

FEDERAL ENERGY REGULATORY COMMISSION  
Washington, D.C. 20426  
June 15, 2018

OFFICE OF ENERGY PROJECTS

Project No. 14227-003 – California  
Lake Elsinore Advanced Pumped  
Storage Project  
The Nevada Hydro Company, Inc.

**Reference: Response to Additional Study Requests**

Dear Addressee:

On October 11, 2017, Commission staff issued a tendering notice on the license application for the Lake Elsinore Advanced Pumped Storage Project No. 14227 (LEAPS), which solicited additional study requests. Additional study requests were filed by nine entities.

We have reviewed the study requests filed for acceptability based on the standards set forth in section 4.32(b)(7) of the Commission's regulations. We require additional studies when we determine that such studies would provide information necessary to form an adequate, factual basis for a complete analysis of the project on its merits. We discuss the applicable standards of section 4.32(b)(7) and the additional study requests below.

*Background*

On June 1, 2017, Nevada Hydro Company (Nevada Hydro) filed a notice of intent (NOI) to file a license application for the proposed 500-megawatt LEAPS Project and a draft license application. In its NOI, Nevada Hydro requested that the Commission's pre-filing licensing requirements<sup>1</sup> be waived to allow it to proceed directly to filing a final license application. In support of its waiver request, Nevada Hydro explained that the current project proposal is essentially the same project as was previously evaluated by Commission staff under P-11858, and that the consultation that occurred under the previous proceeding meets the intent of the Commission's pre-filing consultation requirements for the current proceeding.

On August 23, 2017, Commission staff issued a notice soliciting comments on Nevada Hydro's NOI and waiver request. In response, numerous commenters noted the need for additional information and consultation due to new and planned development in

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<sup>1</sup> 18 C.F.R. § 5.8, 5.9, 5.11, 5.15, 5.16 (2017).

the project area, as well as issues related to other potential project effects.

On September 29, 2017, Commission staff issued a letter approving Nevada Hydro's waiver request, noting that the Commission's post-filing procedures would provide sufficient opportunity for stakeholders to comment on the adequacy of the final license application, identify study needs, participate in the scoping of issues to be evaluated by Commission staff in its environmental review, and identify project effects and mitigation needs.

On October 2, Nevada Hydro filed a final license application for the project that contained final reports on the various studies conducted under P-11858 as well as additional studies conducted in support of its current license application.

### *Study Requests*

Section 4.32 (b)(7) provides that if any resource agency, Indian tribe, or person believes that an additional scientific study should be conducted in order to form an adequate factual basis for a complete analysis of the application on its merits, the resource agency, Indian tribe, or person must file a request for the study with the Commission not later than 60 days after the application is filed. For any such additional study request, the requester must describe the recommended study and the basis for the request in detail, including:

- who should conduct and participate in the study, its methodology and objectives;
- whether the recommended study methods are generally accepted in the scientific community;
- how the study and information sought will be useful in furthering the resource goals that are affected by the proposed facilities;
- approximately how long the study will take to complete; and
- why the study objectives cannot be achieved using available data.

Study Requests were filed by the U.S. Department of Agriculture, Cleveland National Forest (Forest Service), the U.S. Fish and Wildlife Service (FWS), the Santa Ana Regional Water Quality Control Board (Regional Water Board), the State of California Department of Fish and Wildlife (California DFW), the Temecula Band of the Luiseño Mission Indians (Pechanga Tribe or the Tribe), the Decker Canyon Property Owners (Decker Landowners), EHOFF II Lakeside, LLC (Lakeside), the City of Lake Elsinore (City), and the Center of Biological Diversity (with San Bernardino Valley

Audubon Society, Endangered Habitats League, Audubon California, and Sierra Club).

Appendix A provides a summary of staff's findings regarding the need for additional studies. Of the 34 study requests reviewed, 12 are approved with staff-recommended modifications. Six of the requested additional studies that we are not requiring, may need to be conducted post-licensing prior to the start of construction (study requests 11 through 14, 17, and 20). In Appendix B, we discuss each study request, comments received on the request, and any staff-recommended modifications to the studies. Unless noted otherwise in Appendix B, Nevada Hydro must file the required Study Plans for Commission approval by September 13, 2018.

In addition to the study requests that we consider in Appendix B, many participants submitted comment letters on Nevada Hydro's license application that express concerns with both the need for the project and the environmental effects of building and operating the LEAPS project, including how project construction may affect recent development in the project area. Commission staff will consider the issues raised in these comment letters when it scopes issues and, following scoping, prepares its National Environmental Policy Act document for the proposed project.

If you have any questions, please contact Jim Fargo at (202) 502-6095, or via email at [james.fargo@ferc.gov](mailto:james.fargo@ferc.gov).

Sincerely,

Timothy Konnert, Chief  
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**APPENDIX A  
SUMMARY OF DETERMINATIONS ON PROPOSED STUDIES**

<b>Study</b>	<b>Participant Requesting Study</b>	<b>Approved as Modified</b>	<b>Study Not Required</b>
Study 1 – Hydrology Model	<b>California DFW</b>		<b>X</b>
Study 2 – Seismic Hazard	<b>Forest Service</b>	<b>X</b>	
Study 3 – Geotechnical Study	<b>City</b>	<b>X</b>	
Study 4 – Total Nitrogen and Phosphorus, and Cyanotoxin	<b>Regional Water Board</b>	<b>X</b>	
Study 5 – Resuspension of Sediment and Nutrients, Shoreline Erosion, and Turbidity	<b>Regional Water Board</b>		<b>X</b>
Study 6 – Impingement and Entrainment	<b>Regional Water Board</b>		<b>X</b>
Study 7 – Operation Efficiency and Water Quality	<b>Regional Water Board</b>	<b>X</b>	
Study 8 – Aquifer Impact Study Decker Canyon South / North Fork	<b>Decker Landowners</b>	<b>X</b>	
Study 9 – Updated Surveys for Federally Threatened and Endangered Species	<b>FWS, California DFW</b>	<b>X</b>	
Study 10 – Study of Project Effects on Nearby Critical Habitat Designated After 2007	<b>FWS</b>		<b>X</b>
Study 11 – Bald Eagle Study Plan	<b>California DFW</b>		<b>X</b>
Study 12 – Peregrine Falcon Study Plan	<b>California DFW</b>		<b>X</b>

<b>Study</b>	<b>Participant Requesting Study</b>	<b>Approved as Modified</b>	<b>Study Not Required</b>
Study 13 – Golden Eagle Study Plan	<b>California DFW</b>		<b>X</b>
Study 14 – Raptor Study Plan	<b>California DFW</b>		<b>X</b>
Study 15 – Special-Status Riparian Bird Surveys and Nest Monitoring Study Plan	<b>California DFW</b>		<b>X</b>
Study 16 – Special-Status Bat Study Plan	<b>California DFW</b>		<b>X</b>
Study 17 – Special-Status Plant Study Plan	<b>City, California DFW</b>		<b>X</b>
Study 18 – Vegetation Mapping Study Plan	<b>California DFW</b>	<b>X</b>	
Study 19 – Terrestrial Wildlife Movement Study	<b>California DFW</b>		<b>X</b>
Study 20 – Special-Status Fish, Amphibian, and Aquatic Reptile Study	<b>California DFW</b>		<b>X</b>
Study 21 – Coastal Cactus Wren Study Plan	<b>California DFW</b>		<b>X</b>
Study 22 – Special-status Butterfly Study Plan	<b>California DFW</b>		<b>X</b>
Study 23 – Pacific Pocket Mouse Study Plan	<b>California DFW</b>		<b>X</b>
Study 24 – General Biological Surveys	<b>City, California DFW</b>		<b>X</b>
Study 25 – Availability of Mitigation Lands Study	<b>Center for Biodiversity</b>		<b>X</b>
Study 26 – Avian Migration Corridor Study	<b>Center for Biodiversity</b>		<b>X</b>

<b>Study</b>	<b>Participant Requesting Study</b>	<b>Approved as Modified</b>	<b>Study Not Required</b>
Study 27 – Potential Effects of LEAPS on Property Values	<b>City</b>		<b>X</b>
Study 28 – Fire Study	<b>Forest service, Decker Landowners</b>	<b>X</b>	
Study 29 – Assessment of Recreation	<b>City, Regional Water Board</b>		<b>X</b>
Study 30 – Visual Simulations	<b>City</b>	<b>X</b>	
Study 31 – Traffic Analysis	<b>City</b>	<b>X</b>	
Study 32 – Project-related Noise	<b>City</b>		<b>X</b>
Study 33 – Cultural Resources	<b>Tribe</b>	<b>X</b>	
Study 34 – Alternative Northern Transmission Alignments	<b>Commission Staff</b>	<b>X</b>	

## **APPENDIX B**

### **STAFF RECOMMENDATIONS ON PROPOSED AND RECOMMENDED STUDIES**

The following discusses staff's recommendations on studies proposed by Nevada Hydro, Commission staff, and licensing participants.

#### **Study 1--Hydrology Model**

##### Study Request

California DFW requests that Nevada Hydro develop a water balance/operations model for Lake Elsinore that can be used to simulate project operations to understand how the proposed project would affect the water balance of Lake Elsinore. The requested model would involve compiling data over an agreed upon period of record for historical hydrology, with the specific type of model to be determined in consultation with project licensing participants. California DFW notes that water balance/operations models are commonly developed in licensing hydropower projects.

##### Nevada Hydro's Response

Nevada Hydro states that it thinks that alternative studies at a lesser cost or level of effort than what California DFW is requesting would be sufficient to meet the stated water balance/operation model needs. Although Nevada Hydro does not specify the alternative studies that they are referring to, their final license application (FLA) provides a water balance operation model, which was revised in their January 3, 2018, in response to Commission staff's additional information request. Nevada Hydro also notes that, after being designated an impaired waterbody in 1994, many operation studies have been undertaken by others to understand the impairment processes affecting Lake Elsinore and ongoing reports have been published periodically.

##### Discussion and Staff Recommendation

The proposed project would be closed loop, which means that it would not be continuously connected to a naturally flowing water feature. Instead, the project would cycle water back and forth between the new Decker Canyon reservoir (upper reservoir) and the existing Lake Elsinore (lower reservoir). Once Decker Canyon reservoir is initially filled, the only additional water needed to operate the project would be to make up for evaporative losses from the reservoirs and leakage from project conduits, in order to maintain the minimum Lake Elsinore operating level.

The spreadsheet model provided in Exhibit B of the FLA, as updated by Nevada Hydro's response to staff's additional information request, shows the proposed typical weekly power operation of the LEAPS Project. Based on Nevada Hydro's assumed 12-hour daily operation of the project, Lake Elsinore would be drawn down less than a foot during the evening hours when water is pumped back into Decker Reservoir and refilled the following day when the project generates. Over the weekend, the maximum drawdown of the Lake Elsinore could reach about 18 inches when the upper reservoir is filled back to its original reservoir level for the start of a new week.

