent of their nest.</p> <p>Mitigation for the loss of least Bell's vireo- or southwestern willow flycatcher-occupied habitat <u>on non-federal lands in San Diego County</u> (or designated critical habitat for the flycatcher) shall be implemented as follows. Permanent impacts to occupied habitat and/or designated critical habitat shall include off-site acquisition and preservation of occupied habitat or designated critical habitat at a 3:1 ratio. Temporary impacts to occupied habitat or designated critical habitat shall include 1:1 on-site restoration and 2:1 off-site acquisition and preservation of occupied habitat and/or designated critical habitat.</p>

Comment Set B0018, cont.
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**REVISED “ADDITIONAL MITIGATION MEASURES”
LEAPS GENERATION AND TRANSMISSION ALTERNATIVE
(Continued)**

Number	Mitigation Measure
B-7e(LE) (Cont.)	<p><u>Mitigation for the loss of least Bell's vireo- or southwestern willow flycatcher-occupied habitat on non-federal lands in Riverside County under the Riverside County MSHCP (or designated critical habitat for the flycatcher) shall be implemented as follows: Permanent impacts to more than 10 percent of occupied habitat and/or designated critical habitat will require a DBESP. If the loss is the least environmentally damaging alternative, the impacts to occupied habitat or designated critical habitat shall include 1:1 on-site restoration.</u></p> <p>If a USFWS protocol, pre-construction survey, conducted in an area where presence of the vireo or flycatcher was assumed in this analysis determines that the species is absent, then the mitigation shall be reduced accordingly. Any acquired habitat shall be approved by the Lead Agencies and other agencies with jurisdiction over the project.</p> <p>A Habitat Management Plan for any required, off-site mitigation shall be prepared by a biologist approved by the Lead Agencies and other agencies with jurisdiction over the project. The Habitat Management Plan must be approved in writing by the Lead Agencies and other agencies with jurisdiction over the project prior to the initiation of any activities which may impact (directly or indirectly) the least Bell's vireo or southwestern willow flycatcher or its habitat. The Applicant shall work with the Lead Agencies and other agencies with jurisdiction over the project until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired vireo or flycatcher habitat. The Habitat Management Plan shall include, but shall not be limited to: [1] Legal descriptions of all acquired least Bell's vireo or southwestern willow flycatcher habitat approved by the Lead Agencies and other agencies with jurisdiction over the project. [2] Baseline biological data for all least Bell's vireo or southwestern willow flycatcher habitat. [3] Designation of a land management entity approved by the Lead Agencies and other agencies with jurisdiction over the project to provide in-perpetuity management. [4] A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan. [5] Designation of responsible parties and their roles (e.g., provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity). [6] Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to the Lead Agencies and other agencies with jurisdiction over the project.</p>
B-7f(LE)	<p>Conduct quino checkerspot butterfly surveys and implement appropriate avoidance/minimization/compensation strategies. A biologist permitted by the USFWS shall determine suitable habitat areas (i.e., non-excluded areas per the 2002 USFWS protocol) within any designated USFWS QCB survey area that would be impacted by project construction.</p> <p>A pre-construction, USFWS protocol presence/absence survey for the adult QCB shall be conducted within all suitable habitat for this species in the construction zone within any designated USFWS QCB survey area. The survey shall be conducted in a year where the QCB is readily observed at USFWS QCB-monitored reference sites to determine what areas are occupied by the QCB (i.e., any suitable habitat within 1 km of a current QCB sighting is considered occupied) and what areas are not occupied. The USFWS permitted biologist shall record the precise locations of QCB larval host plants within the construction zone (and 10 meters beyond) using GPS technology. If the protocol pre-construction survey is conclusive for determining absence of the QCB, then areas without the butterfly would not require mitigation.</p> <p>If the protocol pre-construction survey is not conclusive for determining QCB absence (due to limited detectability per the 2002 protocol, for example), or if a survey is not conducted, then all suitable habitat areas would be considered potentially occupied and would require mitigation as follows. <u>On non-federal lands in San Diego County</u>, if construction occurs outside the larvae and adult activity season (June 1 through October 15) and stays at least 10 meters away from all host plant locations, then no mitigation is required. If construction occurs between October 16 and May 31 or within 10 meters of host plant locations, then (1) temporary impacts to the habitat shall be mitigated through on-site restoration of temporarily disturbed areas and off-site acquisition and preservation of an equal sized area of QCB-occupied habitat (a 2:1 mitigation ratio) and (2) permanent impacts shall be mitigated through off-site acquisition and preservation of QCB-occupied habitat at a 2:1 ratio (i.e., two acres acquired for each acre lost). Any acquired habitat shall be approved by the Lead Agencies and other agencies with jurisdiction over the project. A USFWS permitted biologist shall be present during all construction activities in potentially occupied habitat to monitor and assist the construction crews to ensure impacts occur only as allowed. This same mitigation shall apply where the protocol pre-construction survey was conclusive for determining that the QCB is present.</p> <p>If host plant mapping is not possible during the pre-construction survey (e.g., drought prevents plant germination), then all suitable habitat (i.e., non-excluded habitat per the 2002 protocol) shall be considered occupied by the QCB and mitigated under the assumption that the QCB is present.</p>