In addition to the existing model simulating typical weekly operation, volume 11 of the FLA (hydrology volume), includes studies done by the City, Elsinore Valley Municipal Water District, Nevada Hydro and others on ways to use existing groundwater resources and reclaimed water to maintain Lake Elsinore water levels at or above the 1,240 foot mean sea level elevation needed to operate the project.

The approach that Nevada Hydro uses to simulate a typical weekly operation is commonly used for closed loop pumped storage projects and the results are adequate to understand potential environmental effects of project operation and estimate the quantity of water needed to maintain a minimum operating level for Lake Elsinore. Therefore, we do not recommend that Nevada Hydro develop the hydrology model requested by California DFW.

## **Study 2--Seismic Hazard Study**

### Study Request

The Forest Service requests that Nevada Hydro update the seismic hazard information from the 2003 study included in the FLA. The requested update would entail Nevada Hydro conducting a seismic hazard study, following methods in accordance with FERC's general engineering guidelines for the evaluation of hydropower projects that and include the following provisions.

- Identify seismic sources along which future earthquakes are likely to occur.
- Characterize the activity, classification of faulting, maximum magnitudes, and recurrence interval for each identified fault.
- Identify whether a fault may be encountered beneath or adjacent to the dam, dike, penstock, and powerhouse and tailrace facilities, and assess the activity of the feature and, if active, the likelihood of effects from potential fault displacement and ground offset.
- Develop maps and information detailing the locations of faults and seismic sources zones with specific distance parameters to evaluate ground motion from each source.

- Collect historical seismicity data for the region.
- Determine the distance and orientation of each fault with respect to the proposed reservoir, underground project infrastructure, powerhouses, and switchyards.
- Estimate ground motion at the proposed dam, dike, reservoir, and penstock sites based on current probabilistic models.
- Evaluate the project infrastructure with regard to all seismic hazards including ground rupture and/or displacement, strong ground motion (and site specific amplification factors), landslide/rockslide/slope instability, seismically induced settlement and liquefaction.
- Prepare an assessment that evaluates the stability of the proposed design of project facilities under seismic loading events and addresses the potential for dam break or dike failure at full stage and effects to life, property, and resources downstream.
- Use an independent engineering technical review group to determine structural analysis and/or develop site-specific design criteria.

#### Nevada Hydro's Response

Nevada Hydro notes that its prior studies for geotechnical, geological and seismic issues, which were completed in July 2008, were based on surficial reconnaissance, review of available published data, limited geophysical surveys, and preliminary evaluation of faulting and seismicity. This included probabilistic and deterministic seismic hazard analyses using 1997 attenuation relationships and a 2002 California Geological Survey and U.S. Geological Survey fault model for the proposed project site.

Nevada Hydro states that it now proposes to conduct more comprehensive field evaluations with detailed fault studies and seismic hazard analyses using the latest attenuation relationships and fault models to develop the final design, which will meet the Forest Service's study request objectives.

#### Discussion and Staff Recommendation

The proposed LEAPS Project would include the construction of Decker Canyon Dam and related water supply tunnels in an area that includes both the Willard and the Wildomar active fault zones. Any license the Commission may issue for the project would include conditions related to the safe construction and operation of these proposed facilities. Nevada Hydro's proposed updated study would aid Commission staff in developing these conditions. Therefore, we recommend that Nevada Hydro develop the seismic hazard study plan in consultation with the Forest Service and file it with the Commission, along with any Forest Service comments on the plan, within 90 days from the date of this letter.

### **Study 3—Geotechnical Study**

#### Study Requests

The City requests that Nevada Hydro update the prior geotechnical studies, which were completed in July 2008. The City points out the preliminary nature of these previous studies as noted in Nevada Hydro's Technical Memorandum No. 2, volume 12 of the FLA, in which Nevada Hydro acknowledges that they were based on information available at the time and are preliminary opinions on the surface and subsurface conditions, with subsurface exploration, testing, and more detailed studies needed to confirm those conditions.

The City also requests that Nevada Hydro conduct a study on the potential for the water in Lake Elsinore to escape into deep aquifers as a result of project construction.

#### Nevada Hydro's Response

Nevada Hydro states that it will develop a detailed study plan that will include more comprehensive field evaluations with detailed geotechnical investigations and exploration of subsurface soil and rock materials, evaluation of groundwater conditions, and development of more detailed preliminary designs.

Although Nevada Hydro's proposed study plan would include updating the project design, Nevada Hydro did not directly respond to the City's request to study the potential for the water in Lake Elsinore to escape into deep aquifers as a result of project construction.

#### Discussion and Staff Recommendation

##### *Geotechnical Studies*

The proposed LEAPS Project would include building Decker Canyon Dam and constructing the related water supply tunnels in an area that includes both the Willard and the Wildomar active fault zones. As Nevada Hydro's previous geotechnical reports conclude, the geotechnical evaluations referenced in the FLA are preliminary and do not include the subsurface exploration, testing and more detailed studies needed to confirm the initial conclusions. Any license the Commission may issue for the project, would include conditions related to the safe construction and operation of these proposed facilities. The proposed updated studies would aid Commission staff in developing these conditions. Therefore, we recommend that Nevada Hydro develop the geotechnical study plan in consultation with the Forest Service and file the plan with the Commission, along with any Forest Service comments on the plan, within 90 days from the date of this letter.

### *Loss of Reservoir Water from Project Construction*

As proposed, the Santa Rosa powerhouse site would be constructed at the base of the Elsinore Mountains about 2,000 feet away from Lake Elsinore and is not expected to affect the lake.

From the powerhouse, a tailrace tunnel and an inlet/outlet structure would return water to Lake Elsinore while the units are generating and pass water from the lake to the powerhouse when water is being pumped back to the upper reservoir. The tailrace tunnel would be built by initially tunneling through rock and then through the soft lake sediments. Because the depth to bedrock is 500 feet or greater in places, the inlet/outlet structure would be built on lake sediments, with a deep foundation most likely supported on concrete piles.

Therefore, because project construction would not involve excavating the extensive clay and silt sediments at the bottom of the lake to expose bedrock, the City's requested study of the potential loss of lake water does not appear to be necessary and we do not recommend it.

## **Study 4--Total Nitrogen and Phosphorus, and Cyanotoxin**

### Study Request

The Santa Ana Regional Water Quality Control Board (Regional Water Board) requests a study to determine the effect of the proposed project on total nitrogen (TN), total phosphorous (TP), and cyanotoxins in water returned to Lake Elsinore. The Regional Water Board asserts that evaporative losses in the upper reservoir could increase TN and TP, and subsequently result in algal blooms that may release cyanotoxins into Lake Elsinore as the algae's cell walls are lysed by the project's turbines.

### Nevada Hydro's Response

Nevada Hydro proposes to conduct analytical or numerical modeling to help ascertain whether water quality is improved, degraded, or unchanged during transient storage in the upper reservoir and suggests that it be included within the scope of the work being conducted by the Lake Elsinore and Canyon Lake Total Maximum Daily Load Task Force (Task Force). Nevada Hydro proposes that this study be completed by the Task Force post-licensing, prior to any ground-disturbing activities associated with project construction.

### Discussion and Staff Recommendation

As discussed in Commission staff's January 2007 final environmental impact statement (final EIS) for the LEAPS Project under P-11858, operation of the proposed project could result in changes to the oxygen and nutrient concentrations within project waters. However, released nutrients would be exposed to an environment with more oxygen than under existing conditions, minimizing the amounts of nutrients readily available for algae to metabolize. As such, the operation of the proposed project could help to control algae blooms. In addition, the final EIS found that entrainment of floating algae collected and destroyed through project operations would be minimal because the intake structures would not be close enough to the surface (given the lake level fluctuation) or with enough suction to draw large amounts of floating algae mats from the reservoirs' surface. However, in response to our deficiency and additional information request (AIR), Nevada Hydro states that if an extended drought resulted in water levels below 1,240 feet, the LEAPS Project would be capable of operating because the intake/outlet facilities would be able to withdraw and discharge water at levels below 1,235 feet. This broader operating range was not considered in the final EIS where the analysis did not consider water surface elevations below 1,240 feet.

Subsequently, we find that we do not have enough information to define at what levels the proposed LEAPS Project facilities would be capable of operating or the environmental effects of operating the project when the Lake Elsinore elevation cannot be maintained at or above 1,240 feet. Therefore, when implementing the detailed water quality study plan discussed below in Study 7, Nevada Hydro should assess operating capabilities of the project and Nevada Hydro's proposed operation of the project under normal and adverse water conditions and the potential for, and effect of, algae entrainment into project intakes, and the subsequent effect project operation may have on TN, TP, and cyanotoxins in project waters.

### **Study 5—Resuspension of Sediment and Nutrients, Shoreline Erosion, and Turbidity**

#### Study Request

The Regional Water Board requests that Nevada Hydro conduct a study on the impact on recycling existing lake water and the resuspension of sediment and nutrients in Lake Elsinore. Similarly, the City requests that Nevada Hydro conduct a shoreline erosion and turbidity study to evaluate the effects of the water surface fluctuations and turbulence from proposed project operations on turbidity and shoreline erosion in Lake Elsinore.

### Nevada Hydro's Response

Nevada Hydro notes that the issue of sediment resuspension and potential for nutrient release was adequately addressed in previous studies and discussed in Sections 2.2.1.1, Daily Water-Level Fluctuation at Lake Elsinore and 2.2.1.2, Water Quality in Lake Elsinore of the FLA. Nevada Hydro notes that Anderson (2006) conducted an initial technical analysis of potential water quality impacts of the proposed project, and evaluated the potential for sediment scour resulting from the subsequent water turbulence of project operations more rigorously in a subsequent 3-D hydrodynamic modeling analysis (Anderson, 2007).

### Discussion and Staff Recommendation

Project discharges have the potential to disturb the lakebed, which could result in increased turbidity and altered nutrient cycling in Lake Elsinore. However, the 2007 final EIS found that lakebed sediments would become redistributed in response to these flow disturbances and these effects would be short-term.

In addition, the final EIS found that operation of the project would result in daily lake level fluctuations of about 1 foot and weekly lake level fluctuations of about 1.5 feet. This amount of fluctuation, in combination with wind waves and boat wakes, would produce a wave action effect, not unlike the rising and falling action of ocean tides, moving the sediments up and downslope across the relatively flat shoreline. Depending on the location and shoreline configuration, this would result in lateral shoreline migration as short as 8 feet to as much as hundreds of feet in some shallow embayments along the southern shore of the lake. Given the low slope of the shoreline around Lake Elsinore, the limited daily fluctuations in water surface elevation should only result in the shoreline migration of sediments rather than erosion and subsequent increases in turbidity.