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REVISED "ADDITIONAL MITIGATION MEASURES"
 LEAPS GENERATION AND TRANSMISSION ALTERNATIVE
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Number	Mitigation Measure
B-7i(LE) (Cont.)	<p>A Habitat Management Plan for any required, off-site mitigation shall be prepared by a biologist approved by the Lead Agencies and other agencies with jurisdiction over the project. The Habitat Management Plan must be approved in writing by the Lead Agencies and other agencies with jurisdiction over the project prior to the initiation of any activities which may impact (directly or indirectly) the QCB or its habitat. The Applicant shall work with the Lead Agencies and other agencies with jurisdiction over the project until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired QCB habitat. The Habitat Management Plan shall include, but shall not be limited to: [1] Legal descriptions of all acquired QCB habitat approved by the Lead Agencies and other agencies with jurisdiction over the project. [2] Baseline biological data for all QCB habitat. [3] Designation of a land management entity approved by the Lead Agencies and other agencies with jurisdiction over the project to provide in-perpetuity management. [4] A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan. [5] Designation of responsible parties and their roles (e.g., provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity). [6] Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to the Lead Agencies and other agencies with jurisdiction over the project.</p> <p>The Applicant shall provide compensation for temporary and permanent loss of critical habitat at a ratio of 2:1. The total required mitigation shall include off-site purchase and preservation of 16 acres of QCB critical habitat or other habitat acceptable to USFWS. The remainder of the mitigation shall be implemented as is applicable.</p>
B-7j (LE)	<p>Conduct arroyo toad surveys, and implement appropriate avoidance/minimization/compensation strategies. A pre-construction, USFWS protocol survey shall be conducted for the toad in the construction zone (by a biologist permitted by the USFWS to handle the toad) where absence of the species has not been proven to conclusively define the impacts to occupied habitat. In the absence of this survey data, the mitigation acreages required below shall stand. Where the pre-construction survey determines the species is absent, the mitigation shall be reduced accordingly.</p> <p>The removal of toad riparian breeding habitat shall occur from October through December to minimize potential impacts to breeding adults (including potential sedimentation impacts to toad eggs) and dispersing juveniles. Where the toad is present (or assumed to be present if no pre-construction survey is conducted), the construction zone shall be fenced with exclusion fencing to prevent toad access to it. The fencing shall be a silt-screen type barrier comprised of a minimum 24-inch high fence with the remainder (minimum 12 inches) anchored firmly against the ground. The fence may be buried if necessary to exclude toad access. The fence locations shall be identified by a USFWS permitted biologist and adjusted as necessary. Exclusion fencing shall be monitored daily by a qualified biologist (see Mitigation Measure B-1c[LE]) and maintained in its original condition by construction personnel for the entire length of the construction period in toad habitat.</p> <p>Pre- and post-exclusion fencing surveys within the construction zone shall be conducted for arroyo toads by a biologist permitted by the USFWS to handle the toad. Prior to construction commencement, a minimum of three surveys shall be conducted by this biologist following installation of the fencing and prior to construction activities. One of these clearance surveys must take place no more than 24 hours prior to activity commencement. These surveys shall be conducted during appropriate climatic conditions and during the appropriate time of day or night to maximize the likelihood of encountering arroyo toads. If conditions are not appropriate for arroyo toad movement during surveys, the biologist may attempt to elicit a response from the toads during nights (i.e., at least one hour after sunset), provided that temperatures are above 50°F, by spraying the project area with water to simulate a rain event. After the three clearance surveys outlined above have been completed, daily surveys shall be conducted each morning prior to the continuation of construction or maintenance activity. Any toads found shall be relocated to appropriate similar habitat outside project impact areas.</p> <p>Mitigation for the loss of arroyo toad-occupied habitat on non-federal lands in San Diego County shall be implemented as follows. Permanent impacts to occupied, arroyo toad breeding habitat shall include off-site acquisition and preservation of occupied arroyo toad breeding habitat at a 3:1 ratio. Permanent impacts to occupied, upland burrowing habitat shall include off-site acquisition and preservation of occupied, upland burrowing habitat at a 2:1 ratio. Temporary impacts to occupied breeding habitat shall include 1:1 on-site restoration and 2:1 off-site acquisition and preservation of occupied breeding habitat. Temporary impacts to occupied, upland burrowing habitat shall include 1:1 on-site restoration and 1:1 off-site acquisition and preservation of occupied, upland burrowing habitat. Any acquired arroyo toad habitat shall be approved by the Lead Agencies and other agencies with jurisdiction over the project.</p>

Comment Set B0018, cont.
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**REVISED “ADDITIONAL MITIGATION MEASURES”
LEAPS GENERATION AND TRANSMISSION ALTERNATIVE
(Continued)**

B0018-38 cont.

Number	Mitigation Measure
B-7j (LE) (Cont.)	<p><u>Mitigation for the loss of arroyo toad or arroyo toad habitat on non-federal lands in Riverside County under the Riverside County MSHCP (or designated critical habitat for the toad) shall be implemented as follows. Permanent impacts to more than 10 percent to occupied habitat and/or designated critical habitat shall require a DBESP, or equivalent. If the loss is the least environmentally damaging alternative, the impacts to occupied habitat or designated critical habitat shall include 1:1 restoration.</u></p> <p>A Habitat Management Plan for any required, off-site mitigation shall be prepared by a biologist approved by the Lead Agencies and other agencies with jurisdiction over the project. The Habitat Management Plan must be approved in writing by the Lead Agencies and other agencies with jurisdiction over the project prior to the initiation of any activities which may impact (directly or indirectly) the arroyo toad or its habitat. The Applicant shall work with the Lead Agencies and other agencies with jurisdiction over the project until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired arroyo toad habitat. The Habitat Management Plan shall include, but shall not be limited to: [1] Legal descriptions of all acquired arroyo toad habitat approved by the Lead Agencies and other agencies with jurisdiction over the project. [2] Baseline biological data for all arroyo toad habitat. [3] Designation of a land management entity approved by the Lead Agencies and other agencies with jurisdiction over the project to provide in-perpetuity management. [4] A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan. [5] Designation of responsible parties and their roles (e.g., provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity). [6] Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to the Lead Agencies and other agencies with jurisdiction over the project.</p>
B-7k(LE)	<p>Conduct Stephens' kangaroo rat surveys, and implement appropriate avoidance/minimization/ compensation strategies. A pre-construction, USFWS protocol survey shall be conducted for the SKR by a USFWS permitted biologist in the construction zone where absence of the species has not been proven to conclusively define the impacts to occupied habitat. In the absence of this survey data on non-federal lands in San Diego County, the mitigation acreages required below shall stand. Where the pre-construction survey determines the species is absent, the mitigation shall be reduced accordingly.</p> <p>Where the SKR is present (or if no pre-construction survey is conducted, and the SKR is assumed to be present), prior to vegetation clearing or other ground-disturbing activities, the construction zone shall be fenced to provide a barrier that excludes the SKR from the construction zone and delineates the work area. A USFWS permitted SKR biologist shall be present when the fence is installed to minimize habitat disturbance. The fence shall be constructed of ¼-inch gauge hardware cloth backed by silt fencing or other material if approved by the USFWS. No gaps greater than 0.5 inches shall be allowed within the exclusion fencing. The qualified biologist (see Mitigation Measure B-1c(LE)) or other designated personnel shall check the fencing at the end of each work day. If gaps greater than 0.5-inch are detected, they shall be repaired immediately. The exclusion fencing shall remain in place and be maintained without gaps until project construction is completed.</p> <p>Immediately preceding vegetation clearing or other ground-disturbing activities within the fenced areas, live-trapping of the SKR shall be conducted by the USFWS permitted biologist for a minimum of five nights. Trapping locations shall be selected at the discretion of the biologist in coordination with the USFWS. Trapped animals shall be released outside the fenced area in appropriate habitat. Results of the trapping effort shall be provided to the Lead Agencies and other agencies with jurisdiction over the project within 24 hours of trapping completion.</p> <p>Any pipes stored during construction shall be capped prior to the end of each work day to prevent SKR from entering the pipes.</p> <p>Mitigation for the loss of occupied SKR habitat shall be implemented as follows. Permanent impacts to occupied habitat shall include off-site acquisition and preservation of occupied habitat at a 2:1 ratio. Temporary impacts to occupied habitat shall include 1:1 on-site restoration and 1:1 off-site acquisition and preservation of occupied habitat. Any acquired SKR habitat shall be approved by the Lead Agencies and other agencies with jurisdiction over the project.</p>

Comment Set B0018, cont.
The Nevada Hydro Company Inc

**REVISED "ADDITIONAL MITIGATION MEASURES"
LEAPS GENERATION AND TRANSMISSION ALTERNATIVE
(Continued)**

B0018-38 cont.

Number	Mitigation Measure
<p>B-7k(LE) (Cont.)</p>	<p>A Habitat Management Plan for any required, off-site mitigation shall be prepared by a biologist approved by the Lead Agencies and other agencies with jurisdiction over the project. The Habitat Management Plan must be approved in writing by the Lead Agencies and other agencies with jurisdiction over the project prior to the initiation of any activities which may impact (directly or indirectly) the SKR or its habitat. The Applicant shall work with the Lead Agencies and other agencies with jurisdiction over the project until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired SKR habitat. The Habitat Management Plan shall include, but shall not be limited to: [1] Legal descriptions of all acquired SKR habitat approved by the Lead Agencies and other agencies with jurisdiction over the project. [2] Baseline biological data for all SKR habitat. [3] Designation of a land management entity approved by the Lead Agencies and other agencies with jurisdiction over the project to provide in-perpetuity management. [4] A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan. [5] Designation of responsible parties and their roles (e.g., provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity). [6] Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to the Lead Agencies and other agencies with jurisdiction over the project.</p> <p><u>In Riverside County, the project shall be implemented in a manner consistent with the Habitat Conservation Plan of the Stephens' Kangaroo Rat (SKR) in Western Riverside County. In compensation for direct and indirect impacts associated with the Applicant-initiated ground-disturbing activities undertaken in the SKR Core Reserve Area, the Applicant shall acquire property containing suitable habitat and subject to the following criteria: (1) compensatory acreage, off-setting physically disturbed acreage in the Core Reserve Area, shall be on a minimum 1:1 basis with no net loss of occupied habitat, based on the actual area of disturbance to be determined prior to the initiation of construction; (2) to the extent feasible, the Applicant will work with the Carlsbad Fish and Wildlife Office to find off-setting property or properties in, contiguous with, or directly adjacent to the boundaries of the Lake Mathews-Estelle Mountain Core Reserve Area; (3) the off-setting property or properties shall be occupied by SKR or shall contain suitable habitat for that species; (4) the property shall be maintained for conservation purposes by the Riverside County Habitat Conservation Agency; and (5) the adequacy of the selected property to offset impacts to SKR Core Reserve is subject to written concurrence of the USFWS. If off-setting properties cannot be located in or adjacent to the Lake Mathews-Estelle Mountain Core Reserve Area, the Lead Agencies will work with the USFWS to identify other areas for mitigation. Implementation shall occur prior to commencement of project-related ground-disturbing activities within the Core Area.</u></p> <p>For the new Valley-Serrano-Northern (Lake)-500-kV transmission line [and Northern (Lake) substation], the Applicant shall provide 7.6 acres of on-site restoration and 8.4 acres of acquisition and preservation of SKR-occupied habitat within or contiguous with the Lake Mathews-Estelle Mountain Core Reserve for impacts to the Lake Mathews-Estelle Mountain Core Reserve.</p>
<p>B-7l(LE)</p>	<p>Conduct coastal California gnatcatcher surveys, and implement appropriate avoidance/minimization/compensation strategies. All brushing or grading taking place within occupied habitat of the coastal California gnatcatcher (defined as within 500 feet of any gnatcatcher sightings during construction) shall be conducted from September 1 through February 14, which is outside the coastal California gnatcatcher breeding season. When conducting all other construction activities during the coastal California gnatcatcher breeding season of February 15 through August 30, within habitat in which coastal California gnatcatchers are known to occur or have potential to occur, the following avoidance measures shall apply.</p> <p>A USFWS permitted biologist shall survey for coastal California gnatcatchers within one week prior to initiating activities in an area. If coastal California gnatcatchers are present, but not nesting, a USFWS permitted biologist shall survey for nesting coastal California gnatcatchers approximately once per week within 500 feet of the construction area for the duration of the activity in that area during the breeding season.</p> <p>If/when an active nest is located, a 300-foot no-construction buffer shall be established around each nest site. To the extent feasible, no construction shall take place within this buffer until the nest is no longer active. However, if construction must take place within the 300-foot buffer, a qualified acoustician shall monitor noise as construction approaches the edge of the occupied gnatcatcher habitat as directed by the permitted biologist. If the noise meets or exceeds the 60 dB(A) Leq threshold, or if the biologist determines that the activities in general are disturbing the nesting activities, the biologist shall have the authority to halt [or redirect] construction and shall consult with the agencies with jurisdiction over the project to devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nesting coastal California gnatcatchers and the activities, and working in other areas until the young have fledged.</p>

Comment Set B0018, cont.
The Nevada Hydro Company Inc

**REVISED “ADDITIONAL MITIGATION MEASURES”
LEAPS GENERATION AND TRANSMISSION ALTERNATIVE
(Continued)**

B0018-38 cont.