Neither the Regional Water Board nor the City identified any new project circumstances that would render the final EIS analysis irrelevant or support the need for additional data. Therefore, sufficient information exists to evaluate the potential effects of project operation on the resuspension of sediments and nutrients and shoreline erosion and turbidity in Lake Elsinore and the Regional Water Board's and the City's requested studies are not needed.

## **Study 6--Impingement and Entrainment**

### Study Request

The Regional Water Board requests that Nevada Hydro conduct a study on the impacts of impingement and entrainment from project operation on the Elsinore Lake's aquatic organisms. The Regional Water Board argues that the turbines would likely kill off aquatic life and states that mitigation for these impacts is expected.

### Nevada Hydro's Response

Nevada Hydro does not believe the Regional Water Board's requested study is needed. It notes that impacts were specifically evaluated for phytoplankton, zooplankton, and larval and adult fish in Anderson (2006). The study found that impacts from proposed project operations would be minimal for phytoplankton due to their rapid rate of reproduction compared with the rate of lake volume exchange, while greater loss was predicted for zooplankton (7-25 percent reduction) and most significant for larval fish (40-100 percent reduction). Nevada Hydro also notes that it developed a linear food-web model to project possible trophic cascades resulting from project operation.

### Discussion and Staff Recommendation

The 2007 final EIS analyzed potential project-related adverse effects on fish, including fish entrainment (i.e., passing aquatic organisms through pump intake valves and turbines) and impingement (i.e., trapping aquatic organisms on intake screens or trashracks). Attraction flows and/or suction caused by the intakes could be too strong for some Lake Elsinore fish to escape, particularly juvenile fish with low swimming speeds, resulting in death or injury as they are pumped through the turbines to the upper reservoir. Fish that are entrained to the upper reservoir may not survive due to direct mortality from passage through the turbines, or delayed mortality from exhaustion, suffocation, or other physical injury. Fish that survive transport through the turbines may not survive in the upper reservoir due to a lack of habitat, a forage base for food, and high reservoir fluctuations.

The Regional Water Board has not identified any new circumstances regarding the project proposal that would render the analysis in the final EIS irrelevant or support the need for additional data. Therefore, the Regional Water Board's requested study is not needed.

## **Study 7--Operation Effects on Water Quality**

### Study Request

The Regional Water Board requests that Nevada Hydro conduct a study to determine at what lake elevation the LEAPS Project can be operated efficiently and at what lake elevations significant impacts to water quality would occur.

### Nevada Hydro's Response

Nevada Hydro agrees that a critical Lake Elsinore surface elevation exists below which the Project would not be operated (though Nevada Hydro does not define this critical operation level). Nevada Hydro says the FLA explicitly assumes an operating elevation of 1,240-1,247 feet above MSL and that detailed hydrodynamic modeling was conducted to assess water velocities and bottom shear at 1,240 and 1,247 feet elevations. Nevada Hydro also notes that Nevada Hydro or others would supply water to the lake to maintain the nominal elevation above 1,240 feet, a target minimum elevation for the lake that is recognized in the initial TMDL as conferring generally favorable water quality conditions for recreational and ecological beneficial uses. As such, Nevada Hydro does not believe additional studies are necessary.

### Discussion and Staff Recommendation

In response to our AIR, Nevada Hydro states that even if water levels were to fall below 1,240 feet due to an extended drought, the LEAPS Project would be capable of operating because the intake/outlet facilities would be able to withdraw and discharge water at a range of water levels, including levels below 1,235 feet.

Based on Nevada Hydro's previous proposed minimum operating level of 1,240 feet, the 2007 final EIS included a detailed discussion of project operation (including lake elevations), identified potential project effects to water quality, and analyzed those effects and associated proposed and recommended mitigations measures. However, Nevada Hydro's proposed new operation stated in its AIR response, which would allow the project to operate when the Lake Elsinore water surface elevation is at or below 1,235 feet, requires additional study. Therefore, we do not have enough information to define at what levels the proposed LEAPS Project facilities would be capable of operating or the environmental effects of operating the project when the Lake Elsinore elevation cannot be maintained at or above 1,240 feet.

Therefore, Nevada Hydro must coordinate with the Regional Water Board, to develop a detailed water quality study plan that defines both the proposed project operating capabilities and Nevada Hydro's proposed operation of the project under

normal and low water conditions. Specifically, the study plan should assess operating capabilities for the full operational range of Lake Elsinore's water surface elevation, and the potential for, and effect of, algae entrainment into project intakes, and the subsequent effect project operation may have on TN, TP, and cyanotoxins in project waters. If Nevada Hydro does not adopt any of the Regional Water Board's recommendations, then it should provide its reasons for doing so using specific, detailed information. If Nevada Hydro and the commenting entities disagree on the details of the study plan, then Commission staff will resolve any disagreements in its study plan approval.

### **Study 8--Aquifer Impact Study Decker Canyon South / North Fork**

#### Study Request

Decker Landowners note that numerous artesian springs are present within the proposed Decker Canyon Reservoir site and that residents of Decker Canyon rely on well water for domestic, irrigation, and fire protection needs. As such, Decker Landowners request that Nevada Hydro conduct both water quality and water quantity studies to evaluate the potential effects of the proposed project on groundwater aquifer(s) within the South and North forks of Decker Canyon.

To monitor project effects to water quality, Decker Landowners request that a baseline water quality study be done at each private and public water supply within the Decker Canyon area and annual sampling continue for the life of the project plus 20 years. To evaluate potential effects to water quantity, Decker Landowners request that Nevada Hydro map the aquifers under the proposed Decker Canyon Reservoir site and 1,000 feet downstream of the proposed dam to identify areas where project facilities may intercept the aquifer(s) and possibly result in seepage.

#### Nevada Hydro's Response

In response to the request, Nevada Hydro notes that invasive groundwater studies have not been performed, but are scheduled before commencement of construction. Nevada Hydro states that research and field investigations to address the issues of concern related to potential impacts to groundwater are planned and that borings along each selected penstock alignment would provide information to assess existing groundwater conditions.

Nevada Hydro anticipates that the subsurface investigations may include the following activities.

- Assess any aquifers, springs, and local groundwater.

- Assess information on domestic water wells near the project.
- Research potential project impacts to nearby domestic water wells.
- Exploratory drilling and sampling to assess current groundwater conditions as well as to determine level of fractures in the bedrock materials.
- Install piezometers with automated data acquisition system for long-term collection of groundwater monitoring data.
- In-situ permeability testing (Packer testing) in selected borings by measuring water loss within the weathered granite and granitic bedrock to determine appropriate grouting to minimize groundwater loss during tunneling.
- Additional in-situ testing, such as Downhole P- and S-wave Logging, 3-Arm Caliper Logging, Acoustic and/or Optical Televiewer, Heat Pulse Flowmeter Testing, and Gamma Ray Neutron Logging, to better understand the characteristics of bedrock materials, and for engineering evaluation.

#### Discussion and Staff Recommendation

As noted in the *Study 2--Seismic Hazard Study* discussion above, the proposed underground project facilities would be designed and constructed to prevent seepage of groundwater. Because Nevada Hydro proposes to prevent project effects on the aquifer(s), detailed aquifer maps are not needed at this time. Further, the required *Study 2--Seismic Hazard Study* is expected to provide a sufficiently detailed understanding of how the project facilities will interact with groundwater to inform our environmental analysis of project effects. The baseline and annual water quality sampling requested by Decker Landowners is a request for a potential protection mitigation and enhancement (PM&E) measure and not needed to assess the potential environmental effects of the proposed project on the Decker Canyon springs or aquifer.

Of concern, however, is the presence of artesian springs within the proposed Decker Canyon Reservoir site that have been identified by the Decker Landowners and the lack of information in the project record regarding these springs. These springs, and likely associated riparian vegetation, could provide habitat to plant communities, which in turn supply food, nesting opportunities, and cover for wildlife. Therefore, information on the location, habitat, and habitat usage associated with these spring sites is needed to evaluate the effects of reservoir construction.

Therefore, we recommend that Nevada Hydro develop a study plan, in consultation with the California DFW, Forest Service, and FWS, to locate, map, and quantify the artesian springs and associated riparian areas within the proposed Decker Canyon Reservoir site. The study, at a minimum, should include provisions to collect water quality data, flora and fauna present, and the extent of each riparian vegetation type.

## **Study 9--Updated Surveys for Federally Threatened and Endangered Species**

### Study Request

FWS recommends that Nevada Hydro conduct updated surveys and habitat assessments for federally listed species and other sensitive biological resources in areas that would be affected by construction and operation of the project and provide an updated description of potential impacts to habitat. In particular, FWS recommends updated surveys for the Quino checkerspot butterfly and for all species in any areas affected by the wildfires that have occurred since the previous surveys were conducted by Nevada Hydro in 2006. FWS notes that it is difficult to correctly analyze the direct and indirect effects of an action on a species if one is using outdated species distribution information.

California DFW recommends that Nevada Hydro complete updated surveys for the federally listed coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, arroyo toad, and California red-legged frog, and the state listed California spotted owl, with the survey areas for Bell's vireo and southwestern willow flycatcher expanded to include Lake Elsinore. California DFW notes that coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher have been documented within the vicinity of the proposed project.

California DFW notes that the federally endangered Riverside and San Diego fairy shrimp may be located in vernal pools within the project area and requests that Nevada Hydro survey vernal pools and other suitable habitat within the project area for these species.

The City recommends that updated surveys for the California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, California spotted owl, arroyo toad, and California red-legged frog based on the methodologies used in the 2003 study report.<sup>2</sup>

Decker Landholders requests a study of any known endangered or threatened animal/plant species, or yet to be discovered species, that may exist within the area of the proposed Decker Canyon Reservoir.

The Center for Biodiversity recommends that Nevada Hydro update the impact analysis for special-status species by conducting new field surveys to determine which species are present in the transmission line pathway.

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<sup>2</sup> FLA, Vol. 5, Technical Appendix to Exhibit E, Appendix E-5.

### Nevada Hydro's Response

As part its proposed Biological Study Program, Nevada Hydro would conduct surveys for federally listed plant and animal species as well as other special-status species, as needed post-licensing, prior to any ground-disturbing activities. The study program would include a desktop site assessment to determine whether field studies are needed for any species of concern. If the desktop site assessment confirms a need for field studies, agency-recommended protocols would be followed unless modified after agency consultation. Nevada Hydro provided more specific study approaches for the following federally listed species: vernal pool fairy shrimp, San Diego fairy shrimp, Riverside fairy shrimp, Quino checkerspot butterfly, arroyo toad, and California red-legged frog.<sup>3</sup>

### Discussion and Staff Recommendation

The findings in the 2007 final EIS regarding listed species were largely based on habitat assessments that were conducted by Nevada Hydro in 2003. Due to fire, drought, and changes to the proposed project footprint that have occurred since the habitat assessments were conducted, they may no longer be accurate. For example, Nevada Hydro notes that fires from 2010 and 2013 burned approximately 3 miles of proposed transmission line rights-of-way approximately 4 miles west of known populations of listed species, which may have created new habitat.