Number	Mitigation Measure
B-7(LE) (Cont.)	<p>Mitigation for the loss of coastal California gnatcatcher-occupied habitat <u>on non-federal lands in San Diego County</u> shall be implemented as follows. Permanent impacts to occupied habitat shall include off-site acquisition and preservation of occupied habitat at a 2:1 ratio. Temporary impacts to occupied habitat shall be mitigated at a 2:1 ratio and shall include 1:1 on-site restoration and 1:1 off-site acquisition and preservation of occupied habitat.</p> <p>Mitigation for the loss of unoccupied designated critical habitat for the gnatcatcher <u>on non-federal lands in San Diego County</u> shall be implemented as follows. Permanent impacts to unoccupied designated critical habitat shall include off-site acquisition and preservation of designated critical habitat at a 2:1 ratio. Temporary impacts to unoccupied designated critical habitat shall include 1:1 on-site restoration.</p> <p>Any acquired coastal California gnatcatcher habitat shall be approved by the Lead Agencies and other agencies with jurisdiction over the project.</p> <p><u>Mitigation for the loss of California gnatcatcher occupied habitat on non-federal lands in Riverside County under the Riverside County MSHCP (or designated critical habitat for the load) shall be implemented as follows. Permanent impacts to more than 10 percent to occupied habitat and/or designated critical habitat shall require a DBESP, or equivalent. If the loss is the least environmentally damaging alternative the impacts to occupied habitat or designated critical habitat shall include 1:1 on-site restoration.</u></p> <p>A Habitat Management Plan for any required, off-site mitigation shall be prepared by a biologist approved by the Lead Agencies and other agencies with jurisdiction over the project. The Habitat Management Plan must be approved in writing by the Lead Agencies and other agencies with jurisdiction over the project prior to the initiation of any activities which may impact (directly or indirectly) the coastal California gnatcatcher or its habitat. The Applicant shall work with the Lead Agencies and other agencies with jurisdiction over the project until a plan is approved by all. The Habitat Management Plan shall provide direction for the preservation and in-perpetuity management of all acquired coastal California gnatcatcher. The Habitat Management Plan shall include, but shall not be limited to: [1] Legal descriptions of all acquired coastal California gnatcatcher habitat approved by the Lead Agencies and other agencies with jurisdiction over the project. [2] Baseline biological data for all coastal California gnatcatcher habitat. [3] Designation of a land management entity approved by the Lead Agencies and other agencies with jurisdiction over the project to provide in-perpetuity management. [4] A Property Analysis Record prepared by the designated land management entity that explains the amount of funding required to implement the Habitat Management Plan. [5] Designation of responsible parties and their roles (e.g., provision of endowment by the Applicant to fund the Habitat Management Plan and implementation of the Habitat Management Plan by the designated land management entity). [6] Management specifications including, but not limited to, regular biological surveys to compare with baseline; exotic, non-native species control; fence/sign replacement or repair, public education; trash removal; and annual reports to Lead Agencies and other agencies with jurisdiction over the project.</p> <p>The Applicant shall provide compensation for the permanent loss of gnatcatcher critical habitat at a ratio of 2:1 through acquisition and preservation of gnatcatcher critical habitat or other habitat acceptable to USFWS. The Applicant shall also provide on-site restoration of all and temporary loss disturbance of critical habitat at a ratio of 1:1. The mitigation shall include off-site purchase and preservation of gnatcatcher critical habitat or other habitat acceptable to USFWS. The remainder of the mitigation shall be implemented as is applicable.</p>
B-8a(LE)	<p>Conduct pre-construction surveys and monitoring for breeding birds. All vegetation clearing, except tree trimming or removal, shall take place between September 16 and February 14 (i.e., outside of the general avian breeding season of February 15 through September 15). Tree removal or trimming shall take place between September 16 and December 31 (i.e., outside the raptor breeding season of January 1 through September 15). If project construction (not vegetation clearing or tree trimming/removal) cannot occur completely outside the general avian breeding season, then pre-construction surveys for bird species' nests shall be conducted by a qualified biologist within 300 feet of the construction zone no more than seven days prior to the initiation of construction that would occur between February 15 and September 15.</p> <p>If project construction (not vegetation clearing or tree trimming/removal) cannot occur completely outside the raptor breeding season, then pre-construction surveys for active raptor nests shall be conducted by a qualified biologist within 500 feet of the construction zone no more than seven days prior to the initiation of construction that would occur between January 1 and September 15.</p> <p>If no active nests are observed, construction may proceed. If active nests are found, work may proceed provided that construction activity is (1) located at least 500 feet from raptor nests, (2) located at least 160 to 250 feet from occupied burrowing owl burrows, (3) located at least 300 feet from all other bird nests, and (4) noise levels do not exceed 60 dB(A) hourly Leq at the edge of nesting territories as determined by a qualified biologist in coordination with a qualified acoustician.</p>

Comment Set B0018, cont.
The Nevada Hydro Company Inc

**REVISED "ADDITIONAL MITIGATION MEASURES"
LEAPS GENERATION AND TRANSMISSION ALTERNATIVE
(Continued)**

B0018-38 cont.

Number	Mitigation Measure
B-8a(LE) (Cont.)	<p>In the case of raptors (except the burrowing owl), the noise level restriction stated above does not apply. Otherwise, if the noise meets or exceeds the 60 dB(A) Leq threshold, or if the biologist determines that the construction activities are disturbing nesting activities, the biologist shall have the authority to halt or <u>redirect</u> the construction and shall devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nest site and the construction activities, and working in other areas until the young have fledged. If noise levels still exceed 60 dB(A) Leq hourly at the edge of nesting territories and/or a no-construction buffer cannot be maintained, construction shall be deferred in that area until the nestlings have fledged. All active nests shall be monitored on a weekly basis until the nestlings fledge. The qualified biologist shall be responsible for documenting the results of the surveys and the ongoing monitoring and for reporting these results to the Lead Agencies and other agencies with jurisdiction over the project.</p>
B-10a(LE) ³	<p>Utilize collision-reducing techniques in installation of transmission lines. The Applicant shall install the transmission lines utilizing Avian Power Line Interaction Committee standards for collision-reducing techniques as outlined in "Mitigating Bird Collisions with Power Lines: The State of the Art in 1994" (APLIC, 1994).</p> <p>Placement of towers and lines shall not be located above existing towers and lines, topographic features, or tree lines to the maximum extent practicable. Power lines should be clustered in the vertical and horizontal planes to the maximum degree feasible, aligned with existing geographic features or tree lines, and located parallel (rather than perpendicular) to prevailing wind patterns.</p> <p>Overhead lines that are located in highly utilized avian flight paths shall be marked utilizing fixed mount Firefly Flapper/Diverters, swan flight diverter coils, or other diversion devices, if proven more effective, as to be visible to birds and to reduce avian collision with power lines.</p> <p>Where such markers are installed, the Applicant shall fund a study to determine the effectiveness of the markers as a collision-prevention measure since there are few, if any, studies that show if such markers work, especially on transmission lines. The Applicant shall develop a draft study protocol and submit it to the Lead Agencies and other agencies with jurisdiction over the project for review. The Applicant shall continue to work with these agencies until approval of a final study protocol is obtained. If the study shows the markers to be ineffective, the Applicant shall coordinate with the agencies with jurisdiction over the project to develop alternate collision protection measures.</p> <p>The Applicant shall implement an avian reporting system for documenting bird mortalities to help identify problem areas. The reporting system shall follow the format in Appendix C of "Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006" (APLIC, 2006) or a similar format. The Applicant shall submit a draft reporting protocol and reporting system to the Lead Agencies and other agencies with jurisdiction over the project for review and approval. The Applicant shall continue to work with these agencies until approval of a final reporting protocol and reporting system is obtained from the Lead Agencies. The Applicant shall develop and implement methods to reduce mortalities in identified problem areas. The methods shall be approved by the Lead Agencies and other agencies with jurisdiction over the project prior to implementation. Bird mortality shall continue to be documented in the problem areas per the avian reporting system to determine the effectiveness of the mortality reduction methods and to determine if new methods need to be developed.</p> <p>The area requiring markers for the new Valley-Serrano Northern (Lake) and Northern-Southern (Lake Pendleton or Lake Case Springs) 500-kV transmission lines includes where the transmission line would cross Temescal Wash near Lee Lake, Cow Canyon, Horseshoe Canyon, McVicker Canyon, Leach Canyon, Los Alamos Canyon, and Tenaja and San Mateo Creeks.</p>
B-12a(LE) ³	<p>Conduct maintenance activities outside the general avian breeding season. The Applicant shall educate all maintenance workers about the sensitivity of biological resources associated with the project and the necessity to avoid unauthorized impacts to them.</p> <p>In areas not cleared of vegetation in the prior two years, all vegetation clearing, except tree trimming or removal, shall take place between September 16 and February 14 (i.e., outside of the general avian breeding season of February 15 through September 15). Tree trimming or removal shall only take place between September 16 and December 31 (i.e., outside the raptor breeding season of January 1 through September 15).</p> <p>Other maintenance activities shall occur outside the general avian breeding season where feasible. For other maintenance activities that cannot occur outside the above-listed breeding seasons, a qualified biologist shall work with a qualified acoustician to determine if a maintenance activity would meet or exceed the 60 dB(A) Leq hourly noise threshold where nesting territories of the coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and burrowing owl occur.</p>

Comment Set B0018, cont.
The Nevada Hydro Company Inc

**REVISED “ADDITIONAL MITIGATION MEASURES”
LEAPS GENERATION AND TRANSMISSION ALTERNATIVE
(Continued)**

B0018-38 cont.

Number	Mitigation Measure
B-12a(LE) ³ (Cont.)	<p>If the noise threshold would not be met or exceeded at the edge of their nesting territories, then maintenance may proceed. If the noise threshold would be met or exceeded at the edge of their nesting territories, pre-maintenance surveys for nests of these species shall be conducted by a qualified biologist (USFWS permitted biologist for gnatcatcher, vireo, and flycatcher) within 300 feet of the maintenance area no more than seven days prior to initiation of maintenance that would occur between February 15 and August 30 for the gnatcatcher, March 15 and September 15 for the vireo, April 15 and September 15 for the flycatcher, and February 1 and August 31 for the burrowing owl. If active nests are found, work may proceed provided that methods, determined by the qualified acoustician to be effective, are implemented to reduce noise below the threshold. These methods include, but are not limited to, turning off vehicle engines and other equipment whenever possible and/or installing a protective noise barrier between a nesting territory and maintenance activities. If the qualified acoustician determines that no methods would reduce noise to below the threshold, maintenance shall be deferred until the nestlings have fledged as determined by the qualified biologist. Where noise-reducing methods are employed, active nests shall be monitored by the qualified biologist on a weekly basis until maintenance is complete or until the nestlings fledge, whichever comes first. The qualified biologist shall be responsible for documenting the results of the pre-maintenance nest surveys and the nest monitoring and for reporting these results to the Lead Agencies and other agencies with jurisdiction over the project.</p> <p>Animal Burrows/Dens. If any animal burrows or dens are identified during the pre-maintenance surveys for active bird nests, soil in a brush-clearing area shall be sufficiently dry before brush clearing to prevent damage to burrows or dens. At any time of year where maintenance would occur in occupied SKR habitat, all equipment and vehicles shall remain on existing access roads/staging areas (e.g., they shall not pull off the shoulder) to prevent the crushing of SKR burrows.</p>
B-15a	<p>Permanently close access roads along the transmission alignment. Monitor and manage the road closures to assure there is no public access to prevent an increase in disturbance to mountain lions and to prevent the introduction and spread of non-native plant species.</p>
B-15b	<p>Develop and implement an Invasive Weed Management Plan. Develop and implement a vegetation and invasive weed management plan to prevent and control noxious weeds and exotic plants of concern in project-affected areas during construction and over the term of any license issued for the project. The management plan shall include a pre-construction weed inventory; specific weed abatement methods, practices, and treatment timing; and long-term measures to control the introduction and spread of noxious weeds.</p>
B-17a	<p>Pay the Stephens' kangaroo rat fee assessment per the current Riverside County rate. The Applicant shall provide funding for impacts to the SKR Fee Assessment Area.</p>
V-S-14a ³	<p>Upper Reservoir Revegetation - Newly planted vegetation (per Mitigation Measure USFS-37 [as presented in the Applicant's PEA] shall be fertilized, irrigated, and maintained by the Applicant. Vegetation survival shall be guaranteed by the Applicant for the life of the LEAPS project. Upon abandonment of the reservoir, dam, pumping facility, the Applicant shall restore the landscape to near-natural conditions, as directed by the CNF [and FERC]. The Applicant shall provide a bond to the USDA Forest Service sufficient for removal of facilities and restoration of the landscape.</p>
L-1h ²	<p>Consult with Department of the Navy. During construction and operation of the project transmission line upgrade, the Applicant shall consult with the Department of the Navy to ensure that construction activities do not interfere with military activities at MCB Camp Pendleton.</p>
L-1h ^{2,3}	<p>Relocate Butterfield Elementary Visual and Performing Arts School. In coordination with the Lake Elsinore Unified School District, the proponent shall relocate the Butterfield Elementary Visual and Performing Arts School to an acceptable temporary location for the duration of construction of the Santa Rosa Powerhouse, Midpoint Substation, and water conduits within 1,000 feet of the school. Relocation site and plans shall be subject to approval of the district. <u>The Applicant will work closely with the Lake Elsinore Unified School District to minimize, to the extent feasible, construction-term impacts on Butterfield Elementary Visual and Performing Arts Magnet School. The Applicant's obligations do not, however, extend beyond those otherwise imposed under existing regulations concerning the physical siting of school facilities.</u> Compliance with those standards shall constitute reasonable mitigation for the project's construction and operational impacts.</p>
T-9b ³	<p>Add traffic lanes on Grand Avenue. The Applicant shall do one of the following in coordination with the City of Lake Elsinore: (1) add a second left turn lane to the Ortega Highway intersection approach to address the high number of left turns on to Ortega Highway from Grand Avenue, or (2) add a through lane on Grand Avenue (for a total of two) in both directions, at the Grand/Ortega intersection.</p>
P-6a	<p>Develop list of approved herbicides. The Applicant shall develop a list of herbicides to be used for construction, operation, and maintenance of the project ROW in consultation with USFWS and USDA Forest Service (on Forest System lands). This list shall be subject to agency approval at least 60 days prior to construction.</p>
P-6b ³	<p>Update and follow Sempra's Physical and Climatic Target Area Evaluation Form. The Applicant shall update Sempra's Physical and Climatic Target Area Evaluation Form to contain current contact information, and all personnel shall follow the steps laid out in the Form during all stages of project construction and operation.</p>

Comment Set B0018, cont.
 The Nevada Hydro Company Inc

REVISED "ADDITIONAL MITIGATION MEASURES"
 LEAPS GENERATION AND TRANSMISSION ALTERNATIVE
 (Continued)

B0018-38 cont.