Therefore, revised habitat assessments are needed to accurately predict impacts of the project on federally listed species based on potential changes that might have occurred since completion of the earlier habitat assessments. Therefore, in order to accurately assess the potential impacts of the proposed project on federally listed species, Nevada Hydro must conduct updated habitat assessments for federally listed species and the California spotted owl, a state listed species, after consultation with appropriate agencies.

Many of the surveys for listed species were conducted between 2001 and 2008.<sup>4</sup> As noted in the final EIS, surveys did not cover all areas that would be affected by project

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<sup>3</sup> We note that section 2.2.2.10 of Nevada Hydro's response to study requests states that Nevada Hydro does not agree to survey vernal pools for vernal pool, San Diego, and Riverside fairy shrimp contrary to the *Attachment 2: Proposed Biological Resources Study Program*.

<sup>4</sup> Surveys were conducted for listed plant and animal species that could occur or were documented to occur in the study area with the exception of Stephen's kangaroo rat. It was assumed that the project would affect habitat for the kangaroo rat and mitigation

construction, primarily because transmission alignments had been modified since the surveys were conducted, and the locations of many project features (e.g., access roads, helicopter fly yards, overhead/underground transition stations, pulling and tensioning stations) had not yet been determined. Some areas were excluded from surveys due to private ownership, difficult access, or impenetrable vegetation. Further, distribution can change over time based on habitat changes (discussed above), spread of listed plant species into suitable habitat as a result of seed distribution by wind or animals, or populations of animals spreading into unoccupied suitable habitat.

Determining species presence via a project-specific study, however, is not a necessary component in identifying potential project effects where existing information already shows the species is likely present at the project or presence of these species can be assumed to occur based on the availability of suitable habitat. In addition, distribution of wildlife species can change on a yearly basis so surveys often would need to be repeated prior to construction whether or not pre-licensing surveys were conducted. Further, the final location of project facilities, such as transmission line towers, is subject to change based on final design.

Knowing specific locations of listed species prior to construction could be useful in developing site-specific mitigation measures. As noted in the final EIS, preconstruction surveys could be conducted to prevent or minimize adverse effects during construction. For example, final location of certain facilities can be adjusted to avoid identified plant species or nests, construction schedules can be adjusted to avoid disturbance, construction buffers can be implemented to avoid direct or indirect effects, and barriers/fencing can be installed to protect habitat. Based on the above, we do not believe species surveys are needed prior to licensing.

The one exception is the Quino checkerspot butterfly, whose range overlaps the proposed project area.<sup>5</sup> Of all of the listed species, changes in habitat as a result of recent fires would most influence the distribution of the Quino checkerspot butterfly. The butterfly's primary host plant species, *Plantago erecta* (dwarf plantain), is a species that germinates after fire or other disturbances and could potentially have become more common after the fires. Mattoni et al. (1997)<sup>6</sup> found that adult butterflies, *Plantago erecta*, and ample nectar sources were found throughout recently burned areas within their study area. It is unclear whether potential effects could be avoided through changes

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would be provided on an acreage basis consistent with the existing habitat conservation plan for this species.

<sup>5</sup> See [http://www.calflora.org/cgi-bin/species\\_query.cgi?where-calrecnum=6615](http://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=6615).

<sup>6</sup> Mattoni, R., G.F. Pratt, T.R. Longcore, J.F. Emmel, and J.N. George. 1997. The endangered Quino checkerspot butterfly, *Euphydryas editha quino* (Lepidoptera: Nymphalidae). *Journal of Research on Lepidoptera*. 34: 99–118.

in project design or implementation of protective measures. Therefore, to determine whether, and to what degree, this species' habitat may have changed since the final EIS and inform our analysis of project effects and the need for appropriate mitigation measures, Nevada Hydro must conduct surveys for *Plantago erecta* and use by the Quino checkerspot butterfly within the proposed project area that was affected by recent fires, after consultation with appropriate agencies.

## **Study 10--Study of Project Effects on Nearby Critical Habitat Designated After 2007**

### Study Request

FWS requests that Nevada Hydro update the analysis of project effects on designated critical habitat given that critical habitat has changed for numerous species since the 2007 final EIS.

### Nevada Hydro's Response

Nevada Hydro notes that it updated the discussion of designated critical habitats in the FLA to reflect changes that have occurred since issuance of the final EIS.

### Discussion and Staff Recommendation

In a letter issued on January 3, 2018, we requested, based on our review of the updated information provided by Nevada Hydro in its FLA, that Nevada Hydro provide additional information on critical habitat. We specifically requested that Nevada Hydro provide revised maps that clearly show the location of project components (roads, transmission lines, other facilities, disposal and laydown areas, etc.) in relation to proposed or designated critical habitats, a table showing the amount of different vegetation types within the critical habitats that would be disturbed and whether effects would be temporary or permanent, and an analysis of how construction, operation, and maintenance of the project could affect the primary constituent elements that provided the basis for the designations. Nevada Hydro filed the requested information on April 3, 2018. Based on the information provided in the FLA and the additional information response, we believe that we have sufficient information to adequately assess the effects of the project on designated critical habitat and satisfies FWS's request.

## **Study 11--Bald Eagle Study Plan**

### Study Request

California DFW notes that bald eagles have been observed in the project vicinity, but their nesting status is either unknown or has not been reported and no specific information exists regarding the temporal and spatial distribution of wintering bald eagles and the location of night roosts within the project vicinity. California DFW also notes that Nevada Hydro has not conducted bald eagle surveys.

California DFW recommends that Nevada Hydro conduct nesting, wintering, and night roost surveys for bald eagles within the project boundary, plus a 0.5-mile buffer. The goals of the study would be to obtain information regarding bald eagle nesting and wintering use in the project vicinity to perform an analysis of how bald eagles may be affected by project construction, operation, and maintenance.

#### Nevada Hydro's Response

As part of Nevada Hydro's proposed Biological Study Program included in its December 21, 2017 response to study requests, Nevada Hydro would conduct two bald eagle breeding season surveys (as opposed to three required by California DFW survey protocols) post-licensing, prior to any ground-disturbing activities. Nevada Hydro also indicated that a bald eagle and peregrine falcon protection plan would be necessary to protect any nests that might be identified from disturbance by maintaining sufficient buffer zones.

#### Discussion and Staff Recommendation

The distribution of bald eagles in southern California has increased in the last 15 years as a result of its recovery and recolonization of suitable unoccupied habitat. Bald eagles forage at Lake Elsinore and have attempted to nest there in the past. If active eagle nests are located prior to project construction, restrictions to construction scheduling or buffers may be needed to protect eagles from disturbance. Conducting surveys prior to project construction, as proposed by Nevada Hydro, would allow decisions on scheduling and buffers to be made to protect eagles and would account for changes in distribution or nest occupation that may occur between now and project construction. However, given that there is sufficient information in the record to analyze potential impacts to bald eagles, pre-licensing bald eagle surveys are not necessary to inform license conditions. Therefore, staff does not recommend that Nevada Hydro conduct bald eagle surveys at this time.

### **Study 12--Peregrine Falcon Study Plan**

#### Study Request

California DFW notes that peregrine falcons have been observed in the project area, but Nevada Hydro has not conducted surveys, nor have they provided in the FLA, the necessary information about nesting peregrine falcons in the project vicinity to determine potential project effects on nesting peregrine falcons.

California DFW recommends that Nevada Hydro conduct nesting surveys for peregrine falcons in suitable habitat within the project boundary according to *Protocol for Observing Known and Potential Peregrine Falcon Eyries in the Pacific Northwest* (1992), plus a 0.5-mile buffer. The goals of the study would be to obtain information regarding the nesting behavior (i.e., courtship, egg laying, incubation, hatching, and fledging), specific nesting chronology (i.e., clutch complete, hatch, and fledge dates), and sensitivity of peregrine falcons nesting in the project vicinity to perform an analysis of how nesting peregrine falcons may be affected by project construction, operation, and maintenance.

#### Nevada Hydro's Response

As part of Nevada Hydro's proposed Biological Study Program included in its December 21, 2017 response to study requests, Nevada Hydro would conduct one nesting survey for falcons (as opposed to 2 or more required by survey protocols) post-licensing, prior to any ground-disturbing activities. As noted above, Nevada Hydro also believes that a bald eagle and peregrine falcon protection plan would be necessary.

#### Discussion and Staff Recommendation

Peregrine falcons typically nest on cliffs. About 15 pairs of falcons are known to nest in San Diego County.<sup>7</sup> Although the project area provides limited habitat for the falcon, it could potentially occur within the project area.

If active peregrine falcon nests are located prior to project construction, restrictions to construction scheduling or buffers may be needed to protect falcons from disturbance, as determined after consultation with wildlife agencies. Conducting surveys prior to project construction, as proposed by Nevada Hydro, would allow decisions on scheduling and buffers to be made to protect falcons and would account for changes in distribution that may occur between now and project construction. However, given that there is sufficient information in the record to analyze potential impacts to peregrine

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<sup>7</sup> Birds of Prey and the Cleveland National Forest.  
<https://www.fs.usda.gov/detail/cleveland/landmanagement/resourcemanagement/?cid=stelprdb5288506>

falcons, pre-licensing peregrine falcon surveys are not necessary to inform license conditions. Therefore, staff does not recommend that Nevada Hydro conduct peregrine falcon surveys at this time.

## **Study 13--Golden Eagle Study Plan**

### Study Request

California DFW notes that golden eagles, including nesting eagles, have been observed in the project vicinity and that Nevada Hydro has not conducted surveys to determine potential project effects on golden eagles.

California DFW recommends that Nevada Hydro conduct nesting surveys for golden eagles in suitable habitat within the project boundary, plus a 0.5-mile buffer, according to *Interim Golden Eagle Inventory and Monitoring Protocols* (2010) and *Protocols for Golden Eagle Occupancy, Reproduction, and Prey Population Assessment* (2010). The goal of this study would be to obtain information regarding the nesting behavior (i.e., courtship, egg laying, incubation, hatching, and fledging), specific nesting chronology (i.e., clutch complete, hatch, and fledge dates), and sensitivity of golden eagles nesting in the project vicinity to perform an analysis of how nesting golden eagles may be affected by project construction, operation, and maintenance.

### Nevada Hydro's Response

As part of Nevada Hydro's proposed Biological Study Program included in its December 21, 2017 response to study requests, Nevada Hydro would conduct one nesting survey for golden eagles (as opposed to two or more required by survey protocols) post-licensing, prior to any ground-disturbing activities. Because of the heavily wooded terrain, lack of road access, and the required survey buffers, Nevada Hydro proposes to locate and monitor nests from the air using a drone or helicopter.

### Discussion and Staff Recommendation

Golden eagles typically build their nests on cliffs, while foraging for food in grasslands, and are known to nest near the proposed transmission line corridor.

If active golden eagle nests are located prior to project construction, restrictions to construction scheduling or buffers may be needed to protect eagles from disturbance, as determined after consultation with wildlife agencies. Conducting surveys prior to project construction, as proposed by Nevada Hydro, would allow decisions on scheduling and buffers to be made to protect eagles and would account for changes in distribution that

may occur between now and project construction. However, given that there is sufficient information in the record to analyze potential impacts to golden eagles, pre-licensing golden eagle surveys are not necessary to inform license conditions. Therefore, staff does not recommend that Nevada Hydro conduct golden eagle surveys at this time.

## **Study 14--Raptor Study Plan**

### Study Request

California DFW notes that several species of raptors are known to occur or have the potential to occur in the project vicinity. California DFW also notes that Nevada Hydro has not conducted raptor surveys, nor have they provided in their FLA, the necessary information about raptors to determine potential project effects on these species.

California DFW recommends that Nevada Hydro conduct surveys for raptors<sup>8</sup> within all project footprints, alignments, and alternatives for construction staging areas and access routes, road improvements, generation facilities, substations, the powerhouse, transmission line corridors, and all other areas in which ground-disturbing activities would occur, plus a 500-foot buffer. The goal of this study would be to obtain information regarding the distribution of nesting and wintering raptors in the project vicinity to perform an analysis of how these species may be affected by project construction and long-term operation and maintenance activities.

### Nevada Hydro's Response

As part of Nevada Hydro's proposed Biological Study Program, Nevada Hydro would conduct one nesting survey for owls and one for falcons, buteos (soaring hawks with broad wings), and other raptors post-licensing, prior to any ground-disturbing activities.

Because of the heavily wooded terrain, lack of road access, and the survey buffers, Nevada Hydro proposes to locate and monitor nests from the air using a drone or helicopter.

### Discussion and Staff Recommendation

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<sup>8</sup> The bald eagle, golden eagle, and peregrine falcon are considered in separate studies discussed above.

The project area provides suitable habitat for numerous raptor species. If active raptor nests are located prior to project construction, restrictions to construction scheduling or buffers may be needed to protect raptors from disturbance, as determined after consultation with wildlife agencies. Conducting surveys prior to project construction, as proposed by Nevada Hydro, would allow decisions on scheduling and buffers to be made to protect raptors and would account for changes in distribution that may occur between now and project construction. However, given that there is sufficient information in the record to analyze potential impacts to raptor species, pre-licensing raptor surveys are not necessary to inform license conditions. Therefore, staff does not recommend that Nevada Hydro conduct raptor surveys at this time.

## **Study 15--Special-Status Riparian Bird Surveys and Nest Monitoring Study Plan**

### Study Request

California DFW notes that the yellow warbler and yellow-breasted chat, both state species of special concern, and several other bird species that nest in riparian habitat are known to occur in the project vicinity and Nevada Hydro has not conducted riparian bird surveys or nest monitoring, nor has it provided in the FLA, the necessary information about nesting riparian birds to determine potential project effects on these species. California DFW recommends that Nevada Hydro conduct surveys and nest monitoring for riparian birds, with a focus on the yellow warbler and yellow-breasted chat, in all riparian habitat located within 500 feet of proposed project footprints, alignments, and alternatives for construction staging areas and access routes, road improvements, generation facilities, substations, the powerhouse, transmission line corridors, and all other areas in which ground disturbing activities would occur. California DFW also requests that the survey and nest monitoring be expanded to include the shoreline of Lake Elsinore, as project operations are predicted to result in daily lake water-level fluctuations which may affect the suitability of nesting and foraging habitat. The goal of this study would be to obtain information regarding nesting special-status riparian bird species within the project vicinity to perform an analysis of how these species may be affected by project construction and long-term operations and maintenance activities.

California DFW recommends that Nevada Hydro survey for nesting riparian birds using point counts and conduct nest searches for any special-status riparian bird species detected during point count surveys.

### Nevada Hydro's Response

Nevada Hydro proposes to conduct nesting surveys for riparian bird species before licensing, prior to any ground-disturbing activities. Nevada Hydro, however, proposes to

modify the survey methods as recommended by California DFW to include point count surveys in suitable habitats and surrounding 500-foot survey buffer to determine their presence during the nesting season, but to exclude nest searches. Nevada Hydro believes that nest searches have the potential to disturb nesting pairs. Accordingly, nest searches would only be conducted if construction or vegetation clearing occurs within suitable habitat during the nesting season.

### Discussion and Staff Recommendation

The yellow warbler has been recorded within the vicinity of the project area and marginally suitable habitat is present in the project area. The yellow-breasted chat has been observed within Temescal Wash and suitable habitat is present in the project area.

The project would have limited effects on riparian habitat and potential impacts to these species could be avoided by proper location of project facilities or suitable buffer zone and limited construction period. Conducting surveys prior to project construction, as proposed by Nevada Hydro, would allow decisions on scheduling and buffers to be made to protect eagles and would account for changes in distribution that may occur between now and project construction. However, given that there is sufficient information in the record to analyze potential impacts to riparian bird species, pre-licensing surveys for these species are not necessary to inform license conditions. Therefore, we do not recommend that yellow warbler or yellow-breasted chat surveys be conducted at this time.

## **Study 16--Special-Status Bat Study Plan**

### Study Request

California DFW notes that several California state species of special concern have the potential to occur within the project vicinity, including: Townsend's big-eared bat, western red bat, spotted bat, pallid bat, pocketed free-tailed bat, big free-tailed bat, western yellow bat, and western mastiff bat. California DFW recommends that Nevada Hydro conduct surveys for special-status bats within all proposed footprints, alignments, and alternatives for construction staging areas and access routes, road improvements, generation facilities, substations, the powerhouse, transmission line corridors, and all other areas in which ground disturbing activities would occur. The goal of this study would be to obtain information regarding special-status bats in the project vicinity to perform an analysis of how special-status bats may be affected by project construction and long-term operation and maintenance activities.

Information from an initial reconnaissance, long-term acoustic monitoring, and

emergence surveys would be used to develop appropriate avoidance and minimization measures for project construction and long-term operations and maintenance activities that have the potential to affect special-status bats.

### Nevada Hydro's Response

Nevada Hydro does not agree with the need for bat surveys because it states that the 2017 desktop review included in its FLA did not identify bat species of concern likely to be affected by the project.

### Discussion and Staff Recommendation

California DFW did not specify how the proposed project would affect habitat used by special status bat species. Although Nevada Hydro's 2017 initial desk-top analysis concluded that no bat species of concern would likely be affected by the project, it did not provide any information to support its findings. In addition, the results of the desktop analysis conflict with Exhibit E.3 of the FLA, where Nevada Power notes that two bat species could potentially occur in the general area, one with low potential (pallid bat) and one with moderate potential (western red bat), and potentially be affected by project construction. Therefore, in order to determine if there is a need for bat surveys, Nevada Hydro must provide more detail within 90 days from the date of this letter supporting its contention that special-status bat species would not likely be affected by project construction activities.

## **Study 17--Special-Status Plant Study Plan**

### Study Requests

California DFW notes that the following state-listed species have been documented within or immediately adjacent to the project area: slender-horned spineflower, thread-leaved brodiaea, and Munz's onion, along with many other rare plant species. California DFW request that Nevada Hydro conduct surveys for special-status plant species using California DFW's current survey protocol,<sup>9</sup> within all proposed footprints, alignments, and alternatives for construction staging areas and access routes, road improvements, generation facilities, substations, the powerhouse, transmission line corridors, and all other areas in which ground disturbing activities would occur. California DFW notes that sensitive plant species were surveyed more than 10 years ago and no formal survey protocol was followed. California DFW states that the survey

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<sup>9</sup> Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (2009)

results would be used to develop buffers and other avoidance and minimization measure for project-related construction and long-term operation and maintenance activities that have the potential to affect special-status plant species.

The City also recommends that updated surveys for special-status plant species be conducted.

### Nevada Hydro's Response

Nevada Hydro generally agrees to the recommended study plan, and proposes to survey for 14 rare and special status species post-licensing, prior to any ground-disturbing activities, excluding the federally-listed Munz's onion, which it believes has been adequately addressed in the 2007 final EIS. Final study protocols for other species would be developed in consultation with the agencies.

### Discussion and Staff Recommendation

Numerous rare plant surveys of the project area were conducted between 2001 and 2006, during which three rare plant species were observed but no state-listed species were found. The results of these surveys are still relevant since it is unlikely that additional individual rare plants or new rare plant species would have populated the project area since these surveys were conducted.

As discussed in the 2007 final EIS, the footprint of each transmission line tower could be adjusted to avoid rare plant species if detected by pre-construction surveys or appropriate mitigation measures, such as construction buffers and control of invasive plant species, could be implemented. Therefore, staff does not recommend that Nevada Hydro conduct special-status plant species surveys at this time.

## **Study 18--Vegetation Mapping Study Plan**

### Study Request

California DFW notes that the vegetation mapping and classification provided by the Nevada Hydro in the FLA is dated and does not provide the accuracy of the State Vegetation Classification and Mapping Program (VegCAMP) system.

California DFW recommends that Nevada Hydro conduct a vegetation mapping study within the proposed project area. The goal of this study plan would be to obtain the most current and accurate information to map and classify vegetation types within the project area to determine if project construction, operation, and maintenance activities

may have an adverse effect on these vegetation types and the corresponding fish, wildlife, and plant habitats and species that use these habitats.

### Nevada Hydro's Response

As part of Nevada Hydro's proposed Biological Study Program, Nevada Hydro would conduct vegetation mapping post-licensing, prior to ground-disturbing activities; however, Nevada Hydro believes that the level of effort and cost associated with the recommended VegCAMP method would be overly burdensome relative to the need for the information. Therefore, Nevada Hydro proposes to use existing digital vegetation/habitat information, including California Department of Forestry and Fire Protection fire mapping data, to update its mapping of vegetation communities within the footprint of the proposed project components. This information would be used to identify the areas of suitable habitat for the species-specific surveys post-licensing, prior to any ground-disturbing activities.