Number	Mitigation Measure
P-9a ³	Notify residents and recreational users of rotenone use. At least 30 days prior to application of rotenone, the Applicant shall post signs at all lakeshore recreation areas and shall publish notices in local newspapers, informing the public of the timing of planned rotenone application. The notice shall provide information on lake closure and potential health effects. In addition, the Applicant shall patrol the lake at all recreation sites during the closure to ensure that no recreation takes place during the period of rotenone exposure.
G-1e	Minimize road construction. Any temporary roads developed for the project would be removed, recontoured, and revegetated following construction except where the USDA Forest Service [and/or the United States Marine Corps] authorizes continued use of the roads for transmission line maintenance, eliminating long-term impacts from temporary roads.
H-3b	Minimize impacts from road construction. To the extent possible, BMPs and sound road design practices that are cognizant of road construction effects shall be carried out to mitigate partly for the inherent effects of road construction on groundwater. In certain situations, there is no cost-effective alternative or mitigation for the adverse effects of hillslope road cuts on local groundwater. Transmission towers shall be installed via helicopter in areas with slopes greater than 15 percent to minimize the potential effects of road cuts on groundwater.
H-9b ³	Compensate affected water supply. Should destabilization of artesian groundwater serving as water supply occur, the Applicant shall compensate delivery of additional water supply <u>where a direct linkage between the Applicant's actions and a diminution of water supplies can be firmly affixed</u> in consultation with EVMWD.
H-12a	Isolate underground powerhouse from groundwater flows. The Applicant shall use a combination of sealing and water control sumps to isolate the powerhouse from underground flows. The Applicant shall ensure that groundwater flow patterns at the proposed Santa Rosa site are not adversely affected.
H-14a ³	Develop and implement a water spill, release, and/or leak prevention plan. <u>Unless otherwise addressed in any permit issued by FERC, the USFS, and/or the California Division of Safety of Dams, [a]t least 60 days prior to construction of the upper reservoir, the Applicant shall file with the State Water Resources Control Board (SWRCB) CPUC and EVMWD a plan for protection of the San Juan Creek Watershed from any water spill, release, and/or leak. The plan shall be reviewed and approved by the CPUC and EVMWD prior to initiation of construction activities. At a minimum, the plan must require the Applicant to (1) maintain the project area sealed off from the San Juan Creek Watershed during construction and operation of the project; (2) to periodically test the upper reservoir for any leaks, releases, and/or spills; (3) to inform the SWRCB CPUC and EVMWD immediately of the nature, time, date, location, and action taken for any spill affecting the San Juan Creek Watershed; and (4) establish a protocol for cleanup and monitoring any spill, release, and or leak that must be reviewed and approved by the SWRCB CPUC and EVMWD.</u>
<p>Notes:</p> <ol style="list-style-type: none"> The mitigation measures included herein are based on those mitigation measures identified by the CPUC and BLM and presented in Section E.7.2 (LEAPS Transmission and Generation Alternative) as presented in the Sunrise DEIR/DEIS. The "LEAPS Transmission and Generation Alternative," as presented therein, is assumed to be the same project as The Nevada Hydro Company's (TNHC) "Lake Elsinore Advanced Pumped Storage Project." In presenting this inventory of draft mitigation measures, TNHC has sought to accurately interpret the applicable measures identified by the CPUC and BLM and the alternative-specific modifications described in the Sunrise DEIR/DEIS. In addition, TNHC has made the following general modifications: (1) "SDG&E," "project proponent," "proponent," and "Licensee" have been changed to "Applicant" (as used herein, the term "Applicant" is assumed to refer to TNHC); (2) "Proposed Project" has been changed to "project"; (3) "State Park" (B-5a[LE]) has been changed to "USDA Forest Service"; (4) "ABDSP" has been changed to "CNF"; (5) reference to "SDG&E's NCCP mitigation credits" (B-1d) has been deleted; (6) references to "CPUC" and "BLM" have been changes to "Lead Agencies" and references to "State Parks," "USDA Forest Service," and "Wildlife Agencies" have been changed to "other agencies with jurisdiction over the project"; (7) the term "Applicant Proposed Measures (APMs)" is assumed to be synonymous with and inclusive of the "Protection, Mitigation, and Enhancement Measures (PMEs)" presented in the Applicant's PEA; (8) reference to any specific mitigation obligations concerning the "Proposed Project," when such reference is with regards to the Sunrise Powerlink Project, has been deleted; (9) for the purpose of consistency, reference to "USFS" and certain references to the "CNF" have been changed to "USDA Forest Service"; and (10) for the purpose of consistency, reference to specific project facilities has been changed to better correspond with the Applicant's PEA. If these changes are not consistent with the intent of and/or are not acceptable to the CPUC and BLM, TNHC requests the opportunity to discuss the identified changes prior to any formal action with regards thereto. Both mitigation measures have been identified as "L-1h" by the CPUC and BLM. TNHC does not presently support the inclusion of this measure, the precise language of this measure, or some portion thereof and requests the deletion of or, in consultation with the CPUC and BLM, the opportunity to formulate an alternative measure(s). In certain instances, TNHC's concerns relate only to a few words in each measure and not an opposition to its general intent. 	

Source: The Nevada Hydro Company, Inc.