### Discussion and Staff Recommendation

Nevada Hydro provided habitat classification and natural community mapping in its 2003 Biological Resources Report. Changes in vegetation community types and boundaries likely have occurred in the last 15 years. A revised map would address changes in vegetation makeup that have occurred in the intervening years due to widespread and multiple burns in the mapping area, urban expansion, and broadly occurring vegetation succession and would be valuable in determining habitat suitability for wildlife species. This information would inform staff's analysis of project-related impacts to habitat for special-status species. Although the VegCamp mapping and classification recommended by California DFW would provide high resolution habitat details, other less expensive methods would be sufficient in providing information needed to assess project effects. Use of other habitat layers, as proposed by Nevada Hydro, have been routinely used in hydropower licensing processes and would not limit Nevada Hydro's capability to identify suitable habitat for special-status species. Therefore, Nevada Hydro must revise its vegetation map using existing digital vegetation/habitat information within 90 days from the date of this letter.

## **Study 19--Terrestrial Wildlife Movement Study**

### Study Request

California DFW notes that Nevada Hydro has not conducted a wildlife habitat use and movement study, nor have they provided sufficient information in the FLA to determine potential project effects on large mammal species or important habitat features

used by large mammals within the project area. California DFW recommends that Nevada Hydro conduct a terrestrial wildlife movement study to provide information on large mammal wildlife movement/corridors, and important habitat features, within the vicinity of the proposed project. The study would require deployment of remote cameras, field visits to identify wildlife movement areas and large mammal tracks and scat, and modelling of wildlife movement corridors.

#### Nevada Hydro's Response

Nevada Hydro believes that the requested study is not necessary to evaluate the probable significant effects of the project. Nevada Hydro believes that existing information is adequate to evaluate effects, as wildlife movements are unlikely to be significantly affected by the project. However, Nevada Hydro does propose to determine the need to conduct mountain lion surveys based on a desktop site assessment and consultation post-licensing, prior to ground-disturbing activities.

#### Discussion and Staff Recommendation

As noted in the 2007 final EIS, construction of the proposed project could potentially increase fragmentation of habitat and affect movement through the project area by large mammal species, such as the mountain lion and mule deer. However, the small size of the habitat impacts at tower sites (e.g., generally under 0.25 acre) and relatively large distance between towers sites (e.g. generally around 0.25 mile) would limit potential effects of the transmission line right-of-way on mammal species.

Sufficient information is available, including the Regional connectivity/wildlife movement corridors section of the FLA and 2007 final EIS to understand the general movements of mountain lions and other mammal species through the project area and determine the need for measures to minimize potential disturbance or mitigate habitat impacts. Additional information is not needed to address the effects of the project on wildlife movement. Therefore, staff does not recommend that Nevada Hydro conduct a wildlife movement study. However, Nevada Hydro should update existing information on the local population, territories, movement corridors, and other relevant information from recent published and acceptable unpublished data, including available data on radio-collared mountain lions within 90 days from the date of this letter.

### **Study 20--Special-Status Fish, Amphibian, and Aquatic Reptile Study**

#### Study Request

California DFW notes that arroyo chub, western spadefoot, coast-range newt,

western pond turtle, and two-striped garter snake, all state species of special concern, have been documented within the project area, but Nevada Hydro has not conducted surveys or identified potential impacts to these species. California DFW requests that Nevada Hydro document the occurrence of special-status fish, amphibian, and reptile species using visual encounter survey methodology.

#### Nevada Hydro's Response

In its response to study requests, Nevada Hydro agrees to develop a study plan in consultation with California DFW and FWS that would be implemented post-licensing, prior to any ground-disturbing activities. Nevada Hydro states that the plan would include field wetland delineations to identify all aquatic habitats and inform the location of certain project components to avoid identified habitats for special-status fish and amphibians. In addition, as part of Nevada Hydro's proposed Biological Study Program, Nevada Hydro proposes to conduct focused field surveys for the arroyo toad and evaluate the need for surveys for other aquatic species.

#### Discussion and Staff Recommendation

The coast range newt and two-striped garter snake were detected during previous surveys of the project area conducted by Nevada Hydro, while suitable habitat for western spadefoot and western pond turtle is found in the project area. The arroyo chub is also known to occur in the project area and was documented in lower San Juan Creek. A project-specific study to determine species presence is not needed to identify potential project effects since existing information already shows that the species are either influenced by the project or assumed to be present based on the availability of suitable habitat.

Knowing specific locations of listed species prior to construction could be useful in developing site-specific mitigation measures. As noted in the 2007 final EIS, preconstruction surveys could be conducted post-licensing, prior to any ground-disturbing activities to prevent or minimize adverse effects during construction. For example, final location of certain facilities can be adjusted to avoid special status species and their habitats and construction schedules can be adjusted to avoid disturbance.

### **Study 21--Coastal Cactus Wren Study Plan**

#### Study Request

California DFW notes that the coastal cactus wren, a state species of special concern, has the potential to occur within the vicinity of the project but Nevada Hydro

has not conducted targeted surveys nor have they provided in the FLA an assessment of the potential presence of this species within the project vicinity, or identified potential impacts to this species.

California DFW recommends that Nevada Hydro conduct coastal cactus wren surveys within suitable habitat in the proposed project area. The goals of the study would be to obtain information regarding the presence of coastal cactus wrens within the project area, perform an analysis of how cactus wrens may be affected by project construction and long-term operations and maintenance activities, and develop appropriate buffers and avoidance and minimization measures for project construction, operations, and maintenance activities.

#### Nevada Hydro's Response

Nevada Hydro does not agree that the requested study is needed, given the low potential for coastal cactus wren to occur within the project or 500-foot buffer based on its geographic range.

#### Discussion and Staff Recommendation

The cactus wren is found in San Diego and Riverside Counties. It has a narrow distribution and is found in relatively few locations in suitable habitat. The coastal cactus wren nests in coastal sage scrub with patches of tall *Opuntia* cacti. Nests are almost exclusively found in *Opuntia* cacti of at least 1 meter in height.<sup>10</sup> Based on habitat surveys conducted for the project, no suitable habitat is present in the project area. Further, the species has not been recorded within the vicinity of the project area<sup>11</sup> and California DFW has not provided evidence that the wren is likely to be found in habitats that could be affected by the project. Given the low likelihood of the species occurring in the project area and lack of suitable habitat, staff does not recommend that Nevada Hydro conduct the requested study.

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<sup>10</sup> Solek, C. and L. Szijj. 2004. Cactus Wren (*Campylorhynchus brunneicapillus*). In *The Coastal Scrub and Chaparral Bird Conservation Plan: a strategy for protecting and managing coastal scrub and chaparral habitats and associated birds in California*. California Partners in Flight. <http://www.prbo.org/calpif/htmldocs/scrub.htm>

<sup>11</sup> Shuford, W. D., and Gardali, T., editors. 2008. *California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California*. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

## **Study 22--Special-status Butterfly Study Plan**

### Study Request

California DFW notes that the special-status butterfly species may occur within the vicinity of the project but Nevada Hydro has not conducted targeted surveys for these species, nor have they provided in the FLA a comprehensive assessment of their potential presence within the project vicinity, or identified potential impacts.

California DFW recommends that Nevada Hydro conduct surveys for: Quino checkerspot butterfly, Hermes copper butterfly, a federal candidate for listing; Laguna Mountains skipper, federally listed as endangered; and Harbison's dun skipper, a rare species, within suitable habitat in the project area. The goals of this study would be to obtain information regarding the presence of these species within the project area, perform an analysis of how they may be affected by project construction and long-term operations and maintenance activities, and develop appropriate buffers and avoidance and minimization measures for project construction, operation, and maintenance activities.

### Nevada Hydro's Response

As part of Nevada Hydro's Biological Study Program, Nevada Hydro would conduct a habitat assessment and surveys for the Quino checkerspot butterfly post-licensing, prior to ground-disturbing activities.

### Discussion and Staff Recommendation

The need to conduct surveys for Quino checkerspot butterfly was already addressed above under *Study 8--Updated Surveys for Federally Threatened and Endangered Species*.

The Laguna Mountains skipper is known only to occur in San Diego County, California. It occupies montane meadow habitats within yellow pine forests of the Laguna Mountains (single population) and Mount Palomar (six populations). The Harbison's dun skipper is a rare subspecies with a restricted distribution, known only to occur in San Diego County and southern Orange County. This species and its host plant, San Diego sedge, has not been found in the project area.<sup>12</sup> The Hermes copper butterfly's

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<sup>12</sup> San Diego Management & Monitoring Program,  
[https://sdmmp.com/map\\_species.php?taxaid=707282](https://sdmmp.com/map_species.php?taxaid=707282)

current range does not include the project area.<sup>13</sup> Therefore, since these butterfly species are not likely to be found in the project area, we do not recommend that Nevada Hydro conduct the requested surveys.

## **Study 23--Pacific Pocket Mouse Study Plan**

### Study Request

California DFW notes that the Pacific pocket mouse, a federally listed species and state species of special concern, has the potential to occur within the vicinity of the project but Nevada Hydro has not conducted surveys, nor have they provided in the FLA an assessment of the potential presence of this species within the project vicinity, or identified potential impacts to this species.

California DFW recommends that Nevada Hydro conduct surveys for Pacific pocket mouse in the project area. The goals of this study would be to obtain information regarding the potential presence of Pacific pocket mouse within the project area, perform an analysis of how Pacific pocket mice may be affected by project construction and long-term operations and maintenance activities, and develop appropriate buffers and avoidance and minimization measures for project construction, operation, and maintenance activities.

### Nevada Hydro's Response

Nevada Hydro does not believe this study is necessary because there is a low likelihood of this species occurring in the project area. However, Nevada Hydro proposes, as part of its Biological Study Program, to conduct an assessment to determine if the species or habitat occurs within the project area, and whether the project might pose potential adverse impacts to the population. Surveys would be conducted in suitable habitat in the project area based on the initial field site assessment post-licensing, prior to any ground-disturbing activities.

### Discussion and Staff Recommendation

The Pacific pocket mouse has a patchy distribution and is associated with fine grain, sandy substrates in coastal strand, coastal dunes, river alluvium and coastal sage

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<sup>13</sup> Species Profile for Hermes copper (*Lycaena hermes*), Environmental Conservation Online System, FWS, <https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=I05C>.

scrub habitats within approximately 2.5 miles of the ocean in southern California.<sup>14</sup> Known populations in San Diego County are only found at San Mateo Creek (northern San Diego County) and near the Santa Margarita River in Camp Pendleton (southern San Diego County).

Nevada Hydro has not identified suitable habitat for the Pacific pocket mouse in the project area. Further, the species has not been recorded within the vicinity of the project area and the project area is not located within its known geographic distribution. California DFW has also not provided evidence that the pocket mouse is likely to be found in habitats that could be affected by the project. Therefore, given the low likelihood of the species occurring in the project area and lack of suitable habitat, staff does not recommend that Nevada Hydro conduct the requested study.

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<sup>14</sup> Pacific Pocket Mouse (*Perognathus longimembris pacificus*) 5-Year Review: Summary and Evaluation, U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, Carlsbad, California, April 1, 2010.

## **Study 24--General Biological Surveys**

### Study Request

California DFW and the City believe that the general biological survey data in the 2003 Biological Resources Report is outdated and needs to be updated. California DFW specifically requests that the updated surveys cover the entirety of the proposed project footprint, including the perimeter of Lake Elsinore.

### Nevada Hydro's Response

Nevada Hydro believes that the comprehensive desktop site assessment that it proposes to conduct for biological resources potentially affected by the project, in combination with the focused special-status species studies, would be adequate. Nevada Hydro notes that the desktop assessment would consider a 0.5-mile transmission corridor and the immediate vicinity of the hydro facilities. For other populations that are not likely to be significantly affected by the project, Nevada Hydro expects the existing information to be adequate.

### Discussion and Staff Recommendation

Staff believes that the study results used in the 2007 final EIS, along with the updated information provided in the FLA, and additional information provided in January 2018, provide sufficient information to evaluate project impacts to plant and wildlife species, including special-status species.

## **Study 25--Availability of Mitigation Lands Study**

### Study Request

The Center for Biodiversity requests that Nevada Hydro conduct additional studies prior to project construction to identify available mitigation land to offset project-related habitat losses, but did not provide any specific methodology. It believes that proper off-site mitigation should be clearly outlined before the application can move forward.

### Nevada Hydro's Response

None.

### Discussion and Staff Recommendation

In our January 3, 2018, request for additional information, we requested that Nevada Hydro provide an assessment of the availability of replacement habitats to potentially offset habitat impacts associated with the proposed project. In its April 3, 2018, response, Nevada Hydro noted that there are several previously conserved areas along the project site and disturbed sites within or near the project area that could potentially be used for mitigation of any project-specific effects. Nevada Hydro also notes that, if necessary, new habitat could be created by rehabilitating previously-disturbed areas within the project boundary or adjacent to the project boundary. Although Nevada Hydro indicated that mitigation lands would be available, it did not provide any details to allow us to assess the suitability of those areas to mitigate project effects. Therefore, we recommend that Nevada Hydro provide, within 90 days from the date of this letter, more detailed information of the availability of mitigation lands to include location in relationship to the project, existing habitat conditions and land uses, and size of parcels.

### **Study 26--Avian Migration Corridor Study**

#### Study Request

The Center for Biodiversity requests that Nevada Hydro conduct a study of avian migration corridors to assess the impact of the transmission line on migrating bird populations but did not provide a specific methodology. It notes that the FLA acknowledges that avian migration corridors have never been studied systematically.

#### Nevada Hydro's Response

None.

#### Discussion and Staff Recommendation

Although detailed information on bird movement is not available, Nevada Hydro has identified potentially suitable habitat in vicinity of the proposed transmission line and evaluated the potential risk of collisions for different segments of the line. Nevada Hydro proposes to install the transmission lines utilizing Avian Power Line Interaction Committee (APLIC) standards for collision-reducing techniques. Overhead lines that are located in highly utilized avian flight paths would be marked to increase visibility of the line to birds and to reduce possible avian collisions. Nevada Hydro has determined that segments requiring markers include those locations where the transmission line would cross Temescal Wash near Lee Lake, Cow Canyon, Horsethief Canyon, McVicker

Canyon, Leach Canyon, Los Alamos Canyon, and Tenaja and San Mateo Creeks. Therefore, staff believes that there is sufficient information to assess potential effects to birds and the need for mitigation and do not recommend that Nevada Hydro conduct the requested study.

## **Study 27--Potential Effects of LEAPS on Property Values**

### Study Request

The City requests that Nevada Hydro conduct an additional study of the short- and long-term effects of the proposed project on residential property values associated with the views of, and proximity to, the proposed substations, powerhouse, and transmission lines.

### Nevada Hydro

Nevada Hydro states that socioeconomic impacts were addressed in the 2007 final EIS in Section 3.3.8.2 and in Commission staff's response to comments 195, 198, 218 and 227 in Appendix E of the final EIS. Nevada Hydro says it also updated this discussion in Section 5.12 of Volume 2 of the FLA and disagrees that any update to these conclusions is needed at this stage of the licensing process.

### Discussion and Staff Recommendation

Given that the majority of the powerhouse would be underground, the greatest potential for negative effects on property values lies with the aboveground substation at the powerhouse site and with the transmission line.

In the final EIS, staff discussed the various research available on this topic and provided an analysis of the likely effects of the proposed project on property values. We think the information already available on the effects of LEAPS development on residential property values is still relevant for the Commission to generally assess the property value effects of the proposed project. Therefore, we do not recommend that Nevada Hydro conduct the requested study.

## **Study 28--Fire Study**

### Study Request

The Forest Service and the Decker Landowners request that Nevada Hydro

conduct a study of the potential impacts of the proposed project on fire risk and firefighting activities. The Forest Service requests an assessment that would identify the extent of hazardous fuel loading, fire risk, and potential effects to firefighting efforts that could be affected by the proposed project.

Decker Landowners also request an analysis of the extent to which the proposed upper reservoir's water would be available for firefighting activities during times of high fire risk.

### Nevada Hydro's Response

Nevada Hydro disputes the need for additional study of fire-related issues, and asserts that the Forest Service is ultimately responsible for directing fire suppression activities in the area. Furthermore, Nevada Hydro says that the Forest Service's previously filed preliminary 4(e) conditions (filed June 22, 2006) for Project No. 11858 and the 2007 final EIS sufficiently address the issue of fire risk. Additionally, Nevada Hydro says that there is no need for an additional study of fire-related issues because the currently proposed project is similar to the "staff alternative" from the 2007 final EIS, which Commission staff recommended, in part, because it would, comparatively, minimize some of the fire-related impacts of Nevada Hydro's original proposal.

### Discussion and Staff Recommendation

The proposed project would be located in an area that has historically been impacted by wildfires, where wind patterns potentially exacerbate wildfires that do occur, and where residential development has occurred along the border of the Cleveland National Forest. Decker Landowners' study request shows the proposed LEAPS facilities would be located within the affected area of three significant fires that have occurred within the last 5 years. Additionally, since the 2007 final EIS, additional residential development and significant population growth have occurred in the vicinity of the project. These changes to the affected environment indicate there is a potentially greater project effect on fire risk than was analyzed in the 2007 FEIS for P-11858.

Although Nevada Hydro correctly states that adjustments of the proposed transmission alignment were made during the previous proceeding to reduce project effects on firefighting activities, there was no study of potential project effects on fire risk. Forest Service preliminary 4(e) condition 9 from the previous proceeding did require a study prior to construction, but, to date, no such study has been conducted. Consequently, the 2007 FEIS for P-11858 does not include a detailed analysis of fire risk and fuel loading, potential project effects on fire suppression efforts, and availability of upper reservoir water for firefighting. Requiring fire studies now would give Commission and Forest Service staff the opportunity to assess hazardous fuel loading and

project infrastructure fire risk as part of the project environmental review, and recommend design and mitigation measures to reduce biomass on proposed project lands and mitigate for impacts to fire suppression efforts. Therefore, Nevada Hydro must conduct a study of hazardous fuel loading and fire risk study before Commission issuance of the REA notice.

Nevada Hydro should consult with the Forest Service to develop a study plan for Commission approval. The study should, at a minimum, include the following elements: (1) quantify the fuel loadings and fire risk in the vicinity of the proposed project using standard forestry methodology including fire behavior models; (2) describe how proposed project infrastructure could impact fire suppression efforts, particularly impacts to aircraft; and (3) provide an analysis of proposed project operations' impacts on the availability of upper reservoir water for firefighting.

In consultation with the Forest Service, Nevada Hydro should develop a study plan and submit this study plan to the Forest Service for review, allowing at least 30 days for the Forest Service to comment prior to submission for Commission staff approval. If Nevada Hydro does not adopt recommendations provided by the Forest Service, then it should provide its reasons for doing so using specific, detailed information. If Nevada Hydro and the Forest Service disagree on the details of the study plan, then Commission staff will resolve any disagreements in its study plan approval.

## **Study 29--Assessment of Recreation**

### Study Request

The City and the Regional Water Board are concerned that water level changes in Lake Elsinore due to proposed project operations could affect recreation in the lake and the surrounding area. The City and the Regional Water Board request a study of the proposed project's impacts on recreation. Specifically, they request an assessment of the effects of lake level fluctuations and the construction of proposed project facilities on recreation at Lake Elsinore and the surrounding area. Additionally, the City requests a recreation needs study in the proposed project area.

### Nevada Hydro's Response

Nevada Hydro states that it is willing to work with stakeholders to study potential project-related effects on recreation that would assist in the development of protection, mitigation, and enhancement measures, but does not believe the results of such a study are needed at this time. Nevada Hydro does not propose a specific timeline for conducting such a study.

### Discussion and Staff Recommendation

Section 7 of Exhibit E of the FLA provides a report on recreational resources in the vicinity of the proposed project. Commission's staff's analysis for P-11858 is sufficient to assess the effects of the proposed project on recreation since the currently proposed project is largely the same. Since Nevada Hydro proposes an alternate upper reservoir site that would remove land from public use, Commission staff requested additional information on recreation use at the proposed upper reservoir site on January 3, 2018. In its April 3, 2018, response, Nevada Hydro proposes to collect this information and provide it to the Commission. Commission staff's review and approval of the study plan is ongoing.

### **Study 30--Visual Simulations**

#### Study Request

The City and Lakeside request an updated and expanded visual simulation study for the proposed project. The purpose of the study is to create visual simulations of proposed project infrastructure as viewed from key observation points that would enable an analysis of the proposed project's effects on aesthetic resources. The City notes that the simulations provided in Section 8 of Exhibit E of the FLA are low quality, out of date, and fail to depict important portions of the proposed project infrastructure. Both requestors note that residential development has occurred near the proposed project since the simulations in the FLA were created.

#### Nevada Hydro's Response

Nevada Hydro states that it agrees that the visual simulations should be updated and expanded but does not propose a specific timeline for doing so.

### Discussion and Staff Recommendation

Section 8 of Exhibit E of the FLA includes several visual simulations, and indicates the source of these simulations is the "California Public Utilities Commission." However, the list of references fails to indicate the specific document that originally contained these simulations, and the simulations themselves lack any of the commonly accepted essential descriptive information (e.g. coordinates of observation point, camera information, preparer name, etc.). Regardless, based on the captions that describe a "transmission-only" project alternative, we assume these simulations were prepared at least 10 years ago.