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The Nevada Hydro Company Inc

Attachment C
Formal Section 7 Consultation
United States Fish and Wildlife Service

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92011



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COMMISSION

In Reply Refer To:
FWS-WRIV-08B0009/08F0004

Timothy J. Welch
Chief Hydro West Group 2
Federal Energy Regulatory Commission
888 First Street N.E.
Washington D.C. 20426

Subject: Formal Section 7 Consultation for the Lake Elsinore Advanced Pumped Storage Project (P-11858), Riverside County, California

Dear Mr. Welch:

This document responds to your March 1, 2006, request for formal section 7 consultation in accordance with the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*) for the above-mentioned project. The consultation addresses the potential effects of the proposed Lake Elsinore Advanced Pumped Storage (LEAPS) project on the federally endangered arroyo toad (*Bufo californicus*), Quino checkerspot butterfly (*Euphydryas editha quino*), Stephens' kangaroo rat (*Dipodomys stephensi*), and the federally threatened coastal California gnatcatcher (*Poliophtila californica californica*) and designated critical habitats for the coastal California gnatcatcher and Quino checkerspot butterfly.

Based upon the habitat assessments and surveys completed with negative results from 2001-2006 (MBA, pers. comm., 2007), the small amount of permanent disturbance of designated critical habitat (0.2 acres of the 27,529 acre Unit 10), and the nature of the designated critical habitat within the project area according to habitat assessment information (*i.e.*, non-native grasslands) (MBA, pers. comm., 2007), we conclude that the coastal California gnatcatcher and its designated critical habitat are not likely to be adversely affected by the proposed project. In addition, based upon the surveys and habitat assessments completed with negative results from 2001-2006 (MBA, pers. comm., 2007) and the small amount of permanent disturbance of designated critical habitat (0.4 acres of the 14,250 acre Lake Matthews Unit), we conclude that the Quino checkerspot butterfly and its designated critical habitat are not likely to be adversely affected by the proposed project.

For the Stephens' kangaroo rat, the project proponent has indicated that the project will be consistent with the Habitat Conservation Plan for the Stephens' Kangaroo Rat (RCHCA 1996). This will include mitigating permanent and temporary disturbance on a 1:1 basis for areas within the Lake Matthews-Estelle Mountain Core Reserve Area by acquiring additional habitat. This additional habitat will be located in, contiguous with, or directly adjacent to the boundaries of the Lake Matthews-Estelle Mountain Core Reserve Area, to the extent feasible, and the specific



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area will be subject to the concurrence of the U.S. Fish and Wildlife Service (Service). Habitat will be acquired prior to ground-disturbing activities within the Core Reserve Area. In addition, for habitat disturbance within the Stephens' Kangaroo Rat Fee Assessment Area, a \$500 fee will be paid on a per-acre basis. Finally, temporarily disturbed areas will be restored in accordance with a plan to be reviewed and approved by the Carlsbad Fish and Wildlife Office prior to ground disturbing activities within the Core Reserve Area. Thus, this project is consistent with the Habitat Conservation Plan for the Stephens' Kangaroo Rat and no additional section 7 analysis is necessary for this species.

In view of these determinations, we believe that the interagency consultation requirements of section 7 of the Act have been satisfied for these species. Should project plans change, or if additional information on the distribution of listed species becomes available, these determinations may be reconsidered.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The proposed project involves the issuance of a license by the Federal Energy Regulatory Commission (FERC) for the 500-megawatt LEAPS project which would be located on Lake Elsinore and San Juan Creek near the city of Lake Elsinore, Riverside County, California. The upper reservoir would be located in the headwaters of the San Juan Creek Watershed, also in Riverside County. The proposed project would consist of the following:

1. a lined upper reservoir (Decker Canyon) with a 180-foot-high main dam and a perimeter dike ranging up to 60 feet high and a gross storage volume of 5,750 acre-feet, usable storage of 5,500 acre-feet, and a surface area of about 76 acres at a normal maximum water surface elevation of 2,880 feet;
2. two parallel high-pressure water conduits, each consisting of a 7,890-foot-long concrete-lined power shaft and tunnel transitioning to a 250-foot-long, 12-foot-diameter steel penstock;
3. an underground powerhouse (Santa Rosa) containing two reversible pump-turbine units with a total installed capacity of 500 megawatts in the generating mode;
4. the existing Lake Elsinore to be used as a lower reservoir with a surface area of 3,319 acres and a storage capacity of 54,504 acre-feet at a normal pool elevation of 1,245 feet mean sea level;
5. two 1,950-foot-long, 20-foot-wide, and 20-foot-high concrete-lined tailrace tunnels;
6. a 25 to 50-acre surface switchyard/substation;

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7. about 32 miles of 500-kilovolt transmission line connecting the project to an existing Southern California Edison transmission line located north of the proposed project and to an existing San Diego Gas and Electric transmission line located to the south; and
8. appurtenant facilities.

Materials for an embankment would be obtained from excavated materials from the upper reservoir, powerhouse, and tunnel excavations. Final embankment design could call for a zoned earth and rockfill dam having a central impervious core or a concrete-faced earth and rockfill dam. The co-applicants propose that, overall, the project site would achieve a balance between excavation and fill, thereby avoiding the need to transport materials to the project site or to haul spoil materials from the project site. An exception to the excavation and fill balance would be in the case of an embankment type dam with an impervious core requiring low-permeability clay or clay-like material. The co-applicants have identified the Alberhill area located about 10 miles northwest of the project site as a likely source of clay; alternatively, the low-permeability material could be manufactured on site, requiring the import of bentonite to mix with on-site soils.

The dam would include a concrete-lined emergency spillway and a low-level outlet. A 20-foot-wide crushed stone roadway would be provided around the crest of the embankment to allow access for maintenance and inspection. An 8-foot-high chain-link fence would be located on the outer side of the crest roadway. The outside (downstream) face of the embankment would be seeded. The total footprint of the upper reservoir would be about 100 acres.

The specific proposed access roads and tower sites are documented in the October 25, 2007, correspondence from the project proponent (MBA, pers. comm., 2007) and identified by the Staff Alternative alignment. Conservation measures associated with the proposed project that will avoid or minimize effects to fish and wildlife resources are appended to this document.

STATUS OF THE SPECIES

The arroyo toad was listed as endangered on December 16, 1994 (59 FR 63264). At the time of listing, the arroyo toad was described as the arroyo southwestern toad (*Bufo microscaphus californicus*). Gergus (1998) published a genetic justification for the reclassification of the arroyo southwestern toad as a full species (*i.e.*, arroyo toad [*Bufo californicus*]). Critical habitat for the arroyo toad was designated on April 13, 2005 (69 FR 23254).

Description. The arroyo toad is a small, dark-spotted toad of the family Bufonidae. The parotoid glands, located on the top of the head, are oval-shaped and widely separated. A light/pale area or stripe is usually present on these glands and on top of the eyes. The arroyo toad's underside is buff-colored and usually without spots (Stebbins 1985). Recently metamorphosed individuals typically blend in with streamside substrates and are usually found adjacent to water. The male arroyo toad's courtship vocalization is a high trill, usually lasting 8-10 seconds per call.