New residential development has occurred in the project since the visual simulations in the FLA were prepared. Furthermore, the seven visual simulations in the FLA do not adequately capture entire portions of the proposed project, which includes 32 miles of transmission line. The proposed project could affect the aesthetic resources in the vicinity of the project, and the visual simulations in the FLA do not provide adequate information to analyze the potential aesthetic effects of the proposed project. Because this information is needed for us to adequately analyze the potential aesthetic effects of the project, Nevada Hydro must conduct an updated visual resources study that addresses the potential aesthetic effects of the project on new development, and includes additional key observation points that represent the extent of proposed project infrastructure. Therefore, Nevada Hydro must conduct a visual resources study.

Nevada Hydro should develop a visual resources study plan, and provide the City and the County of Riverside at least 30 days to comment on the proposed study plan prior to submission for Commission approval. If Nevada Hydro does not adopt any of the commenting entities' recommendations, then it should provide its reasons for doing so using specific, detailed information. Commission staff will resolve any disagreements in its study plan approval.

## **Study 31--Traffic Analysis**

### Study Request

The City requests an updated traffic analysis study because the traffic analysis study in the FLA was conducted in 2003, and only provides an estimate of traffic conditions through 2010.

### Nevada Hydro's Response

Nevada Hydro agrees that an updated traffic analysis study is appropriate, but proposes to conduct the study post-licensing, prior to project construction.

### Discussion and Staff Recommendation

If a license is issued for the proposed project, it would be constructed over several years and would require a significant amount of on-site grading and transport of construction-related material. As a result, constructing the proposed project has the potential to cause significant traffic congestion in the vicinity of the project. The traffic analysis in the FLA is from a study that was conducted in 2003, and only provides estimates of traffic growth through 2010. Due to the residential development that has

occurred in the area since this study was conducted, the traffic analysis study in the FLA should be updated to allow us to adequately address the effects of the project on traffic congestion. Therefore, Nevada Hydro must conduct an updated traffic analysis study before Commission issuance of the REA notice.

At a minimum, the study plan should include the following: (1) the road segments potentially affected by the proposed project over the construction period, (2) a detailed map of these road segments, (3) recent traffic volumes and level of service for the potentially affected road segments and intersections, and (4) construction related traffic affects from both construction-related employees and from the transport of construction-related material.

Nevada Hydro should develop a traffic analysis study plan, and provide the City and the County of Riverside at least 30 days to comment on the proposed study plan prior to submission for Commission approval. If Nevada Hydro does not adopt any of the commenting entities' recommendations, then it should provide its reasons for doing so using specific, detailed information. Commission staff will resolve any disagreements in its study plan approval.

## **Study 32--Project-related Noise**

### Study Request

The City requests that Nevada Hydro conduct a study to assess construction related noise and vibration and its potential effects on surrounding resources.

### Nevada Hydro's Response

Nevada Hydro states that an analysis of project-related noise was included in the 2007 final EIS, and states that an additional study is not necessary.

### Discussion and Staff Recommendation

Project construction has the potential to cause noise that could impact surrounding communities. As noted by Nevada Hydro, the FEIS includes a detailed analysis of potential unwanted sounds from proposed project construction and operation (beginning on page 3-248), which provides the information necessary to analyze the proposed project's impacts on sound. Although there has been new development in the area, the analysis in the FEIS is detailed enough to sufficiently addresses this issue. Therefore, we do not recommend that Nevada Hydro conduct the requested additional study of project related sounds.

## **Study 33--Cultural Resources**

### Study Requests

The Temecula Band of Luiseño Mission Indians (Band) state that additional information has been compiled on traditional cultural properties (TCP) since Nevada Hydro's 2006 studies, which requires updates to the those studies in consultation with the Band. They further request that Nevada Hydro conduct another study to assess the potential of buried archeological deposits in and along the shoreline of Lake Elsinore, which they point out is an established TCP, along with an additional study assessing the visual effects of the Lake Elsinore TCP and surrounding landscape.

The City also requests that Nevada Hydro conduct an additional study for cultural resources that would update the original cultural resources assessment the Nevada Hydro completed in 2003 and filed with their 2004 FLA for P-11858. The City specifies that the additional cultural resources study should include the following three aspects: (1) a comprehensive records search within a 1-mile radius of the proposed powerhouse and within 0.5 mile of the proposed transmission line route, which would account for more recent assessment of cultural resources within the previously defined core area of potential effects (direct) and expanded area of potential effects (indirect); (2) additional surveys along the more than 30-mile segment of transmission lines that have been recently defined; and (3) provide for meaningful consultation with, and input from, Indian tribes that may be affected by the proposed project. The City also added that the 2005 HPMP should be updated based on the updated cultural resources information.

Lakeside requests that Nevada Hydro conduct an extensive cultural and archeological resources study where the proposed project's transmission line would cross through their property. Lakeside is especially concerned about the sensitivity of the Corona Lake area where previous cultural resources studies have been conducted by Lakeside and where sensitive sites of importance to local Indian tribes have been documented. Lakeside further requests to be consulted during the preparation of any new cultural resources studies for the proposed project.

### Nevada Hydro's Response

Nevada Hydro agrees with the need for the studies requested by the City and the Band, and proposes to re-define the Area of Potential Effect (APE) and update the cultural resources study. The proposed updated cultural resources study would include an updated records search, archival research, prehistoric and historic context, ethnographic context (with tribal input), field survey data, summary and conclusion of all

findings, and management recommendations. Furthermore, Nevada Hydro proposes to conduct additional tribal outreach and consultation with all Indian tribes that might be affected by the proposed project.

The additional field work associated with the proposed updated cultural resources study would include revisiting all sites previously inventoried and surveying additional publically accessible areas that were not previously surveyed. Nevada Hydro also proposes to conduct a geoarchaeological study consistent with the Band's request that would discern additional information on the potential of buried archaeological deposits within the APE, and a landscape study consistent with the Band's request that would include a thorough review of ethnographic information and tribal resources associated with TCPs, especially concerning the traditional values of Lake Elsinore and surrounding area. The proposed landscape study would also include a visual assessment to evaluate all viewshed-related effects from the proposed project on significant cultural and tribal resources.

Nevada Hydro proposes to conduct the three cultural resources studies post-licensing but prior to any ground disturbing activities. Nevada Hydro also proposes to develop an HPMP that would be based on the updated inventory and geo-archaeological and TCP landscape study reports.

#### Discussion and Staff Recommendations

We agree with Nevada Hydro's proposal and methodologies to carry out the three additional cultural resources studies within an updated APE (including a detailed map). We also agree with Nevada Hydro conducting the field work components of these studies post-licensing, prior to project construction, to allow for an accurate assessment of the final licensed facilities.

However, all non-field work components of the proposed studies should be conducted now to inform our analysis of potential adverse effects to historic properties and allow us to complete our obligations under section 106 of the National Historic Preservation Act. These non-field components include redefining and updating the APE; updating the records and archival research; and providing an updated prehistoric, ethnographic, and historic context that Nevada Hydro would use in conducting the field work components.

The non-field components also need to be incorporated into the updated HPMP. The updated HPMP would also include a detailed description of all remaining field work to be carried out along with measures to resolve any potential project-related adverse effects to any cultural resource determined eligible for the National Register of Historic Places (i.e., historic properties) and include measures for the treatment of human remains

and unanticipated discoveries. Prior to incorporating the updated APE into the HPMP, Nevada Hydro needs to seek the concurrence from the California State Historic Preservation Office (SHPO) on the updated APE.

In formulating the updated APE, methodologies and results of the non-field components, and incorporating these aspects into the updated HPMP, Nevada Hydro should also consult with the Forest Service, the City, Lakeside, the Band, and the remaining parties that were included in the programmatic agreement issued for P-11858 on February 12, 2007. Nevada Hydro should allow at least 30 days for the consulting parties to comment on the updated HPMP before submitting it for Commission approval. An appendix to the filed updated HPMP should also show the specific comments on the document from each of the consulting parties and how Nevada Hydro either adopted them or give reasons why it did not. Nevada Hydro should file the updated HPMP with the Commission within 90 days from the date of this letter.

### **Study 34--Alternative Northern Transmission Alignments and Proposed Transformer Operation**

#### Commission Staff Study Request

##### *Alternative Transmission Alignments*

Considerable development has occurred since the 2007 final EIS that may affect staff's previously recommended transmission alignment. The final EIS considered the proposed and two alternative alignments for the proposed project's northernmost transmission line segment (shown in figure 8 of final EIS). In order to understand the potential effects of the three potential alignments on current residential and commercial development in the area, Nevada Hydro must conduct an updated study.

For each of the three transmission segments identified above, the study should consider current and planned development in the area of the proposed and alternative segments and summarize the potential effects of each transmission segment on land use, visual, terrestrial, and cultural resources, and include an estimated construction cost for each segment. The study should be done in consultation with the Forest Service and area residential communities, including Lakeside Community, the Terramor Community, and the Sycamore Creek Community.

For segment No. 2, that crosses the Pacific Clay mine, the original alignment of this transmission segment ran through the clay mines brick making facilities. Nevada Hydro should consult with Pacific Clay on whether the transmission tower in this area can be located so that they would not significantly affect existing mine facilities or

mining operations.

Nevada Hydro should include with the completed study results any comments received from the consulted parties, along with its responses to them.

In addition to the proposed and alignment segments noted above, Nevada Hydro should also summarize the potential effects of a segment that would exit Cleveland Forest on an alignment through the undeveloped area between Glen Eden Road to the west and Horse Thief Canyon Road to the east, crossing Route 15 east of Lee Lake.

### *Transmission Operation*

To limit non-project power through the LEAPS transmission lines, Nevada Hydro proposes to install phase shifting transformers. When operating the project to pump water back to Decker Canyon, both the Case and Lake ends of the Transmission line must be closed for the phase shifting transformers to ensure non-project power does not flow from Case to Lake (or from Lake to Case). To accomplish this operation, Nevada Hydro will need to develop operating procedures between Nevada Hydro and the other transmission operators (Southern California Edison, San Diego Gas & Electric, and the California ISO) so that the proposed equipment is operated in a manner to accomplish the above stated objectives. Therefore, Nevada Hydro must conduct a study that provides details regarding the proposed operation of the phase shifting transformers and includes comments on the detailed operations plan from the other transmission operators.

Nevada Hydro should consult with Southern California Edison, San Diego Gas & Electric, and the California ISO on the study plan, allowing at least 30 days for the commenting entities to comment before submission for Commission staff approval. If Nevada Hydro does not adopt any of the commenting entities' recommendations, then it should provide its reasons for doing so using specific, detailed information. If Nevada Hydro and the commenting entities disagree on the details of the study plan, then Commission staff will resolve any disagreements in its study plan approval.