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Habitat Affinities. Arroyo toads breed and deposit egg masses in shallow, sandy pools which form in low-gradient sections of streams. These stream segments are usually bordered by sand-gravel flood-terraces. Stream order, elevation, and floodplain width appear to be important factors in determining habitat capability (Griffin 1999, Sweet 1992). High stream order (*i.e.*, 3rd to 6th order), low elevation (particularly below 3,000 feet), and wide floodplains seem to be positively correlated with arroyo toad population size. However, small arroyo toad populations are found along 1st and 2nd order streams at elevations up to 4,600 feet, and this species has been known to occur at up to 8,000 feet in Baja (USFWS 1999).

Optimal breeding habitat consists of low-gradient sections of slow-moving streams with shallow pools; also, these areas contain nearby sandbars and adjacent, undeveloped stream terraces. Outside of the breeding season, arroyo toads are essentially terrestrial and are known to utilize a variety of upland habitats, including, but not limited to, sycamore-cottonwood woodlands, oak woodlands, coastal sage scrub, chaparral, and grassland (Griffin *et al.* 1999, Holland 1995). Arroyo toads usually burrow underground during periods of inactivity; thus, they tend to use upland habitats with friable soils (66 FR 9414).

The primary constituent elements of designated critical habitat include: 1) rivers or streams with hydrologic regimes that supply water to provide space, food, and cover needed to sustain eggs, tadpoles, metamorphosing juveniles, and adult breeding toads (specifically, the conditions necessary to allow for successful reproduction of arroyo toads are: a. breeding pools with areas less than 12 inches deep, b. areas of flowing water with current velocities less than 1.3 feet per second, and c. surface water that lasts for a minimum length of two months in most years (*i.e.*, a sufficient wet period in the spring months to allow arroyo toad larvae to hatch, mature, and metamorphose)); 2) low-gradient stream segments (typically less than 6 percent) with sandy or fine gravel substrates that support the formation of shallow pools and sparsely vegetated sand and gravel bars for breeding and rearing of tadpoles and juveniles; 3) a natural flooding regime, or one sufficiently corresponding to a natural regime, that will periodically scour riparian vegetation, rework stream channels and terraces, and redistribute sands and sediments, such that breeding pools and terrace habitats with scattered vegetation are maintained; 4) riparian and adjacent upland habitats (*e.g.*, alluvial scrub, coastal sage scrub, chaparral, and oak woodlands, but particularly alluvial streamside terraces and adjacent valley bottomlands that include areas of loose soil where toads can burrow underground) to provide foraging, aestivation, and living areas for subadult and adult arroyo toads; and 5) stream channels and adjacent upland habitats allowing for migration between foraging, burrowing, or aestivating sites, dispersal between populations, and recolonization of areas that contain suitable habitat.

Life History/Population Dynamics. Arroyo toad larvae feed on loose organic material such as interstitial algae, bacteria, and diatoms. They do not forage on macroscopic vegetation (Jennings and Hayes 1994, Sweet 1992). Juvenile toads rely on ants almost exclusively (USFWS 1999). By the time they reach 0.7 to 0.9 inches in length, they take more beetles, along with the ants (USFWS 1999, Sweet 1992). Adult toads probably consume a wide variety of insects and arthropods including ants, beetles, spiders, larvae, caterpillars, and others.

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Breeding typically occurs from February to July on streams with persistent water (Griffin *et al.* 1999). Female arroyo toads must feed for a minimum of approximately two months to develop the fat reserves needed to produce a clutch of eggs (Sweet 1992). Females apparently move to breeding pools for only short time periods during the breeding season (66 FR 9414). Eggs are deposited and larvae develop in shallow pools with minimal current and little or no emergent vegetation. The substrate in these pools is generally sand or fine gravel overlain with silt. Arroyo toad eggs hatch in four to five days and the larvae are essentially immobile for an additional five to six days (Sweet 1992). They then begin to disperse from the pool margin into the surrounding shallow water, where they spend an average of 10 weeks (Sweet 1992). After metamorphosis (June-July), the juvenile toads remain on the bordering gravel bars until the pool no longer persists (usually from 8 to 12 weeks depending on site and yearly conditions) (Sweet 1992). Most individuals become sexually mature by the following spring (Sweet 1992).

Arroyo toads spend much of their lives in upland habitats (66 FR 9414). Upland habitat use occurs during both the breeding and non-breeding season (66 FR 9414). This species has been observed moving approximately 1 mile within a stream reach and 0.6-1.2 miles away from the stream, into native upland habitats (USFWS 1999, Holland 1995, Sweet 1992) or agricultural areas (Griffin *et al.* 1999). Movement distances may be regulated by topography and channel morphology. Griffin (1999) reported a female arroyo toad traveling more than 948 feet perpendicular from a stream and Holland and Sisk (2000) found arroyo toads 0.7 miles from a water course. Most arroyo toad movements and activity appears to occur between the months of January and August (Ramirez 2003). Arroyo toads tend to burrow relatively deep during the fall and winter and remain largely inactive (Sweet 1992).

Historic and Current Range. Historically, arroyo toads occurred in at least 22 river basins in southern California from the upper Salinas River system in Monterey County to San Diego County and southward to the vicinity of San Quintin, Baja California, Mexico. They have been found at elevations extending from sea level to 8,000 feet (USFWS 1999). Arroyo toads have been extirpated from an estimated 75 percent of their former range in the United States (USFWS 1999), and they now occur primarily in small, isolated areas in the middle to upper reaches of streams. The current distribution of the arroyo toad in the United States is from the San Antonio River in Monterey County, south to the Tijuana River and Cottonwood Creek Basin along the Mexican border. Arroyo toads are also known from a seemingly disjunct population in the Arroyo San Simeon River System, about 10 miles southeast of San Quintin, Baja California. Although the arroyo toad occurs principally along coastal drainages, it also has been recorded at several locations on the desert slopes of the Transverse Range (Jennings and Hayes 1994, Patten and Myers 1992). There are six units of arroyo toad designated critical habitat; these units are in Santa Barbara, Ventura, Los Angeles, San Bernardino, and Riverside counties and total about 11,695 acres (69 FR 23254).

Rangewide Trends and Current Threats. Because arroyo toad habitats (*i.e.*, broad, flat floodplains in southern California) are favored sites for flood control projects, agriculture, urbanization, and recreational facilities, such as campgrounds and off-highway vehicle parks, many arroyo toad populations were reduced in size or extirpated due to extensive habitat loss